

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3
APPLICATION FOR LICENSE
FOR
STORAGE ONLY OF UNIRRADIATED
REACTOR FUEL AND ASSOCIATED RADIOACTIVE MATERIAL

Southern California Edison Company and San Diego Gas and Electric Company (hereinafter called "Applicants"), pursuant to Title 10, Code of Federal Regulations Part 70, hereby apply for a license to permit the receipt, possession and storage of special nuclear material of unirradiated nuclear fuel assemblies, fission chambers, calibration sources, and startup sources as herein described for San Onofre Nuclear Generating Station, Units 2 and 3. The term of the license requested is for the period beginning November 17, 1978, until such time as it may be supplemented by a permanent operating license.

Southern California Edison Company is a public utility incorporated under the laws of the State of California, with its principal office in Rosemead, California, and is engaged in the generation, distribution, and sale of electricity. The names, addresses, and citizenship of its principal officers are listed in Appendix A of this application. Southern California Edison Company is not owned, controlled or dominated by an alien, foreign corporation, or foreign government.

San Diego Gas and Electric Company is a public utility incorporated under the laws of the State of California, with its principal office in San Diego, California, and is engaged in the generation, distribution, and sale of electricity. The names, addresses and citizenship of its principal officers are listed in Appendix B of this application. San Diego Gas and Electric Company is not owned, controlled, or dominated by an alien, foreign corporation, or foreign government.

Applicants make this application pursuant to authorization by their board of directors and are acting on their behalf and not as agent or representative of any other person.

Applicants request exemption from the requirements of Title 10 CFR Section 70.24 as provided in Subsection 70.24(d). As described herein, the fuel assemblies will be stored in critically safe storage racks. In addition, other administrative procedures as discussed herein preclude the achievement of conditions which could cause criticality.

1.0 GENERAL INFORMATION

1.1 Reactor and Fuel

The special nuclear materials provided for in this license application will be stored at the San Onofre Nuclear Generating Station, Units 2 and 3 reactor site located on the

7903210421

Southern California Coast in San Diego County. The site is 2.5 kilometers southeast of the City of San Clemente, California. Construction of these units was authorized under Permit CPPR-97 and 98 issued October 18, 1973, in response to the Southern California Edison and San Diego Gas and Electric Company application of May 28, 1970 (Docket 50-361 and 50-362).

The fuel assemblies requiring storage are constructed of fuel rods arranged in a square array with 16 rod locations per side and a fuel rod pitch of 0.506 inches. The fuel assembly arrangement (Figure 1) consists of 236 fuel rod positions, 5 Zircaloy-4 CEA guide tubes (each guide tube displaces 4 rod locations), 11 Zircaloy-4 spacer grids, 1 Inconel 625 spacer grid (lower end), stainless steel upper end and lower end fittings and a holddown device. The holddown device consists of the upper cast plate (one of two plates in the upper end fitting) and five helical Inconel X-750 springs.

The fuel rods (Figure 2) contained in a fuel assembly consist of sintered uranium dioxide pellets encased in a cold worked and stress relief annealed Zircaloy-4 tube. During assembly, the fuel pellets are stacked in the cladding tube to the required fuel height. A round wire type 302 stainless steel compression spring and an aluminum spacer disc are inserted at each end of the fuel column. The end plugs are installed and welded into the clad tubing. The fuel rod is internally pressurized with helium during this assembly.

The total weight of U-235 which is to be covered by this application is approximately 4,260 kilograms in 434 fuel assemblies (217 assemblies per core). The core design calls for three regions. Region 1 will contain 73 assemblies with a design enrichment of 1.87% U-235 by weight. Region 2 will contain 80 assemblies with a design enrichment of 2.38% U-235 by weight. Region 3 will contain 64 assemblies with a design enrichment of 2.88% by weight. The total weight of each fuel assembly is 1,451 lbs. Table 1.1-1 summarizes the characteristics of the fuel rods with respect to dimensions, materials, quantities, and other pertinent parameters.

1.2 Storage Conditions

The new fuel storage racks consist of vertical cells grouped in parallel rows to form structural units that are anchored to the floor of the new fuel storage area. The new fuel will be stored dry in these racks which are designed to provide storage for at least 73 fuel assemblies (one-third of a core).

The arrangement results in a k_{eff} of 0.98 or less for dry storage of fuel with the highest anticipated enrichment assuming optimum moderation. The new fuel storage racks are designed to protect the stored assemblies against possible impact loading due to handling of neighboring assemblies and to prevent insertion of assemblies into spaces other than the prescribed locations. Structural deformations are limited and centerline-to-centerline spacing is maintained to preclude the possibility of criticality under all anticipated loading conditions, including the design basis earthquake (DBE). Lateral movement is restricted to maintain safe geometry margins and to preclude the reduction of the space between the fuel assembly cavities.

The new fuel racks, except for access platforms, are constructed entirely of stainless steel. The access platforms are constructed of galvanized carbon steel and do not come in contact with fuel assemblies.

The new fuel storage facility is part of the fuel-handling building, a Seismic Category I structure. A separate fuel handling building is provided for each reactor unit. The new fuel storage facility is located to permit ready access to new fuel assemblies and to facilitate expeditious transfer of the assemblies into the containment during reactor refueling operations.

Figures 3, 4, and 5 show the general arrangements and locations of the new fuel storage facilities in the station complex. The new fuel storage facility is designed in compliance with ANSI N18.2, Nuclear Safety Criteria for Design of Stationary Pressurized Water Reactor Plants.

The normal storage location for new unirradiated fuel is the new fuel storage facility. However, since the new fuel storage facility can accommodate only 73 assemblies, the remainder of the first core, 144 assemblies, will be stored dry in the spent fuel storage facility.

The spent fuel storage racks consist of vertical cells grouped to form structural units that are anchored to the floor of the spent fuel pool. The spent fuel storage racks and pool are designed to provide storage for at least 800 fuel assemblies (three and two-thirds cores). The arrangement results in a k_{eff} of 0.95 or less with the highest anticipated enrichment, assuming an infinite array of fuel storage locations, and flooding with unborated water.

The spent fuel storage facility is part of the fuel-handling building, a Seismic Category I structure. The spent fuel storage facility is designed consistent with ANSI N18.2, Nuclear Safety Criteria for Design of Stationary Pressurized Water Reactor Plants, and Regulatory Guide 1.13, Spent Fuel Storage Facility Design Bases, dated March 10, 1977, as reflected in Part C, Regulatory Position.

The equipment to be used during transfer of new fuel from the shipping containers to the storage racks are the new fuel handling tool, the new fuel handling crane, and the spent fuel handling machine. The new fuel handling crane is a single girder, underhung bridge crane spanning the new fuel storage area. The crane is equipped with a mechanically operated, interlocking device that allows the bridge to be interlocked with a stationary monorail. The interlocking device provides for a positive lock between the bridge and monorail and allows for the safe travel of the hoist between the bridge and the monorail. The interlocking device also prevents the hoist from traveling off of either the bridge or monorail when the bridge and monorail are disengaged. The hoist is an electric hoist and the new fuel handling tool is suspended from the hoist. The new fuel handling tool (Figure 6) is operated manually for safe transfer of the fuel assemblies. The spent fuel handling machine (Figure 7) is a traveling bridge and trolley that rides on rails over the spent fuel pool, fuel transfer pool, and cask loading pit. The spent fuel handling machine hoist assembly contains a grappling device which, when rotated by the actuator mechanism, engages the fuel assembly to be moved. Once the assembly is grappled, a cable and hoist winch raise the fuel assembly. Interlocks are installed so that movement of the spent fuel handling machine is not possible when the hoist is withdrawing or inserting an assembly.

Detailed descriptions and scale drawings of the fuel handling areas and associated equipment are given in the San Onofre Nuclear Generating Station Units 2 and 3 Final Safety Analysis Report (FSAR), Section 9.1.

Before fuel is stored in the fuel-handling building, all construction cranes located close enough to the fuel-handling building with the potential for falling on the building will be removed permanently from the area. As shown in Figures 3 and 4, the two fuel handling buildings are located on the east side of the containment buildings and are thus isolated from the turbine areas,

intake structure, transformers, and diesel generator buildings. These areas are likely to contain the majority of personnel and equipment activity. The area directly east of the fuel handling buildings is a high grade to the switchyard. Thus, the buildings are located in a low activity area which will leave little construction activity and discourages the congregation of men and equipment.

The fire protection system in the new fuel area and spent fuel area consists of detection devices, alarms, and suppression systems. The detection devices, smoke, and fix-temperature-rate-of-rise heat detectors will activate alarms locally and in the control room in case of a fire. The primary means of suppressing the fire will be through portable CO₂ extinguishers and portable dry chemical extinguishers. A more detailed description of the San Onofre Nuclear Generating Station fire protection plan is found in the San Onofre Nuclear Generating Station, Units 2 and 3 FSAR, Section 9.5.1.

When fuel assemblies are stored in the new and spent fuel storage areas, access to the storage area will be restricted to authorized personnel. The only means of access to the new or spent fuel storage areas will be through doors that are locked with keys administered by the Security Supervisor.

1.3 Physical Protection

The new fuel storage facility and the spent fuel storage facility are both located in the fuel handling building which is a controlled access area. A description of the physical security program for San Onofre Nuclear Generating Station, Units 2 and 3 has been provided to the NRC and has been withheld from public disclosure pursuant to paragraph 2.790(d), 10CFR Part 2, Rules of Practice.

The fuel assemblies furnished for the first core at San Onofre Nuclear Generating Station, Units 2 and 3, contain no materials enriched in U-235 in greater than 2.88% by weight. The assemblies contain no U-233 nor plutonium. The protective requirements of 10CFR Part 73 therefore do not apply to the San Onofre Nuclear Generating Station, Units 2 and 3, first core new fuel storage.

1.4 Transfer of Special Nuclear Material

Transportation of the new fuel assemblies from the fabrication location to the San Onofre Nuclear Generating Station, Units 2 and 3, will be the responsibility of the fuel

fabricator, Combustion Engineering, Inc., 1000 Prospect Hill Road, Windsor, Connecticut 06095. The fuel assemblies will be delivered to the plant site in shipping containers which are the property of the fuel fabricator, Combustion Engineering, Inc. The shipping container is a steel structure capable of storing or transporting one or two fuel assemblies. Combustion has been licensed by the U.S. Nuclear Regulatory Commission in License SNM-1067 to package and transport fuel assemblies in such shipping containers. As soon as practical after their arrival, the assemblies will be removed individually from their shipping containers and placed in the fuel storage racks.

1.5 Financial Protection and Indemnity

The proof of financial protection furnished under Section 140.15 of 10CFR Part 140 for San Onofre Unit 1 (DPR-13) also applies to San Onofre Units 2 and 3.

2.0 HEALTH AND SAFETY

2.1 Radiation Control

1. The persons responsible for radiation safety at San Onofre Units 2 and 3 are Richard V. Warnock, Chemical and Radiation Protection Engineer, and Glenn E. Davis, Chemical and Radiation Protection Foreman. The training and experience of these persons are shown in Tables 2.1-1 through 2.1-4.
2. Each sealed source will be tested for contamination prior to initial use or storage excluding 100 uCi or less beta and/or gamma emitting materials and 5 uCi or less alpha emitting materials. Monitoring of each source for removable contamination will occur at six month intervals.

The Chemical and Radiation Protection Engineer will directly supervise leak testing of sealed sources. The sources will be smear tested. If the test reveals the presence of 0.005 uCi or more of removable contamination, the source will be withdrawn from use and either decontaminated and repaired, or disposed of in accordance with NRC regulations.

3. Calibration of most ranges of the gamma and beta-gamma detection instruments is performed inside a shielded calibrator. Neutron sources are used to check neutron monitoring instruments. Additional smaller alpha, beta, and gamma sources can be used as necessary to calibrate or check the lower ranges of the various

instruments. Background and a check source are counted prior to the use of each instrument to verify that the instrument has not changed significantly. The instruments are calibrated quarterly. The sources used for calibration are traceable to the National Bureau of Standards or other standards laboratory. At least daily prior to use, the instrument response is checked with an internal or external source to verify that the instrument is functioning properly.

2.2 Nuclear Safety

1. The nuclear fuel assemblies will be transferred individually from their shipping containers for storage in the fuel storage racks.
2. The nuclear safety analysis for storage of fuel in the new fuel and spent fuel storage racks is discussed in San Onofre Nuclear Generating Station Units 2 and 3 FSAR, Section 9.1.
3. The fuel handling equipment and activities will be limited during receipt of the initial core to that required for new fuel inspection and storage. The equipment to be used for new fuel transfer from their containers to the racks are the fuel handling tool, new fuel handling crane, spent fuel handling machine, and such fuel inspection tools as required by procedure.

After arrival of the new fuel shipping containers, the container covers are removed and the fuel assembly strongback raised to the vertical position and locked. The new fuel handling tool, attached to the new fuel handling crane, is then locked to the fuel assembly, the fuel assembly clamping fixtures removed, and the fuel assembly removed from the container. Next, the protective wrapping is removed and the fuel assembly is visually inspected. The fuel assembly is then moved over to the new fuel storage racks where it is placed into its designated cavity. The fuel handling tool is unlocked from the assembly and the operation repeated until the specified number of assemblies are placed in the racks. The remaining assemblies (144) will be placed in the spent fuel assembly storage racks according to a similar procedure. In this case, the spent fuel handling machine is used in place of the new fuel handling crane. During fuel assembly movement to and from storage, only one assembly will be allowed out of a shipping container or storage location at one time in the fuel storage area.

4. Applicants have requested an exemption from the requirements of Title 10CFR Section 70.24 as provided in Subsection 70.24(d) previously in this application.

2.3 Accident Analysis

The possibility of a fuel handling accident is remote because of the many administrative controls and physical limitations imposed on the fuel handling operations. However, it is postulated that a fuel assembly is dropped breaching the cladding of the fuel. In the event of such an occurrence, the associated operation would be halted. The radiation protection personnel would then evaluate the health hazard. The fuel supplier, Combustion Engineering, would be notified of the situation and requested to aid the Plant Staff in evaluating the damage to the affected fuel assemblies.

The possibility of a criticality accident is considered remote due to the design of the fuel-handling and storage equipment and the administrative controls.

The possibility of fuel damage due to fire in the fuel storage area is considered remote due to the limited supply of combustible materials and lack of ignition source.

Design basis fuel handling accidents are discussed in San Onofre Nuclear Generating Station Units 2 and 3 FSAR Section 15.7.3.4.

3.0 Other Materials Requiring NRC License

1. Other special nuclear material for which a license is requested consists of uranium-235 and plutonium-238 in the following forms and quantities.

a) Uranium-235

<u>Form</u>	<u>Amount</u>	<u>Capsule Type</u>	<u>Amount/Chamber</u>
93% U-235	20.4gm	Fission chambers	0.85gm
	of U	manufactured by	of U
	(18.97gm	Reuter-Stokes	
	of U-235)	Model No.	
		RS-C3-2540-102	
		(24 chambers, 12	
		per unit)	

The fission chambers will be used in the ex-core detector system for San Onofre Units 2 and 3.

b) Plutonium-238

<u>Form</u>	<u>Amount</u>	<u>Capsule Type</u>	<u>Source Strength</u>
4 doubly encapsulated Pu-Be sources	80 curies (20 curies/source 1.15gm.Pu-238 per source)	Monsanto Research Corp. Model number will be supplied*	4.4×10^7 neutrons per second $\pm 10\%$

Two sources will be supplied per unit to be used as startup sources. A complete description of the source assembly is contained in CE Drawing No. E-STD-165-220, Rev. 01, attached to this application.

c) Plutonium-238

<u>Form</u>	<u>Amount</u>	<u>Capsule Type</u>
1 doubly encapsulated Pu-Be source	20 curies	Monsanto Research Corp. Model No. 2727B

The source will be contained in the J. L. Shepherd Model 149 neutron calibration facility. The source is fixed to the end of a shielded operating rod which is remotely moved by means of an operating handle-cable assembly. The source position is indicated by lights built into the control box. The dimensions of the calibrator are 33 inches in diameter and 36 inches in height. The external radiation level is less than 5 mrem/hr at one foot from any surface with source in "off" position.

A complete description of the control assembly, source assembly, and container is shown in J. L. Shepherd Drawing Nos. A-0149-3, A-0149-6, and A-0149-7 attached to this application.

2. Storage Conditions

The material described above will be stored at San Onofre Unit 1 (DPR-13) until the health physics area at Units 2 and 3 are complete. The radiation monitoring system, health physics laboratory equipment, and radioactive source materials safety at San Onofre

* By October 1979, four months prior to delivery

Unit 1 are described in the San Onofre Unit 1 Final Safety Analysis Report (FSAR) Sections 5.7, 5.8 and 5.9, respectively. These materials will be under the jurisdiction of the Radiation Protection Group. Individual storage conditions for the above material is as follows:

- a) The fission chambers will be stored in locked cabinets in the health physics area until installation.
- b) The neutron startup sources will be shipped at the time of fuel shipment. They will be stored in their shipping containers in the fuel storage area.
- c) The 20 curie Pu-Be calibration source is contained in the J. L. Shepherd Model 149 calibration facility which will be stored in the health physics area.

Table 1.1-1

Mechanical Design Parameters

Fuel Rods

Fuel material	UO ₂ sintered
Pellet diameter, in.	.325
Pellet length, in.	.390
Pellet density, g/cm ³	10.38
Pellet theoretical density, g/cm ³	10.96
Pellet density (% theoretical)	94.75
Stack height density, g/cm ³	10.061
Clad material	Zircaloy - 4
Clad OD, in.	0.332
Clad ID, in.	0.382
Clad thickness, in.	0.025
Diametral gap, in.	0.007
Active length, in.	150
Plenum length, in.	10.0

Fuel Assembly

Rod array, square	16 x 16
Rod positions	236
Rod pitch, in.	0.506
Weight	1451
Spacer grids	12

Outside dimensions

Fuel rod to fuel rod, in.	7.972 x 7.972
Number per core	217

Table 2.1-1

TRAININGRichard V. Warnock

Type of Training	Where Trained	Duration	On the Job	Formal Course
1. Principles and practices of radiation protection.	a. San Diego State University M.S. degree, Nuclear Chemistry	2 years		X
	b. General Atomic/General Dynamics (linear accelerator facility) San Diego, California	1 week		X
	c. Atomics International (reactor engineering & operation) Los Angeles, California	1 week		X
	d. San Onofre Nuclear Generating Station	5 years	X	
2. Radioactivity measurement standardization and monitoring techniques and instruments.	Same as above			
3. Mathematics and calculations basic to the use and measurement of radioactivity.	Same as above			
4. Biological effects of radiation.	Same as above			

Table 2.1-2

EXPERIENCE WITH RADIATION

Richard V. Warnock

1. Isotope - Cs - 137
Maximum Amount - 130 Ci
Experience at San Onofre Nuclear Generating Station Unit 1
Duration - 5 years
Type of Use - Calibration
2. Isotope - Ra - 226
Maximum Amount - 50 mCi
Experience at San Onofre Nuclear Generating Station Unit 1
Duration - 5 years
Type of Use - Calibration
3. Material - Mixed Fission Products and Activated Corrosion
Products
Maximum Amount 150 Ci
Experience at San Onofre Nuclear Generating Station Unit 1
Duration - 5 years
Type of Use - Solid Waste Shipments
4. Facility - Linear Accelerator
Maximum Amount - 45 Mev photon beam, 1×10^{13} R/hr
Experience - San Diego State University/General Atomic
Duration - Intermittent over 2 years
Type of Use - Sample irradiation

Table 2.1-3

TRAININGGlenn E. Davis

Type of Training	Where Trained	Duration	On the Job	Formal Course
1. Principles and Practices of radiation protection	a. South West Research Laboratory at Las Vegas, Nevada	2 weeks		X
	b. Department of Public Health Research Laboratory at Rockville, Maryland	2 weeks		X
	c. Southern California Edison Division Laboratory	6 months	X	
	d. San Onofre Nuclear Generating Station	10 years	X	
2. Radioactivity measurement standardization and monitoring techniques and instruments.	Same as above			
3. Mathematics and calculations basic to the use and measurement of radioactivity.	Same as above			
4. Biological effects of radiation.	Same as above			

Table 2.1-4

EXPERIENCE WITH RADIATION

Glenn E. Davis

1. Isotope - Cs - 137
Maximum Amount - 130 Ci
Experience at San Onofre Nuclear Generating Station Unit 1
Duration - 10 years
Type of Use - Calibration
2. Isotope - Ra - 226
Maximum Amount - 50 mCi
Experience at San Onofre Nuclear Generating Station Unit 1
Duration - 10 years
Type of Use - Calibration
3. Material - Mixed Fission Products
Maximum Amount - 120-150 Ci
Experience at San Onofre Nuclear Generating Station Unit 1
Duration - 10 years
Type of Use - Spent Resin Shipments

Appendix A

The names of SCE'S principal officers, all of whom are citizens of the United States are as follows:

<u>Name</u>	<u>Position</u>
Jack K. Horton	Chairman of the Board
William R. Gould	President
Howard P. Allen	Executive Vice President
H. Fred Christie	Senior Vice President and Chief Financial Officer
David J. Fogarty	Senior Vice President
A. Arenal	Vice President
J. H. Drake	Vice President
Joe T. Head, Jr.	Vice President
A. L. Maxwell	Vice President and Comptroller
Jack B. Moore	Vice President
Edward A. Myers, Jr.	Vice President
William H. Seaman	Vice President
Robert E. Umbaugh	Vice President
G. E. Wilcox	Vice President
Rollin E. Woodbury	Vice President and General Counsel
Michael L. Noel	Treasurer
J. C. Bobek	Secretary

The address of all the foregoing principal officers of SCE is:

Post Office Box 800
Rosemead, California 91770

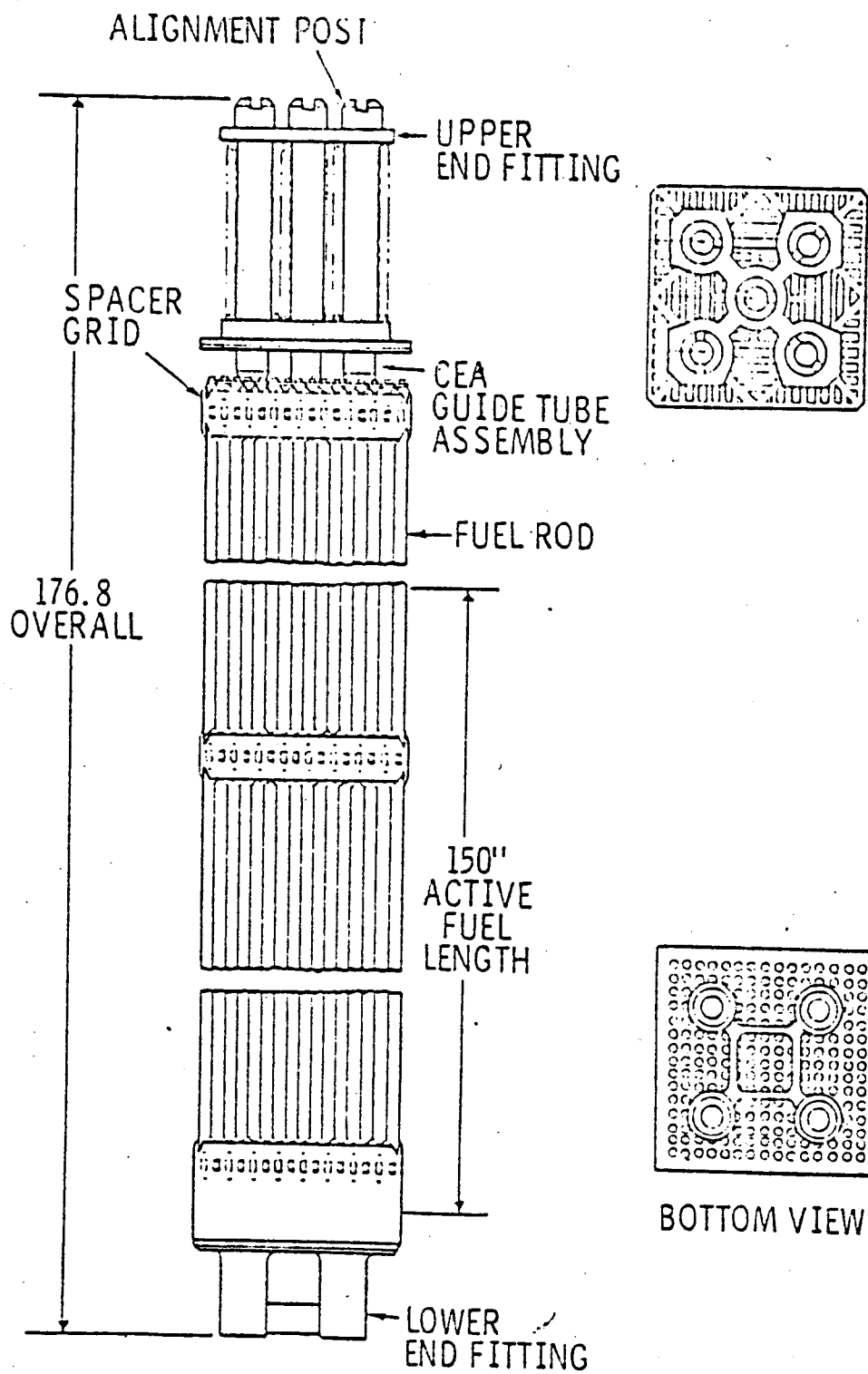
Appendix B

The names of SDG&E's principal officers, all of whom are citizens of the United States, are as follows:

<u>Name</u>	<u>Position</u>
Robert E. Morris	President and Chief Executive Officer
Thomas A. Page	Executive Vice President and Chief Operating Officer
J. Robert Belt	Senior Vice President
David W. Gilman	Senior Vice President
Ralph L. Meyer	Senior Vice President and Treasurer
Alton T. Davis	Vice President
Frank W. DeVore	Vice President
John E. Hamrick	Vice President
James J. Holley	Vice President
Philip M. Klauber	Vice President
Gordon Pearce	Vice President and General Counsel
R. Denis Richter	Vice President
Jack E. Thomas	Vice President
John H. Woy	Vice President
William J. Karnes	Secretary

The address of all the foregoing principal officers of SDG&E is:

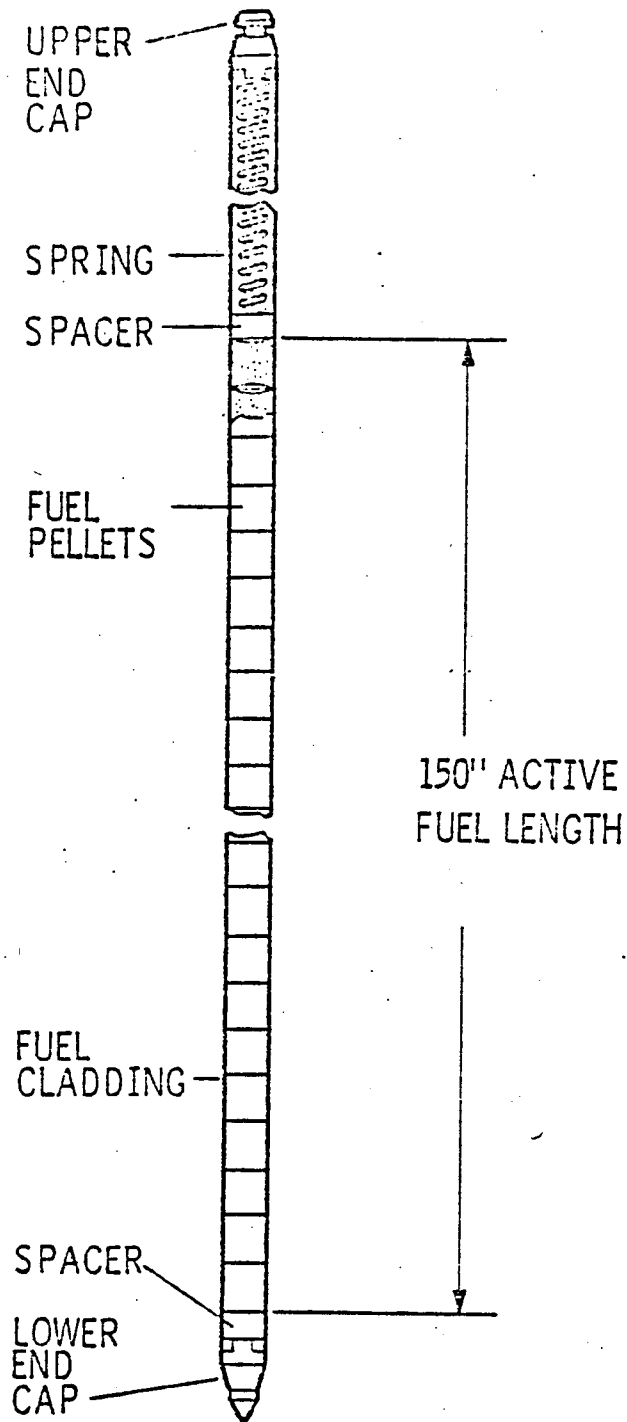
101 Ash Street
San Diego, California 92101



SAN ONOFRE
NUCLEAR GENERATING STATION
Units 2 & 3

FUEL ASSEMBLY

Figure 1

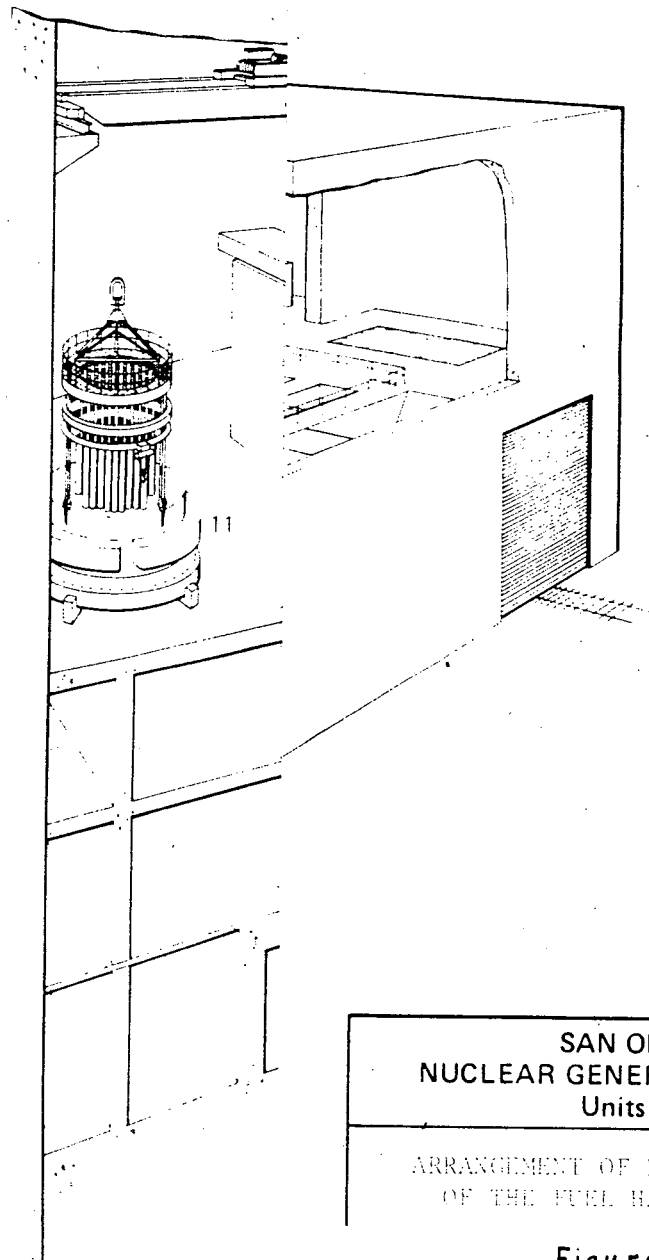


SAN ONOFRE
NUCLEAR GENERATING STATION
Units 2 & 3

FUEL ROD

Figure 2

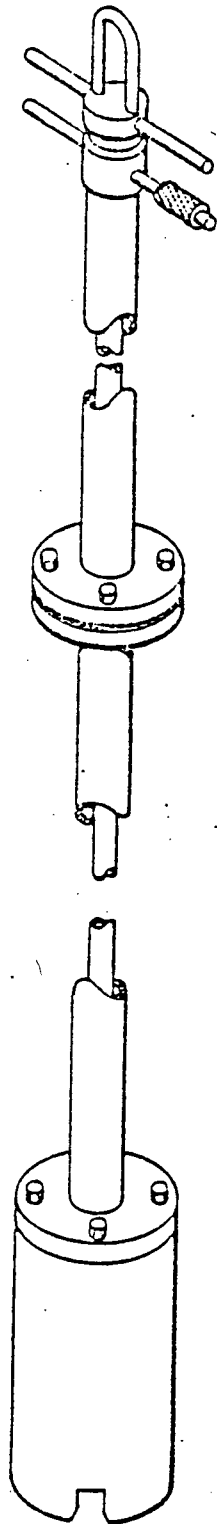
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/E
G MACHINE
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PACKAGE
CONTAINER PIT



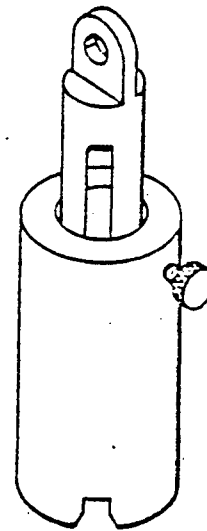
SAN ONOFRE
NUCLEAR GENERATING STATION
Units 2 & 3

ARRANGEMENT OF MAJOR COMPONENTS
OF THE FUEL HANDLING SYSTEM

Figure 5



SPENT FUEL HANDLING
TOOL

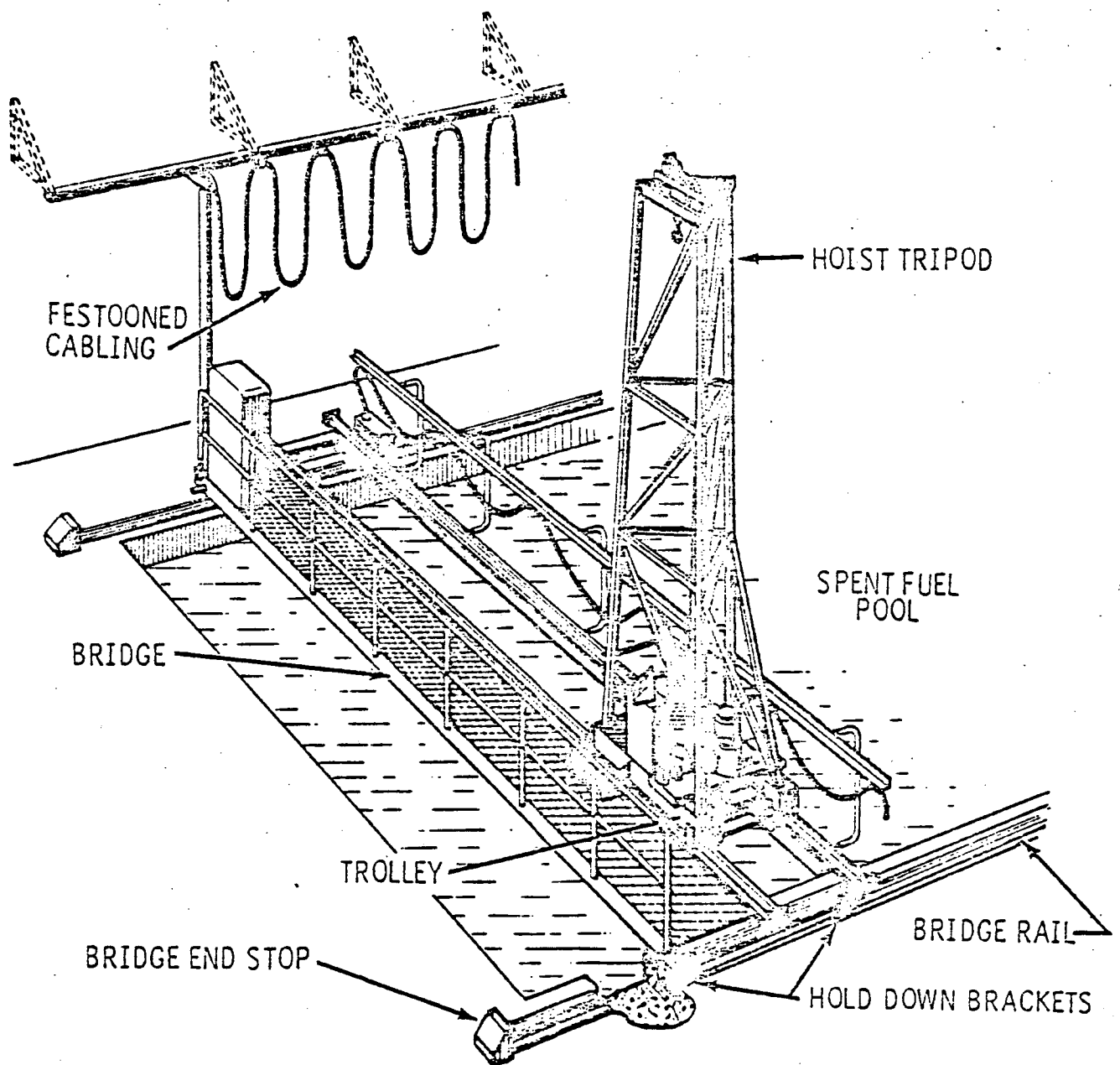


NEW FUEL HANDLING TOOL

SAN ONOFRE
NUCLEAR GENERATING STATION
Units 2 & 3

FUEL HANDLING TOOLS

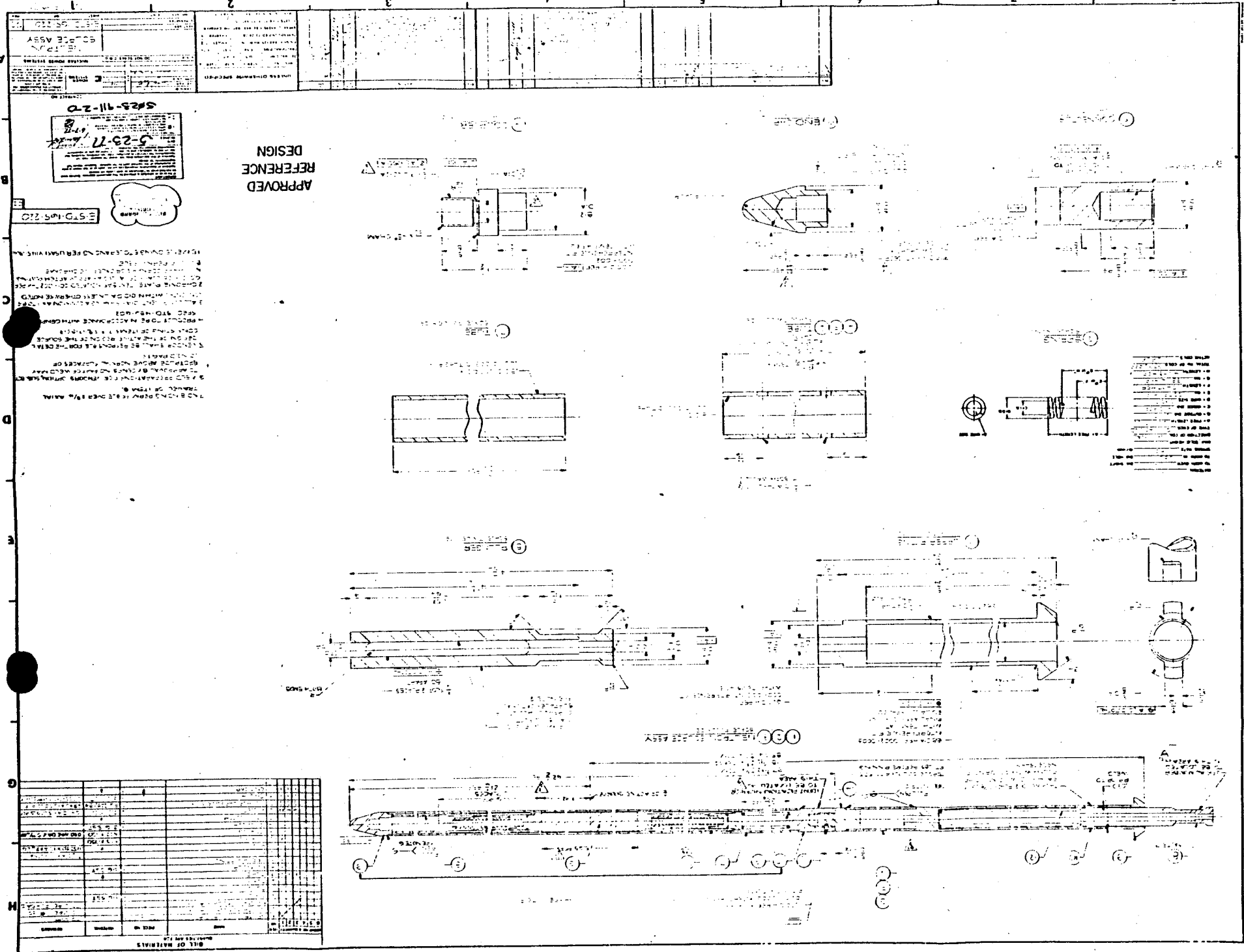
Figure 6



SAN ONOFRE
NUCLEAR GENERATING STATION
Units 2 & 3

SPENT FUEL
HANDLING MACHINE

Figure 7.

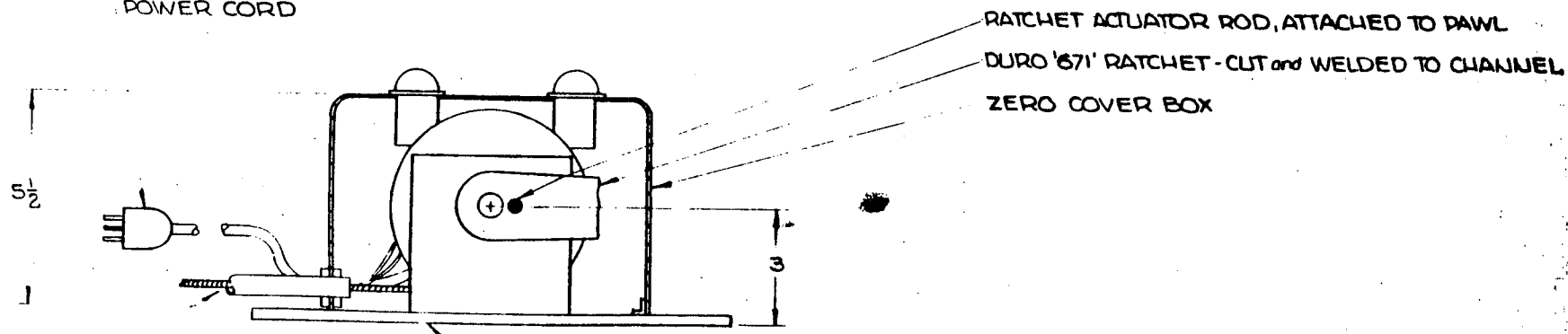
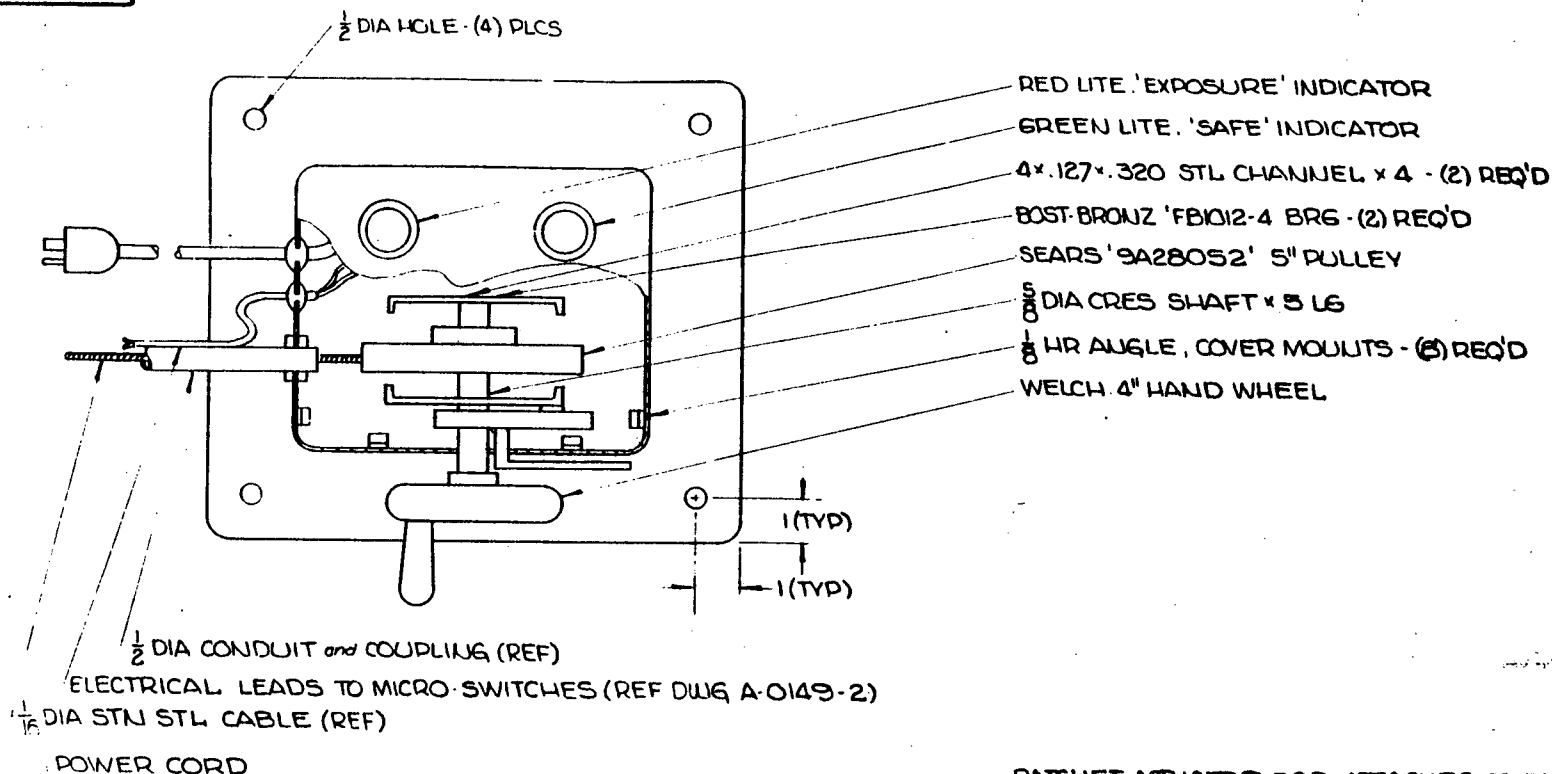


APPROVED
REFERENCE
DESIGN

1. THIS DRAWING IS A REFERENCE DESIGN. IT IS NOT TO BE USED FOR THE DESIGN OF A NEW PRODUCT. IT IS TO BE USED AS A GUIDE ONLY. THE DESIGNER IS RESPONSIBLE FOR THE DESIGN OF THE PRODUCT. THE USER OF THIS DRAWING IS ADVISED THAT THE DESIGN IS NOT GUARANTEED. THE USER OF THIS DRAWING IS ADVISED THAT THE DESIGN IS NOT GUARANTEED. THE USER OF THIS DRAWING IS ADVISED THAT THE DESIGN IS NOT GUARANTEED.

BILL OF MATERIALS			
ITEM NO.	DESCRIPTION	QTY	UNIT
1	ASSEMBLY	1	EA
2	COVER	1	EA
3	BASE	1	EA
4	SHAFT	1	EA
5	IMPELLER	1	EA
6	IMPELLER NUT	1	EA
7	IMPELLER WASHER	1	EA
8	IMPELLER KEY	1	EA
9	IMPELLER KEYWAY	1	EA
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NEUTRON SOURCE EXPOSURE
CONTROL ASSY

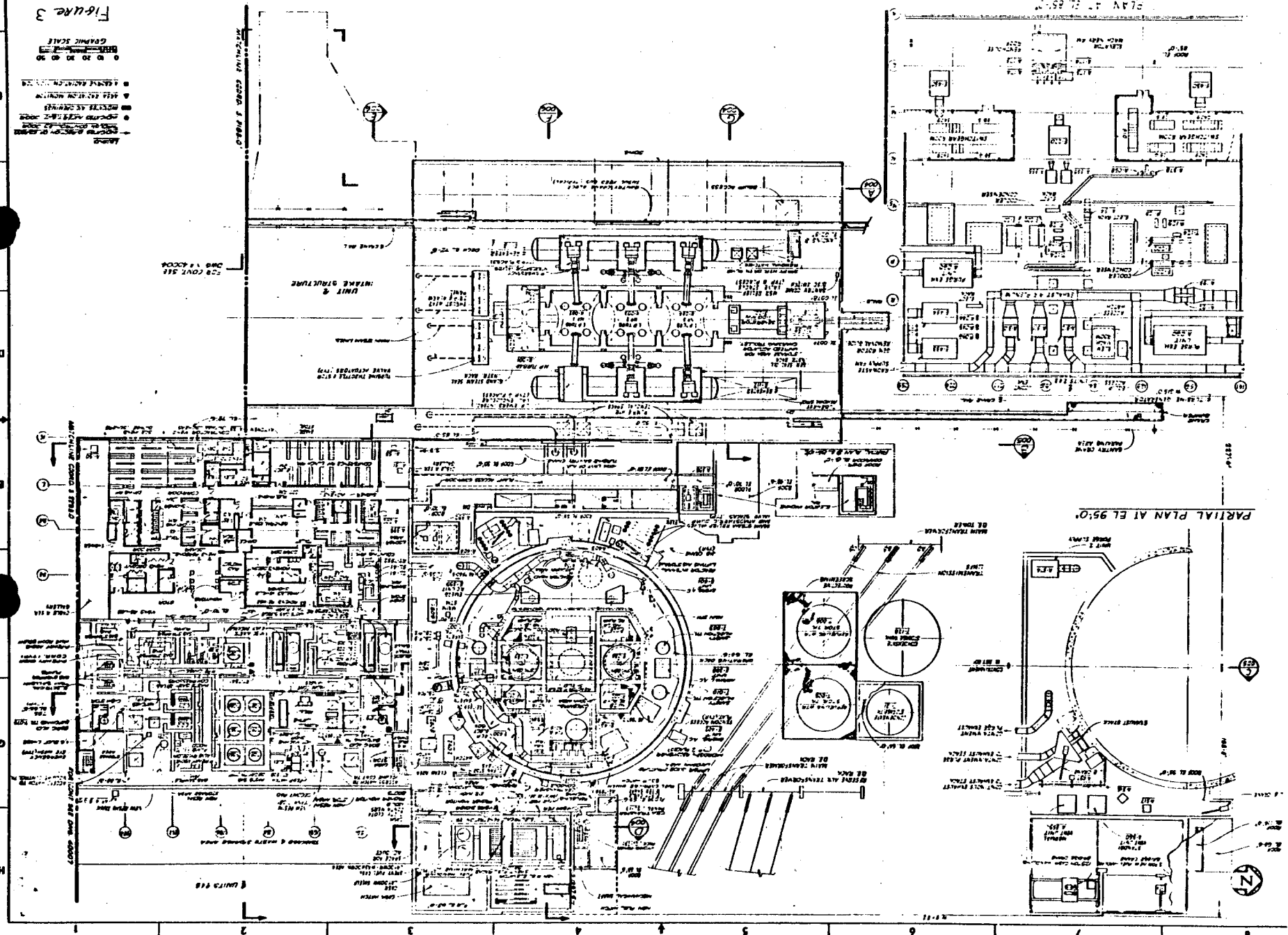


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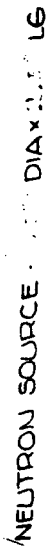
J. L. SHEPHERD and Associates

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GRAPHIC SCALE

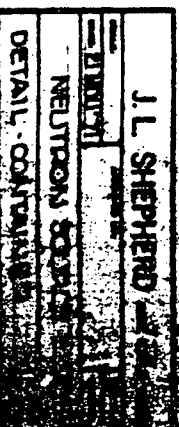
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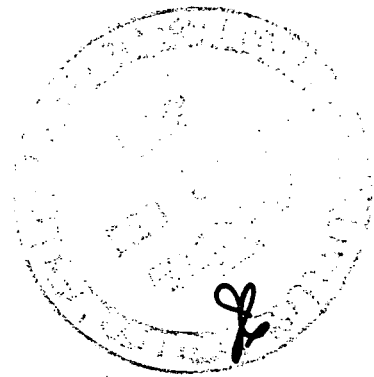


ATTACHED COPY, SEE DWG A-0149-3

72
RELATED CORRESPONDENCE

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4 Attorney for Intervenors

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7

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UNITED STATES OF AMERICA

9

NUCLEAR REGULATORY COMMISSION

10

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

11

In the Matter of

)

Docket Nos. 50-361 OL

12

SOUTHERN CALIFORNIA

)

50-362 OL

13

EDISON COMPANY, et al.,

)

COMMENTS ON DRAFT ENVIRONMENTAL

14

(San Onofre Nuclear Generating
Station, Units 2 and 3)

)

STATEMENT - SAN ONOFRE NUCLEAR

GENERATING STATION, UNITS 2

AND 3

15

16

We have carefully reviewed the above draft environmental

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statement in relation to the requirements imposed by Section

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102(2)(c) of the National Environmental Policy Act (NEPA) and

19

10 CFR Part 51 of the NRC Regulations, and have set forth below

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intervenors' comments on the proposed action and on this draft

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statement pursuant to 10 CFR Part 51.25. Intervenors find this

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draft statement inadequate in a) the discussion and assessment of

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environmental effects, both beneficial and adverse, associated

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with the operation of the San Onofre Nuclear Generating Station,

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Units 2 and 3, and b) the discussion and consideration of avail-

26

able alternatives to the proposed action. Intervenors specifically

27

identify the following deficiencies:

28

1. The evaluation of cooling water discharge impacts is

1 inaccurate and misleading. The heated water will very likely
2 result in the destruction of at least a portion of the San Onofre
3 kelp bed during the summer months, the long-term thermal impacts
4 are likely to be severe, and violations of the state standards
5 will occur. On page 5-7 of the DES it is stated: "The staff
6 concludes that although there exists a remote possibility that
7 state thermal standards could be violated by the operation of
8 Units 2 and 3, violations would, at worst, be infrequent and for
9 short periods. There is no evidence in available drift data to
10 indicate that such an occurrence would take place during the summer
11 when thermal impacts would be most severe." This conclusion was
12 apparently based on applicants' "worst case" modeling theory;
13 however, in light of recent findings as a result of studies pre-
14 sently being performed by the Marine Review Committee (MRC) at the
15 request of the California Coastal Commission, it has been determined
16 that the state thermal standards will not be met. The following
17 excerpts from the "Supplemental Staff Report And Recommendations -
18 Review of Thermal Requirements For San Onofre Nuclear Generating
19 Station, Units 2 and 3" prepared by the California State Water
20 Quality Control Board staff are appropriate: "The Report of the
21 MRC confirms the previous prediction that, under normal operating
22 conditions, the proposed discharge will violate the 20 degree F
23 temperature differential in the "receiving waters" i.e., waters
24 at the location and depth of the diffusers of Units 2 and 3. This
25 Report notes: '...if the "receiving" waters are defined as in
26 this paragraph, the standards of the State Thermal Plan will
27 probably be exceeded by the operation of Units 2 and 3.' Although
28 the Report indicates that the discharge will "likely" or "probably"

1 or "may" violate the temperature differential, there really is no
2 question that such violations will occur." (pp. 4-5)

3 In a hearing for the purpose of interpreting the term "re-
4 ceiving waters" held on December 21, 1978, the California State
5 Water Quality Control Board held that "...the temperature at the
6 intake point does not represent conditions at the receiving
7 waters," (p. 3 of Opinion of Chairman Bryson and Board Member
8 Mitchell) contrary to applicants' requested interpretation. The
9 net result of this ruling is that the state thermal discharge
10 limitation will be exceeded by operation of SONGS Units 2 and 3.

11 The DES states at p. 5-27 "The greatest threat of SONGS to
12 the long-term survival of the San Onofre kelp bed is the
13 possibility of injury to the basal tissues from which the canopy
14 is regenerated each year...under extreme worst case conditions
15 (e.g., several days with high ambient temperatures and slack
16 currents, and with all the plants operating continuously),
17 destruction of the basal regenerative tissues might result." The
18 DES further states: "...the community (kelp bed), if destroyed
19 frequently, could never achieve a stable state characteristic of
20 other kelp beds in the area. Furthermore, constant temperature
21 increases coupled with added turbidity would be inimical to
22 interim reestablishment...The perennial occurrence of worst case
23 conditions seems highly unlikely and the staff thus concludes that
24 the long-term thermal impacts from normal station operation are
25 not likely to be severe." (p. 5-27) It is clear that since the
26 state thermal discharge limitation will be exceeded during normal
27 operation of SONGS 2 and 3, the staff's conclusion was based on
28 a faulty premise. Dischargers' normal plant operation will result

1 in continuous high temperature discharge approximating the worst
2 case conditions and resulting in both short and long-term thermal
3 impacts on the San Onofre kelp beds. The DES states at p. 5-27
4 "It has been rather well established that temperatures above
5 18-20 degrees C. (64-68 degrees F) cause deterioration of kelp,
6 and the degree of degradation is directly related to the duration
7 of the exposure to these temperatures."

8 2. The DES is inadequate in its discussion of the 316(a)
9 exception process as related to thermal pollution caused by the
10 proposed action. Section 6.4.1 of the DES discusses the "thermal
11 exception studies" as related only to periodic "heat treatment" to
12 control fouling organisms. The DES fails to consider the 316(a)
13 exception required for continuous high ambient temperature
14 discharges during the normal operations of Units 2 and 3. It is
15 highly likely that a 316(a) exception request will be forthcoming
16 from applicants in light of the recent denial by the California
17 State Water Quality Control Board of applicants' requested
18 interpretation of the term "receiving waters" as used in the
19 State Thermal Plan. Had applicants' interpretation been approved,
20 it would have obviated applicants' need for a 316(a) exception to
21 the requirements of the FWPCA. Because a 316(a) exception is
22 necessary for the operation of Units 2 and 3 in their present
23 design mode, the DES is inadequate for failure to consider the
24 implications, both short and long-term, on the aquatic environment
25 if such an exception is granted. With respect to the maximum
26 temperature of thermal waste discharges, and contrary to the
27 requirements of 10 CFR Part 51.23(c), due consideration was not
28 given to "...compliance of the facility construction or operation

1 and alternative construction and operation with environmental
2 quality standards and requirements which have been imposed by
3 Federal, State, regional, and local agencies having responsibility
4 for environmental protection, including applicable zoning and
5 landuse regulations and water pollution limitations or requirements
6 promulgated or imposed pursuant to the Federal Water Pollution
7 Control Act."

8 3. The DES is inadequate in its evaluation and analysis of
9 the social and economic impact of operating SONGS 2 and 3.

10 A. With respect to the environmental impact of SONGS
11 on recreational resources, the DES recognizes the failure of
12 applicants to comply with the terms and conditions of the
13 construction permit: "The current plan to restrict the use of
14 approximately 25% of the 3 1/2 mile San Onofre Beach for the 30-
15 year operating life of the plant is a significant loss of valuable
16 recreational and scenic space and represents a substantial change
17 in action between issuance of the FES-CP and application for an
18 operating license." (Section 5.6.5) Staff reiterates previous
19 statements made in the FES-CP that "the beach...is considered to
20 be a unique and scarce recreational resource," (FES-CP, p. 2-11)
21 and "that closure even for a brief period is objectionable"
22 (FES-CP, p. 8-11). Despite the re-affirmation of these
23 judgments, staff concludes that the social and economic impact of
24 operating SONGS 2 and 3 - with the significant exception of
25 restricting public use of the beach - will be only "moderate".
26 The overall impact will be more severe than "moderate" if the
27 beach access restriction is factored into the balancing process.
28 Staff's treatment of this issue is misleading and inconsistent

1 with the purpose and intent of NEPA, section 102(2)(c), which
2 calls for preparation of a detailed statement on, among other
3 things, any irreversible and irretrievable commitments of
4 resources which would be involved in the proposed action should
5 it be implemented. Restriction of the public's use of this beach
6 is such an irreversible and irretrievable commitment of resources.

7 B. With respect to the economic impact of SONGS 2 and 3,
8 the DES provides no analysis of the effects of the Jarvis-Gann
9 Amendment (Proposition 13). The DES states that "The applicant
10 should reassess the potential tax benefits accruing to these
11 jurisdictions and districts in light of Proposition 13."

12 (p . 5-44) This is a wholly inadequate treatment of the economic
13 impact of SONGS 2 and 3, inasmuch as the revenue from the plant
14 and its allocation within communities will be "significantly
15 different from what was assumed" - to use the staff's own words -
16 in this economic impact analysis. (p . 5-44, section 5.6.4)

17 4. The DES inadequately evaluates the environmental impact
18 of postulated accidents in that Class 9 occurrences were omitted
19 from consideration. (Section 7-1) The DES states on p. 7-2 with
20 respect to Class 9 occurrences that "Their consequences could be
21 severe." The DES fails to discuss the probability of Class 9
22 occurrences in a complete and comprehensive manner. In view of
23 the recent earthquake fault discoveries near the San Onofre site
24 and the existence of the dewatering-well cavities found beneath
25 the site, a full discussion of failures more severe than those
26 required for consideration in the design bases of protective
27 systems and engineered safety features (Class 9) is warranted.
28 Further, the estimated dose of 1400.00 man-rem to population in

1 the 50-mile radius for a large-break loss of coolant accident
2 (Table 7.2, p. 7-3, Class 8.1) is substantial and inadequately
3 discussed, if at all, in the text.

4 5. The DES is inadequate in that it fails to discuss the
5 environmental impacts to the region in the event of an accidental
6 release of radiation requiring evacuation. No discussion is
7 contained in the DES as to the adaptability of the San Onofre site
8 to adequate evacuation processes including evacuation of the
9 nearby beach areas during times of peak use; no discussion is
10 contained in the DES as to the suitability of existing evacuation
11 plans; no discussion is contained in the DES as to the effects
12 which adoption of the NRC/EPA Task Force Report on Emergency
13 Planning (NUREG-0396) will have on evacuation within the new and
14 expanded Emergency Planning Zone as distinct from the presently
15 designated Low Population Zone (NRC Regulations 10 CFR Part 100).

16 6. The DES is inadequate in that it fails to reassess the
17 seismic design basis for SONGS 2 and 3 in light of a) the
18 dewatering-well cavities and b) the recent earthquakes and faults
19 discovered since the current design basis was established.

20 7. The DES is inadequate in that the cost/benefit analysis
21 fails to provide consideration for the greatest possible
22 escalation of uranium prices, based on recent occurrences, for
23 SONGS 2 and 3 over the operating life of the plant. The projected
24 fuel costs identified as \$87,900,000/yr for 1981 (Table 10.1,
25 p. 10-2), will possibly escalate to a prohibitively high level
26 since long-term uranium contracts are generally tied to market
27 price at delivery or 7\$ per year escalation, whichever is greater.
28 Staff admits (section 10.3) that since the issuance of the FES-CP

1 the fuel, operating, and maintenance costs of nuclear plant
2 operation have escalated more rapidly than anticipated. The DES
3 does not discuss adequately the possibility of additional future
4 escalation of costs with respect to the fuel requirements of San
5 Onofre, and does not utilize a "worst possible case" approach to
6 determine total fuel costs over the operating life of the plant.
7 The cost/benefit analysis contained in the DES is therefore
8 invalid.

9 8. The DES is inadequate in that it fails to discuss the
10 possibility that decommissioning costs may escalate to
11 prohibitively high levels by the end of the operating life of the
12 plant, at which time the applicant is required to prepare a
13 proposed decommissioning plan for review by the NRC. (Section 9.4)
14 Although NRC regulations do not require the applicant to have
15 developed a decommissioning plan at the time an operating license
16 is obtained, the discussion of alternative decommissioning methods
17 and their associated costs found in the DES is misleading and does
18 not present an accurate projection of what the actual decommission-
19 ing costs for SONGS will be. Staff calculations for determining
20 decommissioning costs per unit of electricity generated do not
21 utilize a start-up date of 1981 or an escalation rate based on the
22 current rate of inflation. Staff's projection that "For the
23 SONGS Units 2 and 3 the decommissioning costs would be about
24 double that indicated for all of the decommissioning one-unit
25 alternatives" (p. 9-17) is wholly inadequate for purposes of
26 making an informed cost/benefit judgment. As a consequence, the
27 cost/benefit analysis for SONGS 2 and 3 is invalid.

28 9. The DES is inadequate in that it fails to comprehensively

1 discuss the temporary storage of nuclear waste materials,
2 including the interim storage of spent fuel, on site.

3 10. The DES is inadequate in that it fails to discuss the
4 issue of plant security and provide assurances that all nuclear
5 materials will remain accounted for and protected from the risk
6 of terrorist or criminal activity or sabotage.

7 Because due consideration was not given to compliance with
8 the requirements of 10 CFR Part 51.23(c), and because this DES
9 fails to consider all environmental impacts of the proposed action
10 and alternatives to the proposed action as required by Section
11 102(2)(c) of NEPA, staff's conclusion that the action called for
12 is the issuance of operating licenses for Units 2 and 3 of SONGS
13 is premature and founded on insufficient and inaccurate data.

14 For the foregoing reasons, intervenors request that the NRC
15 either a) adequately address the issues raised above in the final
16 environmental statement for SONGS 2 and 3, or b) deny applicants'
17 request for licenses to operate SONGS 2 and 3.

18 Dated: Jan 30, 1979

Respectfully submitted,

19
20 Richard J. Wharton
21 RICHARD J. WHARTON
22 Attorney for Intervenors
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

SOUTHERN CALIFORNIA EDISON
COMPANY, et al)

(San Onofre Nuclear Generating
Station, Units 2 and 3))

Docket Nos. 50-361 OL
50-362 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "COMMENTS ON DRAFT ENVIRONMENTAL
STATEMENT - SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 and 3"
have been served on the following by deposit in the United States
mail, first class, this 31st day of January, 1979:

Mr. James H. Drake
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Senior Vice President-Operations
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Chickering & Gregory
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LAW OFFICES OF

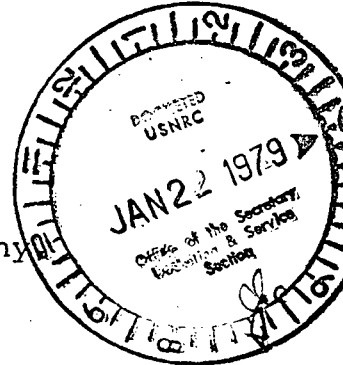
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S308-558-00

January 16, 1979

1/16/79

Richard J. Wharton, Esq.
4655 Cass Street
San Diego, California 92109Re: In the Matter of
Southern California Edison Company
et al.(San Onofre Nuclear Generating
Station, Units 2 and 3).50-361/362
Dear Mr. Wharton:

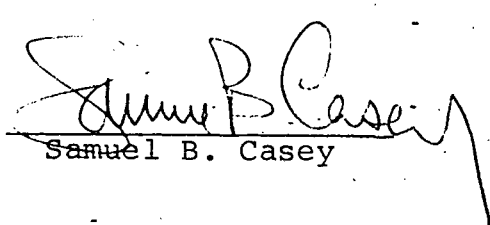
This letter confirms our understanding reached over the telephone this afternoon that Mr. Ron Carstens has agreed to appear to have his deposition taken on February 6, 1979, at 10:00 A.M., in the offices of Irwin & Associates, CSRs, Room 1525, People's National Bank Building, Seattle, Washington. This is the same arrangement as is set forth in the "Notice of Taking Deposition of Ron Carstens" which was served in the above-entitled matter on January 4, 1979.

Thank you for your cooperation in this regard.

Very truly yours,

CHICKERING & GREGORY

By


Samuel B. Casey

SBC:mf

cc: Mr. Ron Carstens
Service List

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16 Southern California Edison Company and
17 San Diego Gas & Electric Company

18 UNITED STATES OF AMERICA
19 NUCLEAR REGULATORY COMMISSION
20 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

21 In the Matter of)
22) Docket Nos. 50-361 OL
23 SOUTHERN CALIFORNIA EDISON COMPANY,) 50-362 OL
24 et al.,)
25) NOTICE OF TAKING DEPOSITION
26 (San Onofre Nuclear Generating) OF RON CARSTENS
27 Station, Units 2 and 3).)
28)

29 TO RON CARSTENS:

30 PLEASE TAKE NOTICE that Applicants, pursuant to
31 10 C.F.R. § 2740a, will take the deposition of RON CARSTENS,
32 P. O. Box 37, Anacortes, Washington 98221, on February 6, 1979,
33 at 10:00 a.m., in the offices of Irwin & Associates, CSRs,
34 Room 1525, People's National Bank Building, Seattle, Washington.
35 The deposition will be on oral examination before a duly
36 certified shorthand reporter authorized to administer oaths under

1 Washington law, and will continue from day to day until completed,
2 Saturdays, Sundays and holidays excepted.

3 Applicants will examine deponent RON CARSTENS concerning
4 uranium prices and related matters.

5 Dated: January 4, 1979.

6 DAVID R. PIGOTT
7 SAMUEL B. CASEY
CHICKERING & GREGORY

8 CHARLES R. KOCHER
9 JAMES A. BEOLETTO
SOUTHERN CALIFORNIA EDISON COMPANY

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11 By David R. Pigott
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13 One of Counsel for Applicants
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Ivan W. Smith, Esq., Chairman
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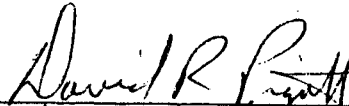
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23 San Clemente, CA 92672

24 Mr. Lloyd von Haden
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26 Vista, CA 92083

27 Atomic Safety and Licensing Board Panel
28 U. S. Nuclear Regulatory Commission
Washington, DC 20555

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555

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Attorneys for Applicants,
Southern California Edison Company
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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket Nos. 50-361 OL
	)	50-362 OL
SOUTHERN CALIFORNIA EDISON COMPANY,)	
et al.,	)	NOTICE OF RESETTING
	)	DEPOSITION OF
(San Onofre Nuclear Generating	)	RON CARSTENS
Station, Units 2 and 3).)	
)	
)	

TO RON CARSTENS:

PLEASE TAKE NOTICE that Applicants, pursuant to
10 C.F.R. §2.740a, will now take the deposition of RON CARSTENS,
P. O. Box 37, Anacortes, Washington 98221, on February 28, 1979,
at 10:00 A.M., in Conference Room 400, Southern California Edison
Company, 2244 Walnut Grove Avenue, Rosemead, California. The
deposition will be on oral examination before a duly certified
shorthand reporter authorized to administer oaths under California
law, and will continue from day to day until completed, Saturdays,

1 Sundays and holidays excepted.

2 Applicants will examine deponent RON CARSTENS concerning
3 uranium prices and related matters.

4 DATED: February 13, 1979

5

6

DAVID R. PIGOTT
SAMUEL B. CASEY
CHICKERING & GREGORY

7

8

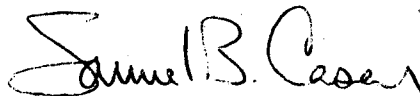
CHARLES R. KOCHER
JAMES A. BEOLETTO
SOUTHERN CALIFORNIA EDISON COMPANY

9

10

11

By



12

Samuel B. Casey
One of Counsel for Applicants

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CERTIFICATE OF SERVICE

I hereby certify that on the 13th day of February, 1979,
a copy of the foregoing "Notice of Resetting Deposition of Ron
Carstens" by Applicants Southern California Edison Company and
San Diego Gas & Electric Company was served upon each of the
following by deposit in the United States mail, first-class
postage prepaid, addressed as follows:

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Lawrence J. Chandler, Esq.
Henry J. McGurren, Esq.
Office of the Executive Legal Director
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence O. Garcia, Esq.
California Public Utilities Commission
5066 State Building
San Francisco, California 94102

David W. Gilman
Robert G. Lacy
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, California 92112

James H. Drake, Vice President
Southern California Edison Company
P. O. Box 800
2244 Walnut Grove Avenue
Rosemead, California 91770

1 John R. Bury, General Counsel
2 Charles R. Kocher, Esq.
3 James A. Beoletto, Esq.
4 Southern California Edison Company
5 P. O. Box 800
6 2244 Walnut Grove Avenue
7 Rosemead, California 91770

8 Alan R. Watts, Esq.
9 Rourke & Woodruff
10 California First Bank Building
11 10555 North Main Street
12 Suite 1020
13 Santa Ana, California 92701

14 Richard J. Wharton, Esq.
15 4655 Cass Street
16 San Diego, California 92109

17 Phyllis M. Gallagher, Esq.
18 615 Civic Center Drive, West
19 Suite 220
20 Santa Ana, California 92701

21 Mrs. Lyn Harris Hicks
22 c/o G U A R D
23 3908 Calle Ariana
24 San Clemente, California 92672

25 Mr. Lloyd von Haden
26 2089 Foothill Drive
27 Vista, California 92083

28 Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Ron Carstens
P. O. Box 37
Anacortes, Washington 98221



Samuel B. Casey
One of Counsel for Applicants

DISTRIBUTION:

LJChandler
HJMcGurren
SATreby
HShapar
TEngelhardt
WPaton
JScinto

12/14/78

December 14, 1978

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Director, Bodega Marine Laboratory
University of California
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Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

In the Matter of Southern California Edison Company, et al.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos: 50-361 OL and 50-362 OL

Gentlemen:

Copies of NUREG/CR-0400, "Risk Assessment Review Group Report to the U.S. Nuclear Regulatory Commission" (the "Lewis Committee Report"), have been furnished directly to the Licensing and Appeal Board Panels for the use of the members of this Board by letter of December 4, 1978. Under cover of copies of this letter, the NRC Staff is enclosing copies of the Lewis Committee Report for the information of the parties to this proceeding. The Commission is presently in the process of developing a policy statement concerning the report.

Sincerely,

Lawrence J. Chandler
Counsel for NRC Staff

HRood - L
RBaer - L
DVassallo - L
HSmith - L
OLynch - EP
WRegan - EP
ELD FF (2)
NRC Central File
LPDR
XX (2)
Chron

Enclosure: As stated

cc w/o enclosure: Individual Board Members
ASLB Panel
ASLAB Panel
Docketing and Service Section

cc w/enclosure: Rest of Service List

OFFICE➤	OEEL					
SURNAME➤	LJChandleras					
DATE➤	12/14/78					

12/14/78

December 14, 1978

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Member
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Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

In the Matter of Southern California Edison Company, et al.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Gentlemen:

Enclosed is a copy of the Draft Environmental Statement related to the operation of San Onofre Nuclear Generating Station, Units 2 and 3. Copies were previously sent to each of the parties by the NRC's Division of Site Safety and Environmental Analyses by letter of November 30, 1978.

Sincerely,

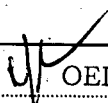
Lawrence J. Chandler
Counsel for NRC Staff

Enclosure: As stated

cc w/o enclosure: To the Service List

DISTRIBUTION:

LJChandler	RBaer - L
HJMcGurren	DVassallo - L
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HShapar	OLynch - EP
TEngelhardt	WRegan - EP
JScinto	ELD FF (2)
WPaton	NRC Central File
HRood - L	LPDR

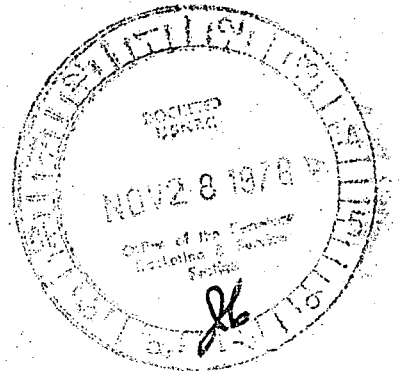
OFFICE ➤	 OELD					XX (2)
SURNAME ➤	LJChandleras					Chron
DATE ➤	12-14-78					

50-361,362

Reg. File

11/17/78

November 17, 1978



Dr. Joseph M. Hendrie, Chairman
Nuclear Regulatory Commission
1717 H Street
N.W. Washington, D.C. 20555

Dear Dr. Hendrie:

I am writing to you concerning nuclear energy. I feel that the state of California should not build any more nuclear power plants. However, if they have to be built, they should build these power plants in a more isolated area such as the desert. If this is going to be the energy of future, they should spread the power plants out over the country and not build them too close heavy populated areas. I live in San Clemente, and the San Onofre Power Plant is not too far from my home. If there was ever a nuclear explosion, it would kill many people; and it would also contaminate the ocean and kill much marine life.

I feel that this will probably be the main source of energy in the future, but more safety precautions should be taken to prevent any kind of explosion. I realize that many people are against nuclear energy. I think in order to prepare the people for this type of energy, the government should distribute information letting the people know the good and the bad points of this type of energy, and how it can help us in the future.

Sincerely yours,

Leslie Bonghi
Leslie Bonghi

cc

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Pocket No.(s) 50-361
COMPANY, ET AL.	)	50-362
)	
(San Onofre Nuclear Generating)	
Station, Unit Nos. 2 and 3))	
)	
)	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this

29th day of Nov 1978.

Peggy T. Downing
Office of the Secretary of the Commission

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
SOUTHERN CALIFORNIA EDISON) Docket No.(s) 50-361
COMPANY, ET AL.) 50-362
)
(San Onofre Nuclear Generating)
Station, Units 1 and 2))

SERVICE LIST

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Bodega Marine Laboratory
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Washington, D.C. 20555

Counsel for NRC Staff
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Washington, D.C. 20555

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San Diego, California 92109

Lyn Harris Hicks
Advocate for GUARD
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San Clemente, California 92672

Mr. Hal Thomas, Director
Environmental Coalition of Orange
County
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Santa Ana, California 92701

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David W. Gilman, Esq.
Robert G. Lacy, Esq.
San Diego Gas & Electric Company
P.O. Box 1331
San Diego, California 92113

October 20, 1978

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

In the Matter of Southern California Edison Company, et al.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Gentlemen:

In accordance with the Licensing Board's Memorandum and Order of October 2, 1978, this is to advise the Licensing Board of the status of the NRC Staff's discovery and its estimates for issuance of the Safety Evaluation Report and environmental statements as well as a date for commencement of the hearing. On June 23, 1978, the Staff served interrogatories upon Intervenor Friends of the Earth, et al. (FOE) and GUARD. To date, responses have been received only from FOE. GUARD's responses, pursuant to the Licensing Board's Order Compelling GUARD to Respond to NRC Staff Interrogatories, dated September 29, 1978, were to be served on or before October 15, 1978. On October 17, 1978 the undersigned was informed by Counsel for GUARD that service of GUARD's responses would be made on that date.

Regarding the issuance of the Staff's Safety Evaluation Report and environmental statements, we currently expect to issue the Safety Evaluation Report in February, 1979, the Draft Environmental Statement in early November, 1978 and the Final Environmental Statement in March, 1979.

OFFICE ➤						
SURNAME ➤						
DATE ➤						

With respect to commencement of the hearing, the Staff proposes the following schedule (which includes intermediate milestones):

DES issued	early November 1978
SER issued	early February 1979
FES issued	early March 1979
Final discovery requests on environmental matters served	March 24, 1979
Responses to interrogatories on environmental matters served	April 12, 1979
Responses to requests for documents on environmental matters served	April 28, 1979
Final Prehearing Conference on environmental matters	May 9, 1979
Testimony filed on environmental matters	May 22, 1979
Hearing commences on environmental matters	June 7, 1979
SER supplement including ACRS letter and Staff responses thereto	late June 1979
Final discovery requests on safety matters served	July 7, 1979
Responses to interrogatories on safety matters served	July 26, 1979
Responses to requests for documents on safety matters served	August 11, 1979
Final Prehearing Conference on safety matters	September 6, 1979
Testimony filed on safety matters	September 25, 1979

Hearing commences on safety matters

October 11, 1979

OFFICE ➤						
SURNAME ➤						
DATE ➤						

Of course, the Staff would expect discovery regarding safety matters to commence upon issuance of the SER in February 1979 and would not await issuance of the supplement. Thus, discovery, if any, after issuance of the SER, would be anticipated to be minimal and limited to matters not previously addressed in the SER.

The foregoing schedule is tentative and is subject to change as the Staff's review progresses. Furthermore, it assumes that discovery requests based on the SER and supplement and FES will be filed within about two weeks after issuance of the respective document. Given the extensive period over which discovery has been underway thus far, such more limited period seems to be entirely appropriate. The schedule also is based on responses to discovery requests being served as provided by the Commission's Rules of Practice, specifically 10 CFR §§ 2.740b(b), and 2.741(d) and the prefiling of written testimony pursuant to 10 CFR § 2.743(b).

Sincerely,

Lawrence J. Chandler
Counsel for NRC Staff

cc: Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
Rollin E. Woodbury, Esq.
David N. Barry III, Esq.
James A. Beoletto, Esq.
David R. Pigott, Esq.
Alan R. Watts, Esq.

Richard J. Wharton, Esq.
Mrs. Lyn Harris Hicks
Phyllis M. Gallagher, Esq.
Atomic Safety and Licensing
Board Panel
Atomic Safety and Licensing
Appeal Panel
Docketing and Service Section

DISTRIBUTION:

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HShapar	LPDR
TEngelhardt	XX (2)
WPaton	Chron
HRood - L	
RBaer - L	
DVassallo - L	
HSmith - L	
OLynch - EP	

OFFICE ➤	OELD	OELD				
SURNAME ➤	LJChandler	SATreby				
DATE ➤	10/20/78	10/20/78				

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Telephone: (415) 393-9000

5 CHARLES R. KOCHER
6 JAMES A. BEOLETT
7 SOUTHERN CALIFORNIA EDISON COMPANY
8 P. O. Box 800
2244 Walnut Grove Avenue
Rosemead, California 91770
Telephone: (213) 572-1900

9 Attorneys for Applicants,
10 Southern California Edison Company
and San Diego Gas & Electric Company

11
12 UNITED STATES OF AMERICA
13
14 NUCLEAR REGULATORY COMMISSION
15
16 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

16 In the Matter of	)	Docket Nos. 50-361 OL
	)	50-362 OL
17 SOUTHERN CALIFORNIA)	
18 EDISON COMPANY, <u>et al.</u>,	)	SECOND DISCOVERY AND
(San Onofre Nuclear Generating	)	STATUS REPORT OF APPLICANTS
19 Station, Units 2 and 3)	)	SOUTHERN CALIFORNIA EDISON
	)	COMPANY AND SAN DIEGO GAS &
	)	<u>ELECTRIC COMPANY</u>
20)	

21 Southern California Edison Company and San Diego Gas &
22 Electric Company (hereinafter "Applicants") submit this report in
23 response to the Memorandum and Order of October 2, 1978, requiring
24 each party in the above-captioned proceeding to report on or
25 before October 20, 1978, the status of its discovery and its
26 estimates for hearing dates.

27 As of the date of this filing, Applicants have responded
28 to interrogatories submitted by FOE, et al. Applicants have not

1 received a discovery request from GUARD.

2 Applicants are now preparing their case for issuance
3 of operating licenses for San Onofre Generating Station, Units 2
4 and 3. The preparation of Applicants' direct case does not re-
5 quire discovery from any other party at this time.

6 On June 28, 1978, as a part of its overall preparation
7 for hearing, Applicants served a first set of interrogatories on
8 FOE, et al. and GUARD, the intervenors in this proceeding. The
9 primary purpose of these interrogatories was to elicit a specific
10 articulation of the precise bases for each of the intervenors'
11 contentions, and to discover the documents and witnesses each
12 intervenor will rely on at hearing. FOE, et al. and GUARD have
13 separately responded to Applicants' first set of interrogatories.
14 Applicants may engage in additional discovery to further clarify
15 the intervenors' positions and to examine prospective intervenor
16 witnesses as they are identified pursuant to 10 C.F.R. §2.740(e).

17 Applicants are aware of the possibility of summary
18 disposition of contentions in nuclear licensing proceedings. In
19 order to facilitate this licensing proceeding, Applicants may
20 move for summary disposition well before the hearings in this
21 matter if it appears that as to a particular contention there is
22 no genuine issue as to a material fact and that Applicants are
23 entitled to a decision on that contention as a matter of law.

24 Applicants anticipate being ready to begin safety or
25 environmental hearings in this matter within thirty (30) days of
26 receipt of the Safety Evaluation Report (including all supplements
27 thereto) or the Final Environmental Impact Statement, as the case
28 may be. Based on correspondence with the NRC Staff, Applicants

1 presently estimate that the Staff will complete its review and
2 issue its Safety Evaluation Report on or before May 1, 1979; and
3 its Final Environmental Impact Statement on or before April 1,
4 1979.

5 Applicants presently plan initial fuel load of Unit 2
6 in February, 1980; and of Unit 3 in May, 1981. This being the
7 case Applicants are hopeful that all hearings in this matter
8 will be completed by September, 1979 so that the initial decision
9 and the operating license for each Unit can issue without
10 adversely affecting the initial load date for either Unit 2 or 3.

11 DATED: October 20, 1978.

12
13 Respectfully submitted,

14 DAVID R. PIGOTT
15 SAMUEL B. CASEY
16 CHICKERING & GREGORY

17 CHARLES R. KOCHER
18 JAMES A. BEOLETT
19 SOUTHERN CALIFORNIA EDISON COMPANY

20 By /s/ David R. Pigott

21 DAVID R. PIGOTT

22 One of Counsel for Applicants
23 Southern California Edison Company
24 and San Diego Gas & Electric Company
25
26
27
28

CERTIFICATE OF SERVICE

I hereby certify that on the 20 day of October, 1978,
a copy of the foregoing SECOND DISCOVERY AND STATUS REPORT OF
APPLICANTS SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS &
ELECTRIC COMPANY was served upon each of the following by deposit
in the United States mail, first-class postage prepaid, addressed
as follows:

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Lawrence J. Chandler, Esq.
Office of the Executive Legal Director
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
California Public Utilities Commission
5066 State Building
San Francisco, California 94102

David W. Gilman
Robert G. Lacy
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, California 92112

James H. Drake, Vice President
Southern California Edison Company
P. O. Box 800
2244 Walnut Grove Avenue
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2 Charles R. Kocher, Esq.
3 James A. Beoletto, Esq.
4 Southern California Edison Company
5 P. O. Box 800
6 2244 Walnut Grove Avenue
7 Rosemead, California 91770

8 Alan R. Watts, Esq.
9 Rourke & Woodruff
10 California First Bank Building
11 10555 North Main Street, Suite 1020
12 Santa Ana, California 92701

13 Richard J. Wharton, Esq.
14 4655 Cass Street
15 San Diego, California 92109

16 Phyllis M. Gallagher, Esq.
17 615 Civic Center Drive, West
18 Suite 220
19 Santa Ana, California 92701

20 Mrs. Lyn Harris Hicks
21 GUARD
22 3908 Calle Ariana
23 San Clemente, California 92672

24 Mr. Lloyd von Haden
25 2089 Foothill Drive
26 Vista, California 92083

27 Atomic Safety and Licensing Board Panel
28 U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



SAMUEL B. CASEY

One of Counsel for Applicants
Southern California Edison
Company and San Diego Gas &
Electric Company

October 18, 1978

Phyllis M. Gallagher, Esq.
Suite 220
615 Civic Center Drive West
Santa Ana, California 92701

DISTRIBUTION:

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TEngelhardt
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RBAer - L
~~DV...~~
OLynch - EP
WRegan - EP
ELD FF (2)
~~HS...~~

In the Matter of Southern California Edison Company, et al.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Dear Ms. Gallagher:

This is in response to your letter of October 6, 1978 requesting our opinion as to the issues to which GUARD's testimony should be directed and inquiring whether the Staff will be presenting any materials concerning the Rasmussen Report.

With respect to GUARD's issues in this proceeding, I again refer you to the Licensing Board's Memorandum and Order of January 27, 1978. A copy of this was sent to you as an attachment to my letter of September 13, 1978. Any judgment regarding the scope and nature of these issues and your testimony on them must, of course, be made by you and GUARD. While I reiterate my offer to discuss with you on an informal basis, in person or by phone, any matter related to the licensing proceeding, a written opinion such as you have requested would be inappropriate.

Regarding the Rasmussen Report (Reactor Safety Study, WASH-1400, NUREG-75/014), I cannot now advise you what use, if any, the Staff will make of it in this proceeding. At such time as we determine what evidence the Staff will present on the admitted contentions, you and all other parties will be informed in accordance with the Commission's regulations.

For your future information, my phone number is now (301) 492-8658; Mr. McGurren, my co-counsel can still be reached on (301) 492-7836.

Sincerely,

NRC Central File
LPDR
Chron

Lawrence J. Chandler
Counsel for NRC Staff

OFFICE >	OELD <i>up</i>	OELD <i>SA</i>				
SURNAME >	LJChandleras	SATreby				
DATE >	10/18/78	10/18/78				

Southern California Edison Company



P.O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

JAMES A. BEOLETTO
ASSISTANT COUNSEL

LAW DEPARTMENT

TELEPHONE
(213) 572-1900

October 17, 1978

10/17/78

Secretary
Nuclear Regulatory Commission
Washington, D.C. 20555

Our File
No. 6168-1

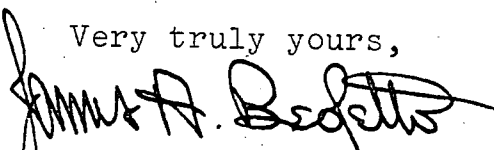
Attention: Chief
Docketing and Service Section

Dear Sir:

Re: San Onofre Nuclear Generating Station,
Unit Nos. 2 and 3, Docket Nos. 50-361
and 50-362

Enclosed for filing are original and twenty
conformed copies of Notice of Withdrawal of Counsel in the
above proceeding.

Very truly yours,


James A. Beoletto
Assistant Counsel

JB:dpc
Enclosure

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of

SOUTHERN CALIFORNIA EDISON COMPANY
SAN DIEGO GAS & ELECTRIC COMPANY

(San Onofre Nuclear Generating
Station, Unit Nos. 2 and 3)

)
)
) Docket Nos. 50-361
) and 50-362
)
)
)
)

NOTICE OF WITHDRAWAL OF COUNSEL

The undersigned herewith withdraw as attorneys for
SOUTHERN CALIFORNIA EDISON COMPANY in the above proceeding.

The following attorneys will continue to represent
Southern California Edison Company: Charles R. Kocher and
James A. Beoletto.

DATED: October 24, 1979

Rollin E. Woodbury
ROLLIN E. WOODBURY
Attorney at Law

David N. Barry III
DAVID N. BARRY III
Attorney at Law

CERTIFICATE OF SERVICE

I hereby certify that on the 24th day of October, 1978, a copy of the foregoing Notice of Withdrawal of Counsel was served upon each of the following by deposit in the United States mail, postage prepaid, addressed as follows:

Ivan W. Smith, Esq.
Chairman
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

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Director, Bodega Marine
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Lester Kornblith, Jr.
Member, Atomic Safety
and Licensing Board
U.S. Nuclear Regulatory
Commission
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Office of the Executive
Legal Director
U.S. Nuclear Regulatory
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4655 Cass Street
San Diego, CA 92109

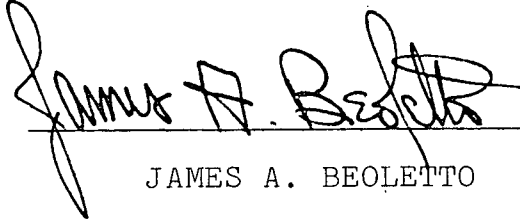
Phyllis M. Gallagher, Esq.
615 Civic Center Dr., West
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Lynn Harris Hicks
G U A R D
3908 Calle Ariana
San Clemente, CA 92672

Lloyd von Haden
2089 Foothill Drive
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Atomic Safety and
Licensing Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Certificate of Service
Page Two



JAMES A. BEOLETTA

Southern California Edison Company



P.O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

JAMES A. BEOLETTO
ASSISTANT COUNSEL

LAW DEPARTMENT

TELEPHONE
(213) 572-1900

October 17, 1978

10/17/78

Secretary
Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Chief
Docketing and Service Section

Our File
6168-1

Dear Sir:

Re: San Onofre Nuclear Generating Station,
Unit Nos. 2 and 3, Docket Nos. 50-361
and 50-362

Enclosed for filing are original and twenty conformed
copies of Notice of Appearance in the above proceeding.

Very truly yours,

James A. Beoletto
James A. Beoletto
Assistant Counsel

JB:dpc
Enclosure

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))
_____)

Docket Nos. 50-361 OL
50-362 OL

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the above captioned proceeding. In accordance with 10 CFR § 2.713, the following information is provided:

Name	Charles R. Kocher
Address	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770
Telephone	(213) 572-3998
Admissions	Before the Supreme Court of the State of California
Name of Party	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770

Charles R. Kocher

Charles R. Kocher
One of Counsel for Southern
California Edison Company

Dated: Oct 17, 1978

CERTIFICATE OF SERVICE

I hereby certify that on the 24th day of October, 1978, a copy of the foregoing Notice of Appearance were served upon each of the following by deposit in the United States mail, postage prepaid, addressed as follows:

Ivan W. Smith, Esq.
Chairman
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr.
Director, Bodega Marine
Laboratory
University of California
P. O. Box 247
Bodega Bay, CA 94923

Lester Kornblith, Jr.
Member, Atomic Safety
and Licensing Board
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Washington, D.C. 20555

Lawrence J. Chandler, Esq.
Office of the Executive
Legal Director
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Washington, D.C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
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Utilities Commission
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Rourke & Woodruff
California First Bank Bldg.
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Santa Ana, CA 92701

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4655 Cass Street
San Diego, CA 92109

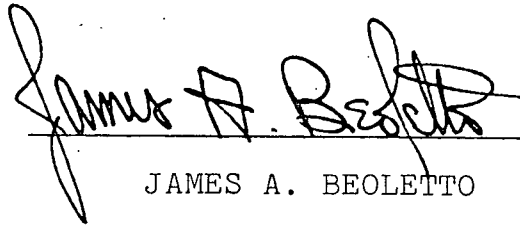
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Licensing Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Certificate of Service
Page Two



A handwritten signature in black ink, appearing to read "James A. Beoletto", is written over a horizontal line. The signature is stylized with a large initial 'J' and a prominent 'B'.

JAMES A. BEOLETTO

RELATED CORRESPONDENCE

PHYLLIS M. GALLAGHER
Attorney at Law
615 Civic Center Drive West
Suite 220
Santa Ana, California
Attorney for Intervenor, GUARD

10/17/78



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)
)
(San Onofre Nuclear Generating)
Station, Units 2 and 3))
)

Docket Nos. 50-361 OL
 50-362 OL
RESPONSES TO FIRST SET
OF INTERROGATORIES

TO NRC STAFF:

GUARD answers the first set of interrogatories and request for the production of documents which were served June 23, 1978 as follows:

GUARD CONTENTION NO. 1

1. The applicants have not complied with 10 CFR Part 50, Appendix E regarding emergency plans since, because of inadequate funding and staffing of the several state and local agencies involved, appropriate and coordinated emergency plans cannot be developed.

1-1. a. Upon what person or persons do you rely to

substantiate your case on contention number 1?

ANSWER: GUARD relies on many persons to substantiate its contentions, among whom are:

1. Sam Chicas, Assistant Superintendent of Capistrano Unified School District, Emergency Planning Director.
 2. Jen Stratton, Capistrano Unified School District Transportation Director.
 3. The City Manager, Police Chief, and Fire Chief of San Clemente.
 4. A representative of the radiological section of the Orange County Health Department.
 5. Dr. Ronald Doctor, State of California Energy Commission, Sacramento, San Onofre Evacuation Hearings.
 6. The author or authors of the "Evacuation Plan for the Area Surrounding the San Onofre Nuclear Generating Station, July, 1975," developed by SCE with cooperation of assistance agencies.
- b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.

ANSWER: The adresses known to GUARD pertinent to a. above are as follows:

1. Sam Chicas and Jen Stratton may be reached at Capistrano Unified School District, Administration Office, 32972 Calle Perfecto, San Juan Capistrano, Ca. 92675.

2. Doctor Ronald Doctor, State of California Energy Commission,
Sacramento, California..

The professional qualifications of the persons listed in a.
above are as yet unknown by GUARD.

- c. Identify which of the persons identified in a. you intend
to call as witnesses on this contention in this proceeding.

Answer: GUARD is not yet certain which of the above will
be called by it in this proceeding.

- d. Indicate which of the persons identified in c. above that
you anticipate will appear voluntarily and which under subpoena.

ANSWER: Not applicable, as the answer to c. is undetermined.

- 1-2.a. Identify the state and/or local agencies involved in
development and implementation of emergency plans, as
contemplated by Appendix E to 10 CFR Part 50, for San Onofre
Units 2 and 3, referred to in Contention no. 1.

ANSWER: The state and/or local agencies involved in development
and implementation of emergency plans are:

1. Capistrano Unified School District
2. State Parks Commission, Emergency Planning
3. City of San Clemente
4. State of California Parks and Recreation Dept.
5. Cal Trans
6. County of Orange
7. State of California Energy Commission

- b. With which of the agencies identified in a. have you
had any communication(s) (oral or written) in regard to
this facility, at any time? Provide the date(s) of any such
communication(s).

ANSWER: GUARD has had communications with each of the above agencies over a period of years. The communications have been mostly by conversation, which GUARD did not keep records concerning.

c. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in b. above, regarding the San Onofre facility.

ANSWER: The following persons have been communicated with concerning emergency planning:

1. Sam Chicas, Emergency Planning Director, Capistrano Unified School District, address in 1-1 b.
2. Jen Stratton, Transportation Director, Capistrano Unified School District, address in 1-1 b.
3. Jack Stowe, Pendleton Coast Director of State Parks, Pendleton Coast Area, State Parks and Beaches, Del Presidente (Calle) , San Clemente, Ca. 92672.
- 4.. Paul Muspratt, State Parks, same address as in 3 above.
5. Lon Spharler, Chief of Planning Division, State of California Parks and Recreation Department, Sacramento, California.
6. Al Wheelock, Cal Trans, 120 S. Spring St., Los Angeles, Ca.
7. Dr. Ronald Doctor, State of California Energy Commission, Sacramento, Calif.

d. Provide a copy of all written communications or summary of all oral communications with each agency identified in b. above.

ANSWER: GUARD has no record of such communications.

1-3. Provide summaries of the views, positions, or proposed testimony on contention no. 1 of all persons named in response to Interrogatory 1-1 that you intend to present during this proceeding.

ANSWER: GUARD does not yet have this information.

1-4. State the specific bases and references upon which the persons named in response to Interrogatory 1-1 rely to substantiate their views regarding contention no. 1.

ANSWER: GUARD does not as yet have this information.

1-5. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

ANSWER: GUARD will rely upon cross-examination of the person or persons who prepared "Evacuation Plan for the Area Surrounding the San Onofre Nuclear Generating Station, July, 1975", prepared by SCE with cooperation of assistance agencies.

1-6. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

ANSWER: GUARD intends to offer the following documents, as well as others as yet not determined:

1. "EP" Emergency Plan, San Onofre Nuclear Generating Station Units 2 and 3 (FSAR).

2. "EPS" Supplement to Emergency Plan, San Onofre Nuclear Generating Station Units 2 and 3 (FSAR).
3. Orange County Emergency Response Plan, San Onofre Nuclear Generating Station, October, 1975, of the Orange County Office of Emergency Services.
4. Unified San Diego County Emergency Service Organization, Nuclear Power Plant Emergency Response Plan of the San Diego County Office of Disaster Preparedness.
5. Emergency Response Plan of the U.S. Marine Corps, Camp Pendleton, January, 1974.

1-7 a. What amount of funding (in dollars) is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3.

ANSWER: GUARD's position is that the answer to this question is of fundamental importance to Applicant's satisfaction of licensing requirements, and as yet has not been developed by the agencies charged with the responsibility for developing appropriate and coordinated emergency plans.

b. What amount of staffing is required to develop and implement appropriate and coordinated emergency plans as contemplated by Appendix E to 10 CFR Part 50?

ANSWER: GUARD gives the same answer as in a. above.

c. What is the basis for your response in a. and b. above?

ANSWER: GUARD has reviewed the "Evacuation Plan" referred to previously in 1-1 a. and 1-5, prepared by Applicant, and on this document, bases its response. The plan

therein outlined does no more than designate responsibility for developing emergency plans, with some inventorying of equipment. It does not take into account the many variables which could and would make the emergency plans far more complicated.

- d. Define the terms "appropriate" and "coordinated" as used in this contention no. 1.

ANSWER: "Appropriate" is that planning necessary to assure safe evacuation of projected populations within stated limits of time, and taking into account conditions of wind, time of night or day, seasonal variations, population ages, and available routes for evacuation.

"Coordinated" means orderly interaction of support agencies so that each agency is responsible for certain parts of the emergency plan and is able and equipped to carry out its task.

- 1-8 Considering your responses to the interrogatories above, specifically state, in both qualitative and quantitative terms, the deficiencies in the emergency plans proposed by applicant in this proceeding, for San Onofre Units 2 and 3.

ANSWER: GUARD is in the process of writing a book on the deficiencies of the emergency plans. GUARD's basic objection to the plans is that they are superficial, mere assignment of areas of responsibility without assessment of the ability of those designated as responsible for carrying out the plan. The plans

appear to GUARD to neglect the possible variations that could surround an accident, thus complicating efforts to evacuate the area, or otherwise foiling the implementation of emergency plans.

GUARD CONTENTION NO. 2

2. As a consequence of increase in freeway use in recent years and the influx of transient and resident individuals into the exclusion area and low population zone, there is no longer assurance that effective arrangements can be made to control traffic or that there is a reasonable probability that protective measures could be taken on behalf of individuals in these areas including, if necessary, evacuation, particularly considering the unique geographic constraints in these areas; thus, applicants do not comply with 10 CFR § 100.3(a) or (b).

2-1. a. Upon what person or persons do you rely to substantiate your case on contention no. 2?

ANSWER: GUARD relies on the following persons:

1. Jack Stowe
2. Paul Muspratt
3. Dave Sikes
4. San Onofre Bluffs Housing Officer, Camp Pendleton.
5. Lon Spharler
6. Al Wheelock

b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.

ANSWER: GUARD does not know the educational and professional qualifications of the above persons. Their addresses are listed elsewhere in these answers, in 1-1 b.,

and in 1-2 c., except for Dave Sikes, Base Natural Resources Officer, Camp Pendleton, Calif.

- c. Identify which of the persons named in a. you intend to call as witnesses on this contention in this proceeding.

ANSWER: GUARD does not yet know the answer to this question.

- d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.

ANSWER: GUARD cannot answer this as yet.

- 2-2 Provide summaries of the views, positions, or proposed testimony on contention No. 2 of all persons named in response to Interrogatory 2-1 that you intend to present during this proceeding.

ANSWER: GUARD cannot answer this, since it has not yet decided which persons it will ask to testify.

- 2-3 State the specific bases and references upon which the persons named in response to Interrogatory 2-1 rely to substantiate their views regarding contention no. 2.

ANSWER: GUARD does not yet have this information.

- 2-4 To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied on in such cross-examination.

ANSWER: GUARD does not know the answer to this question at this time.

2-5 Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

ANSWER: The evacuation planning documents referred to in the answer to 1-6, above, and the following:

1. NRC Staff Brief, Feb. 24, 1975 page 15 Dockets 50-361 and 50-362 re "timely evac."
2. NRC Memorandum and Order of Appeals Board re: SO Dockets, Jan. 22, 1976 re: "acceptable time period".
3. Atomic Licensing Appeal Board Decision of Dec. 24, 1974 (ALAB 248) on appeal by Intervenors of decision of AEC Licensing Board, Oct. 15, 1973 (LBP 73-76) re: "evacuation feasibility" (2a, c4).
4. Supplement to Applicants' Environmental Report, Permit Construction Stage, Appendix A, item 41 re: "population update" (Amendment#1)
5. Supplement to SO Applicants Environmental Report, Construction Permit Stage Vol. 1. Land Use map figures 2.1 and 2.2, and meteorology tables and reports 2.6.

2-6 a. Identify the federal, state and/or local agencies involved in traffic control and management relating to Interstate Highway 5.

ANSWER: The agencies involved are the Orange County Sherriff's Department, San Clemente Police Department, California Highway Patrol, San Onofre State Park Headquarters Staff, Camp Pendleton Marine Corps,

- 2-6 b. Identify the state and/or local agencies or governmental bodies involved in land-use management or development, or in demographic activities in your geographic area of concern.

ANSWER: State of California Parks and Recreation Department, San Clemente City Planning Commission and City Council, San Juan Capistrano City Planning Commission and City Council, Orange County Planning Commission and Board of Supervisors, Camp Pendleton Marine Corps, California Coastal Commission.

- c. With which of the agencies identified in a. and b. above have you had any communication(s)? (oral or written) in regard to this facility at any time? Provide the dates of any such communications.

ANSWER: GUARD has communicated with all of the above over a period of years, but is unable to provide dates of such communications.

- d. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in c. above, regarding the San Onofre facility.

ANSWER: GUARD is unable to identify such individuals at this time.

- e. Provide a copy of all written communications or summary of all oral communications with each agency identified in c. above.

ANSWER: GUARD does not have records of such communications at this time.

2-7. Describe the geographic area of concern for purposes of this contention no. 2.

ANSWER: The geographic area of concern for purposes of Contention no. 2, relating to the feasibility of evacuation in order to protect the public safety, includes the Camp Pendleton fenced, restricted area north of Oceanside, the State Parks Department's developed and undeveloped acreage in both of the low population zones, the costal plain and hill areas of San Clemente, Capistrano Beach and San Juan Capistrano, and areas of the Cleveland National Forest.

2-8 Provide, on a year by year basis and in quantitative terms, traffic statistics for Interstate Highway 5 in the area defined in your response to Interrogatory 2-7 above, for the years 1973 through 1977 (including any such data for 1978 as may be available), which form the basis for the allegation set forth in contention no.2 regarding "increase in freeway use in recent years."

ANSWER: Some statistics are available from Cal Trans, but GUARD does not believe that they accurately reflect the situation as it exists and can be observed. GUARD is still searching for independent traffic counts to substantiate its observations

of increased use, as evidenced by frequent bumper-to-bumper traffic jams. Daily numbers are not as significant an indication of increased use as is the distribution of that traffic. GUARD has not yet discovered the statistics which take into account the congestion which can be observed during peak periods of traffic.

The traffic testimony presented by Applicants' witness Sheppard in the Construction Stage Hearings assumed the free flow of traffic on the Freeway for escaping populations, and made no assessment of Basilone in the event that the Freeway could not provide a ready means of egress from the area.

The Hearing Board repeatedly informed GUARD that the "details" of evacuation would be dealt with at the licensing stage. GUARD takes the position that Applicants bear the burden of proof on this issue, and that they have not borne it.

Applicants have not addressed the variables of time, beach use, and other concerns relating to feasibility of evacuation in the event of an accident. Applicants have not addressed the fact of the new uses to which beach frontage park land has been put, and implications of this use in evacuation planning.

2-9 Indicate, on a year by year basis and in quantitative terms, population growth in the geographic area of concern defined in your response to Interrogatory 2-7 above, for the years 1973 through 1977 (including any such data for 1978 as may be available) For purposes of this interrogatory, your response should include a breakdown of resident and transient populations and specify, in geographic terms, where growth has occurred (in the exclusion area or low population zone) for each population category (resident or transient).

ANSWER: GUARD is in the process of gathering such population information, and will provide it when available.

2-10 Specify (a) the exclusion area and (b) the low population zone, as each is defined in 10 CFR Part 100, which you have used in your responses above.

ANSWER: GUARD considers the exclusion zone to include the site itself, plus the adjacent beach and surf. The low population zone was formerly an area of a four mile radius around the site. GUARD now understands that this area has been contracted in response to its objection that Oceanside not be considered the nearest population center of 25,000 or more.

2-11 Describe all protective measures which you believe should be considered in the context of this contention no. 2.

ANSWER: The protective measures which should be considered include but are not necessarily limited to those measures which would assure either the evacuation or shelter of both resident and transient populations so that such persons will not be exposed to dangerous levels of radiation, taking into account that levels of exposure formerly considered "safe" are now being questioned by researchers.

2-12 a. Describe the "unique geographic constraints" as this phrase is used in this contention no.2.

ANSWER: By "unique geographic constraints" GUARD means the hill and ocean barriers to egress from the area, the meteorological problems which result from the hill-ocean proximity, the pockets of population concentrated in the area, and the effects which the number and location of roadways have on egress from the area.

b. Define, in geographic terms, what is meant by "in these areas" as this phrase is used in this contention no. 2.

ANSWER: The answer to this question is the same as in 2-7.

Dated : October 17, 1978

Phyllis M. Gallagher
Phyllis M. Gallagher

Counsel for GUARD

VERIFICATION

LYN HARRIS HICKS, being first duly sworn, deposes and says:

1. That she is a member of GUARD, of ENVIRONMENTAL COALITION OF ORANGE COUNTY, SOUTHERN CALIFORNIA VOLUNTEER ENVIRONMENTAL ORGANIZATIONS, intervenors in this proceeding (hereafter "intervenors").
2. That she is ADVOCATE for Intervenors in this proceeding.
3. That she is authorized by Intervenors to execute and verify the foregoing "RESPONSE OF GUARD, OF ENVIRONMENTAL COALITION OF ORANGE COUNTY TO INTERROGATORIES OF NUCLEAR REGULATORY COMMISSION STAFF AND REQUEST FOR DOCUMENTS TO GUARD-SET NO.1"
4. That she is informed and believes, and upon such information and belief, affirms that the foregoing RESPONSE OF GUARD, OF ENVIRONMENTAL COALITION OF ORANGE COUNTY TO INTERROGATORIES OF NUCLEAR REGULATORY COMMISSION STAFF AND REQUEST FOR DOCUMENTS TO GUARD-SET NO. 1 is true and correct.

DATED: OCTOBER 17, 1978

Lyn Harris Hicks
Lyn Harris Hicks

Subscribed and sworn to before
me this 17th day of October, 1978.

Lou Ann Mason

Notary Public

In and for the County of Orange,
State of California.

My Commission expires:



PHYLLIS M. GALLAGHER
Attorney at Law
615 Civic Center Drive West
Suite 220
Santa Ana, California 92701

RELATION



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
)	
COMPANY, <u>ET AL</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
)	
Station, Units 2 and 3)	
)	

CERTIFICATE OF SERVICE

I hereby certify that copies of GUARD's RESPONSES TO
FIRST SET OF INTERROGATORIES Served by NRC Staff in the
above entitled proceeding have been served on the following
by deposit in the United States mail, first class this
18th day of October, 1978, at Santa Ana, California:

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P.O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
California Public Utilities Commission
5066 State Building
San Francisco, California 94102

Rollin E. Woodbury, General Counsel
David N. Barry III, Esq.
James A. Beoletto, Esq.
Southern California Edison Company
2244 Walnut Grove Ave.
Rosemead, California 91770

David R. Pigott, Esq.
Samuel B. Casey, Esq.
Chickering & Gregory
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San Francisco, California 94111

Alan R. Watts, Esq.
Rourke & Woodruff
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Suite 1020
Santa Ana, California 92701

Richard J. Wharton, Esq.
4655 Cass Street
San Diego, California 92109

David W. Gilman
Robert G. Lacy
San Diego Gas & Electric Company
P.O. Box 1831
San Diego, California 92112

Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety and Licensing Appeal Panel (5)
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docketing and Service Section (3)
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Phyllis M. Gallagher
Phyllis M. Gallagher

Counsel for GUARD

September 13, 1978

9/13/78

Phyllis M. Gallagher, Esq.
Suite 220
615 Civic Center Drive West
Santa Ana, California 92701

In the Matter of
Southern California Edison Company, et al
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Dear Ms. Gallagher:

In accordance with our discussion on September 5, 1978, enclosed is a copy of the Commission's Rules of Practice, 10 CFR Part 2 (current through June 30, 1978 - the most recent update I have), and the Licensing Board's Memorandum and Order of January 27, 1978.

Sincerely,

Lawrence J. Chandler
Counsel for NRC Staff

Enclosure

cc: (w/o enclosure)

Ivan W. Smith, Esq.
Dr. Cadet H. Hand, Jr.
Mr. Lester Kornblith, Jr.
Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
Rollin E. Woodbury, Esq.
David N. Barry, III, Esq.
Atomic Safety and Licensing
Appeal Panel

James A. Beoletto, Esq.
David R. Pigott, Esq.
Samuel B. Casey, Esq.
Alan R. Watts, Esq.
Richard J. Wharton, Esq.
Mrs. Lyn Harris Hicks
David W. Gilman
Robert G. Lacy
Atomic Safety and Licensing
Board Panel
Docketing and Service Section

OFFICE	OELE					
SURNAME	LChandler/dkw					
DATE	9/18/78					

09/05/78
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

9/5/78

SOUTHERN CALIFORNIA EDISON
COMPANY, ET AL.

)
) Docket Nos. 50-361 OL
) 50-362 OL
)
)
)

(San Onofre Nuclear Generating
Station, Units 2 and 3)

NRC STAFF MOTION TO COMPEL RESPONSES
TO INTERROGATORIES SERVED UPON GUARD

On June 23, 1978, the NRC Staff served upon Intervenor GUARD, its first set of interrogatories and request for production of documents, copy attached, pursuant to 10 CFR §§ 2.740b and 2.741. In accordance with 10 CFR §§ 2.740(b) and 2.710, responses to the Staff's interrogatories were to be filed by July 12, 1978. This date was extended by Memorandum and Order of this Board dated July 31, 1978, until August 18, 1978. To date, the Staff has not received GUARD's responses.

It is fundamental that discovery procedures are appropriately employed to provide parties with a mutual knowledge of the facts in each other's possession, relevant to their respective position on the issues in a proceeding so as to avoid causing the hearing process to be a "game of blind man's buff." See Commonwealth Edison Company (Zion Station, Units 1 and 2), ALAB-196, 7 AEC 457, 460 et seq., (1974) and cases cited therein; and, Northern States Power Company,

et al (Tyrone Energy Park, Unit 1) LBP-77-37, 5 NRC 1298, 1300-1301 (1977).

The Staff considers its interrogatories to be reasonable and relevant to the contentions admitted by the Atomic Safety and Licensing Board by its Memorandum and Order of January 27, 1978, and that they relate to GUARD's claim or defense regarding each such contention. The Staff further believes that responses to its interrogatories are necessary for the complete and proper preparation of its case in this proceeding.

Accordingly, the Staff hereby moves that the Licensing Board enter an order compelling GUARD to respond promptly to each interrogatory served upon it by the Staff on June 23, 1978.

Respectfully,

A handwritten signature in dark ink, appearing to read "Lawrence J. Chandler", is written over the typed name.

Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 5th day of September, 1978

00/25/10

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

Docket Nos. 50-361 OL
50-362 OL

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

NRC STAFF INTERROGATORIES AND
REQUEST FOR DOCUMENTS TO GUARD - SET NO. 1

The NRC Staff hereby requests that the Intervenor, GUARD, pursuant to 10 CFR §§ 2.740b and 2.741, answer separately and fully, in writing under oath or affirmation, the following interrogatories within fourteen (14) days after service hereof and produce or make available for inspection and copying, all documentary material identified in the responses to interrogatories below. To the extent that copies of the documentary material cannot or will not be provided to the NRC Staff, access for inspection and copying should be provided at a mutually agreeable place, time and date. Each response to the interrogatories below shall be under oath or affirmation of the individual(s) who prepared the response and shall identify any other individual(s) who contributed thereto. For all references requested in these interrogatories, identify them by author, title, date of publication and publisher if the reference is published, and if it is not published, identify the document by the author, title, the date it was written, the qualifications of the author relevant to this proceeding, and where a copy of the document may be obtained.

The interrogatories set forth below are to be considered the Intervenor's continuing obligation. Accordingly, if, after the Intervenor has answered these interrogatories, additional information comes to its attention with respect to one or more of the answers, the answers should be amended in a timely manner to provide such additional information.

GUARD CONTENTION NO. 1

1. The applicants have not complied with 10 CFR Part 50, Appendix E regarding emergency plans since, because of inadequate funding and staffing of the several state and local agencies involved, appropriate and coordinated emergency plans cannot be developed.
- 1-1.
 - a. Upon what person or persons do you rely to substantiate your case on contention number 1?
 - b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
 - c. Identify which of the persons identified in a. you intend to call as witnesses on this contention in this proceeding.
 - d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 1-2.
 - a. Identify the state and/or local agencies involved in development and implementation of emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3, referred to in Contention no. 1.
 - b. With which of the agencies identified in a. above have you had any communication(s) (oral or written) in regard to this facility, at any time? Provide the date(s) of any such communication(s).

c. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in b. above, regarding the San Onofre facility.

d. Provide a copy of all written communications or summary of all oral communications with each agency identified in b. above.

1-3. Provide summaries of the views, positions, or proposed testimony on contention no. 1 of all persons named in response to Interrogatory 1-1 that you intend to present during this proceeding.

1-4. State the specific bases and references upon which the persons named in response to Interrogatory 1-1 rely to substantiate their views regarding contention no. 1.

1-5. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

1-6. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

1-7. a. What amount of funding (in dollars) is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3?

b. What amount of staffing is required to develop and implement appropriate and coordinated emergency plans as contemplated by Appendix E to 10 CFR Part 50?

c. What is the basis for your response in a. and b. above?

d. Define the terms "appropriate" and "coordinated" as used in this contention no. 1.

1-8. Considering your responses to the interrogatories above, specifically state, in both qualitative and quantitative terms, the deficiencies in the emergency plans proposed by the applicant in this proceeding, for San Onofre Units 2 and 3.

GUARD CONTENTION NO. 2

2. As a consequence of increase in freeway use in recent years and the influx of transient and resident individuals into the exclusion area and low population zone, there is no longer assurance that effective arrangements can be made to control traffic or that there is a reasonable probability protective measures could be taken on behalf of individuals in these areas including, if necessary, evacuation, particularly considering the unique geographic constraints in these areas; thus, applicants do not comply with 10 CFR § 100.3(a) or (b).
- 2-1.
 - a. Upon what person or persons do you rely to substantiate your case on contention number-2?
 - b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
 - c. Identify which of the persons named in a. you intend to call as witnesses on this contention in this proceeding.
 - d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 2-2. Provide summaries of the views, positions, or proposed testimony on contention no. 2 of all persons named in response to Interrogatory 2-1 that you intend to present during this proceeding.

- 2-3. State the specific bases and references upon which the persons named in response to Interrogatory 2-1 rely to substantiate their views regarding contention no. 2.
- 2-4. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.
- 2-5. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.
- 2-6. a. Identify the federal, state and/or local agencies involved in traffic management and control relating to Interstate Highway 5?
- b. Identify the state and/or local agencies or governmental bodies involved in land-use management or development, or in demographic activities in your geographic area of concern?
- c. With which of the agencies identified in a. and b. above have you had any communication(s) (oral or written) in regard to this facility at any time? Provide the date(s) of any such communication(s).
- d. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in c. above, regarding the San Onofre facility.

- e. Provide a copy of all written communication or summary of all oral communications with each agency identified in c. above.
- 2-7. Describe the geographic area of concern for purposes of this contention no. 2.
- 2-8. Provide, on a year-by-year basis and in quantitative terms, traffic statistics for Interstate Highway 5 in the area defined in your response to Interrogatory 2-7 above, for the years 1973 through 1977 (including any such data for 1978 as may be available), which form the basis for the allegation set forth in contention no. 2 regarding "increase in free-way use in recent years."
- 2-9. Indicate, on a year-by-year basis and in quantitative terms, population growth in the geographic area of concern defined in your response to Interrogatory 2-7 above, for the years 1973 through 1977 (including any such data for 1978 as may be available). For purposes of this interrogatory, your response should include a breakdown of resident and transient populations and specify, in geographic terms, where growth has occurred (in the exclusion area or low population zone) for each population category (resident or transient).
- 2-10. Specify (a) the exclusion area and (b) the low population zone, as each is defined in 10 CFR Part 100, which you have used in your responses to the interrogatories above.

2-11. Describe all protective measures which you believe should be considered in the context of this contention no. 2.

2-12. a. Describe the "unique geographic constraints" as this phrase is used in this contention no. 2.

b. Define, in geographic terms, what is meant by "in these areas" as this phrase is used in this contention no. 2.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Lawrence J. Chandler".

Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 24rd day of June, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF MOTION TO COMPEL RESPONSES TO INTERROGATORIES SERVED UPON GUARD" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 5th day of September, 1978:

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Lawrence J. Chandler
Counsel for NRC Staff

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

8/29/78

SOUTHERN CALIFORNIA
EDISON COMPANY, et al.
(San Onofre Nuclear Generating
Station, Units 2 and 3)

One of Counsel for
San Diego Gas & Electric Company

CERTIFICATE OF SERVICE

I hereby certify that on the 29th day of August, 1978,
a copy of the foregoing DESIGNATION FOR SERVICE on behalf of
San Diego Gas & Electric Company in Nuclear Regulatory Commission
Docket Nos. 50-3610L and 50-3620L was served upon each of the
following by deposit in the United States mail, first-class
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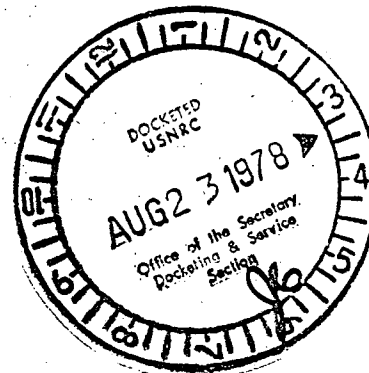
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Representatives of GUARD-
ENVIRONMENTAL COALITION OF
ORANGE COUNTY

RELATED CORRESPONDENCE

8/17/78



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
SOUTHERN CALIFORNIA EDISON)
CO. & SAN DIEGO GAS AND)
ELECTRIC CO.)
(San Onofre Nuclear Generat-)
ing Station, Units 2 and 3))

Docket Nos. 50-361 OL
50-362 OL
RESPONSES TO FIRST SET OF INTERROGATORIES
TO GUARD-ENVIRONMENTAL COALITION OF ORANGE
COUNTY

TO SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS AND ELECTRIC COMPANY:

Pursuant to 10 C.F.R. sec. 2.74b and 2.74l, Intervenor GUARD, et al, in the above entitled action, hereby respond to "FIRST SET OF INTERROGATORIES TO INTERVENOR GUARD" which were served by mail on Intervenor the 28th day of June, 1978.

DEFINITIONS

For purposes of the responses contained herein, the following definitions shall apply:

(a) The term "GUARD" refers to "intervenors", southern California environmentalists of the GUARD organization and of ENVIRONMENTAL COALITION OF ORANGE COUNTY, not an of former GUARD organization name.

(b) The term "these interrogatories" refers to "first set of interrogatories served by mail on Intervenor on June 28, 1978, by Applicants.

(c) The term "Applicants" refers to the proponents of Units 2 and 3 of San Onofre Nuclear Generating Station, Southern California Edison Company and San Diego Gas and Electric Company.

(d) The term "NRC" refers to the United States Nuclear Regulatory Commission, successor of the United States Atomic Energy Commission, hereafter "AEC".

(e) The term "hazard area populations" refers to all persons, transient or resident, of the 100 mile-plus distance estimated in potential damage assessment of nuclear power plant accidents, published by the AEC's Brookhaven Report and Wash 1400.

(f) The term "high-hazard area populations" refers to all persons, transient and resident, of the 10 mile area for which government representatives in California State Energy Commission hearings testified should be considered for evacuation in planning for atomic plant accidents.

(g) The term "vicinity populations" refers to all persons, transient and resident of the 50 mile plant radius identified in the AEC Final Environmental Statement on San Onofre Nuclear Generating Station, as 1980 projected populations in the vicinity of San Onofre.

(h) The term "FSAR" refers to the "Final Safety Analysis Report, San Onofre Nuclear Generating Stations, Units 2 and 3".

(i) The term "EP" refers to the "Emergency Plan- San Onofre Nuclear Generating Station, Units 2 and 3".

(j) The term "EPS" refers to the "supplement to Emergency Plan-San Onofre Nuclear Generating Station, Units 2 and 3".

(k) The term "Edison Plan" refers to "Evacuation Plan for the Area Surrounding the San Onofre Nuclear Generating Station-July, 1975, developed by SCE with cooperation of assistance agencies.

(l) The term "assistance agencies" refers to federal, state, and local governmental agencies with jurisdiction to respond in event of an accident at San Onofre.

(m) The term "San Onofre" refers to San Onofre Nuclear Generating Station.

(n) The term "Orange Plan" refers to Orange County Emergency Response Plan-San Onofre Nuclear Generating Station, October, 1975, of the Orange County Office of Emergency Services (hereafter "Orange OES")

(o) The term "San Diego Plan" refers to the Unified San Diego County Emergency Service Organization-Nuclear Power Plant Emergency Response Plan of the San Diego County Office of Disaster Preparedness (hereafter "San Diego ODP").

(p) The term "Marine Corps Plan" refers to the Emergency Response Plan of the Marine Corps, Camp Pendleton, Ca. Jan. 1974.

(q) The term "State Plan" refers to State of California Nuclear Power Plant Emergency Response Plan, July, 1975, of the Radiological Sections of the State of Cal.

(r) The term "State Parks" refers to California State Department of Parks and Recreation.

(s) The term "expert" refers to a person who by virtue of his knowledge, skill, experience, training or education, has acquired a scientific, technical or specialized knowledge which can assist the NRC Licensing Board to understand the evidence or determine a fact, opinion, or scientific theory relevant to an issue of this proceeding.

(t) The term "population center" (NRC term for population center of 25,000 persons or more, transient or resident) in these responses, San Onofre nuclear plant original low population zone.

(u) The term "original low-population zone" refers to four mile radius of San Onofre Unit 1.

(v) The term "reduced low-population zone" refers to 1.9 mile population zone created by Atomic Safety Appeal Board in response to Intervenor's challenge of the Applicants' claim that Oceanside was nearest population center of 25,000 or more.

RESPONSE TO INTERROGATORY NO. 1

"At the present time, do you contend that Applicants have not complied with 10 CFR, Part 50 Appendix E regarding emergency plans since because of the inadequate funding and staffing of the several state and local agencies involved appropriate and coordinated emergency plans cannot be developed?"

GUARD does not now, and has never, approved the applicant and NRC staff rewording of its contentions as set forth in its petitions to intervene. Inadequate funding and staffing of state and local agencies does not provide the only basis for our concern that appropriate and coordinated emergency plans WILL NOT be developed, and in fact are not feasible. Thus the wording is far too narrow. To be responsive to the applicants' wording, we answer "yes", with understanding that our answer be given the limited application of that context.

RESPONSE TO INTERROGATORY NO. 1 (a) (c)

1. Applicants operated San Onofre Unit 1 more than six years without any public evacuation plan, and applicants operated San Onofre Unit 10 years without a viable public evacuation plan.

2. The evacuation plans developed in 1975, and since, (see Definition Section (i) through (k) and (n) through (q)) are all "response plans", merely elaborating actions which should be taken by available assistance agencies staff and available equipment, on available transportation routes, and using available facilities, without assessment of staff, equipment and facilities NECESSARY for FEASIBLE evacuation planning, and costs prospects and procedures of obtaining them.

3. Assistance agencies responsible for evacuation planning in the original low-population zone and the high-hazard areas, have never been given (be either applicants or governmental agencies) the information they requested of time and distance parameters

which are necessary foundation-beginning of adequate evacuation planning.

4. Unique geographic conditions box in population areas between the ocean and the hills of the Cleveland National Forest, so that the two and only public highways trend the same directions (NW and NNW to ESE, SE and SSE, with resultant population clustered along them. Thus evacuation necessitates road construction, or unusual evacuation equipment, for which there is no funding provision, anywhere.

5. Passage of the Jarvis-Gann Initiative is requiring cuts in staff and equipment replacement of the various assist agencies, and prospects loom great for more severe cutbacks in future years.

6. The various assist agencies consider themselves understaffed for normal operation and with no cushion for emergencies. The effects of such financial limitations, the applicants decline responsibility to evaluate.

7. No evacuation drill has been conducted by the applicants during the entire 10 years of San Onofre Unit I, only two communication drills of "contact communication" which did not even include the transmission of the required information of the Edison Plan, ie: time, date, parties of the call, estimate of duration and amount of activity of the release, wind speed, direction, and estimate of two-hour whole-body and thyroid doses at selected downwind distances. Each phone call to EACH person on the list must be returned, to verify...as a protection against prank calls.

8. Not even a coordinated drill has been performed to establish the functioning of the complex intermeshing of assist agency jurisdictional authorities.

9. No information about plume directions, spread behavior, its speed of movement under varying wind conditions, or lengths of time of hazard potential, has been given to assist agencies of low population zone, high-hazard area or hazard-area...all basic necessities for functional evacuation planning.

10. The applicant has not established coordination of response. The evacuation plans (see response 1 b, 2) do not provide coordinated response. There is only an assumption that the various assist agencies will make decisions in their own domains, in response to changing conditions: of winds, radiation release, fire, storm, traffic congestion, panic, injuries, etc. which will hopefully somehow mesh with one another rather than conflict.

RESPONSE TO INTERROGATORY 1 (b) documents and communication on which contention based

1. GUARD-ENVIRONMENTAL COALITION Petition to intervene (May 19, 1977 and supplement) to NRC re: contentions wording.

2. "EP" Emergency Plan-San Onofre Nuclear Generating Station Units 2 and 3 (FSAR)

3. "EPS" Supplement to Emergency Plan-San Onofre Nuclear Generating Station Units 2 and 3 (FSAR).

4. Orange County Emergency Response Plan-San Onofre Nuclear Generating Station, October, 1975, of the Orange County Office of Emergency Services.

5. Unified San Diego County Emergency Service Organization-Nuclear Power Plant Emergency Response Plan of the San Diego County Office of Disaster Preparedness.
6. Emergency Response Plan of the US Marine Corps. Camp Pendleton, Jan. 1974
7. State of California Nuclear Power Plant Emergency Response Plan of the Radiological Sections of the State of California, July, 1975.
8. Evacuation Plan for the Area Surrounding the San Onofre Nuclear Generating Station, July, 1975, of SCE with cooperation of assist agencies(see also Feb. 1976)
9. Capistrano Unified School District letters to applicants 1970, 1971, 1972, requesting specific time and distance parameters, per testimony of School District officials in AEC construction-stage permit hearings(TR 1206-13) Re: Interog. 1 a,3
10. Map of San Clemente area available through San Clemente chamber of Commerce Re: Interog. 1 a,4 response
11. Maps and descriptive sections of San Onofre vicinity in Final Environmental Statement related to the proposed San Onofre Units 2 and 3, March 1973, AEC, and maps and descriptive sections of Final Safety Analysis of Docket Nos. 50-361, 50-362. Re: Interog. 1 a,4 response
12. AEC FSAR Vol .II pgs. 1-28 Re: Interog. 1 a,5 response
13. Edison Plan, Vol. 1 4-3 and 4-4. Re: Interog. 1 a,6 response
14. State of California Energy Commission Hearings, Testimony, Fall 1976, on Evacuation of the San Onofre Hazard Areas. Re: Interog. 1 a,8 response
15. State of California Coastal Conservation Commission letter to applicants of April 10, 1978, advising that proposed barriers to beach use in the exclusion area would violate conditions of permit, thus necessitating a n amendment application. Re: Interog. 1 a,9 response
16. Permit Stage Hearings of the AEC on application for Units 2 and 3 San Onofre by Wm. V. Sheppard (Tr 909) . Testimony by AEC Lead Reactor Safety Engineer, John Sears under cross-examination by intervenors' attorney Bruce Sharpe. Re: Interog. 1 a,10
17. California State Department of Highways-Caltrans traffic count records Re: Interog. 1 a,10 response
18. Applicants' response to Interrogative 28 of FOE, et al. July 17, 1978 Re: 1 a,11

INTERROGATIVE 1 (d) (e)

Identify each and every person with knowledge of the factual basis or bases for this contention, or on whose writings, opinions, or testimony you base this contention; Identify each and every person whom you expect to call as a witness, expert or otherwise, at the hearing on this contention before the Nuclear Regulatory Commission Licensing Board and as to each potential witness so identified, please prove the following information: (i) State the precise subject matter on which the witness is expected to testify; (ii) State the substance of the facts and opinions to which the witness is expected to testify; (iii) Summarize the factual and theoretical bases as well as any other grounds, for each opinion to which the witness is expected to testify.

A response to satisfy the "each and every" request of this interrogatory is an impossibility; there are literally hundreds of persons "with knowledge of the factual basis or bases for " our contentions. We list below some of those whom we are considering as possible witnesses, noting that we may or may not call them, and may take depositions from several. Also, note (bears on (b) of interrogatory), that GUARD's members and ENVIRONMENTAL COALITION's members do not maintain records of interviews and phone conversations, we cannot document statements by officials bearing on our contentions, but will attempt in the hearing to elicit testimony repetition of pertinent information. The listing below is for both contentions. (1 & 2)

1. Capistrano Unified School District Asst. Supt. Sam Chicas, Emergency Planning Director, on funding and staffing and appropriate evacuation planning
2. Capistrano Unified School District Transportation Director Jen Stratton on bussing logistics. Address: Cap. Unified School District, San Juan Capistrano, Ca.
3. State Parks Pendleton Coast Director Jack Stowe on funding and staffing and timing .
4. State Parks Emergency Planning Official Paul ,Muspratt on coordination and elements of effective evacuation.
Both may be addressed at the area offices : Pendleton Coast Area, State Parks and Beaches, Del Presidente (Calle) San Clemente, Ca. 92672.
5. City of San Clemente (ome of three) City Manager, Police Chief or Fire Chief, not yet determined.
6. County of Orange, probably a representative of the radiological section of the Health Department.
7. Camp Pendleton, Dave Sikes, Base Natural Resources Officer, or Master Sgt. J. Brocato of his office, on roadways, distances, beach use.
8. Camp Pendleton Base Housing Officer re San Onofre Bluffs community and mobile housing.
9. State of California Parks and Recreation Dept. Sacramento, Lon Spharler, Chief of Planning Division.
10. Cal Trans Traffic Dept. Al Wheelock, 120 S. Spring, Los Angeles, Ca. traffic court and Bike Trail
11. State of California Energy Commission, Sacramento, Ca. Dr. Ronald Doctor, on

San Onofre Evacuation Hearings and conclusions.

GUARD and ENVIRONMENTAL COALITION have not proceded into (i), (II) and (iii) yet.

INTERROGATIVE 2

At the present time do you contend that as a consequence of increases in freeway use in recent years and the influx of transient and resident individuals into the exclusion area and low population zone, there is no longer assurance that effective arrangements can be made to control traffic, or that there is a reasonable probability protective measures could be taken on behalf of the individuals in these areas, including, if necessary, evacuation, particularly considering the unique geographic constraints

in these areas; thus, applicants do not comply with 10 CFR, Section 100.3(a) or (b)?"

GUARD has not, and cannot approve the proposed wording of this contention, on several grounds. 1. The insertion of the word "longer" in line three infers previous assurance, which is not true. The wording is incomplete; in the use of terms which are not expressive of our contentions, the intent of the contention is destroyed. 2. We would not question that "protective measures could be taken"; it is the adequacy of the measures that could be taken which we challenge, and whether there is assurance that they "will" be taken, rather than "can". 3. The CFR sections on which our contentions bear are the application compliance with 10 CFR 100.3 (a)-(c) and 100.11 (a) 1-3.

Thus, GUARD's answer to interrogatory 2 is "no" as presently worded, however, assuming the wording will be corrected, we respond to the interrogatory informatively.

INTERROGATORY 2 (a) and (c) facts and events on which contention based

Response^s to interrogatory 1 (a) and (b) bear in many particulars on interrog. 2 and will not be repeated here. Specifically: 1, 2, 3, 4 and 7, 8, 9, 10.

1. Unique wind conditions send prevailing winds from the WSW and NNW, which will carry a spreading plume over major populations from the plant outward, the 50 mile vicinity populations including sections of both Los Angeles and San Diego.

2. Potential density of use of the exclusion area beaches is uncertain due to California Coastal Commission requirement that beaches be open to the public to mean high-tide, and the Commission staff interpretation that the construction permit under which the applicants are operating does not permit the control installations the applicants claim they will build and maintain.

3. Time elements of applicants' removal of various numbers of beach goers and surfers out in the waves, to the exclusion area boundary, have not been established by trial evacuation, so that parks department staff cannot estimate time needed to evacuate them to low-population zone boundary.

4. Since Interstate 5 is the only northerly-southerly trending coastal thoroughfare between the major southern California megalopolises San Diego and Los Angeles, traffic has increased through the years until now it is bumper to bumper, 5-10 mile per hour in the San Onofre area much of the summer and on weekends year around, a factor not considered in applicant witness Sheppard's traffic testimony in the construction stage hearings.

5. Since the reduced low-population zone boundary of 1.9 miles is beyond the Basilone, freeway on-ramp, the applicants bear the burden-of-proof to show that evacuees attempting to escape by driving onto clogged Freeway 5 would not be trapped in a morass of stalled, abandoned, bumper-to-bumper vehicles, northerly of the low population zone boundary and within the low population zone, which burden-of proof has not been met.

6. In the interim since evacuation populations were considered at permit stage,

Trestles Beach has been obtained by the State of California Parks and Recreation Dept.

7. In the interim since permit stage, the Caltrans Bike Trail has been developed and fenced, providing easy access for beach-goers via foot, skateboard and bike, to remote Trestles and southeasterly beaches.

8. In the interim since permit-stage, the Atomic Safety and Licensing Appeal Board ruled that San Clemente qualifies as a population center of 25,000 or more.

9. In the interim, Camp Pendleton beaches have been unexpectedly opened to public use.

INTERROGATORY 2 (b) DOCUMENTS AND COMMUNICATIONS BEARING ON CONTENTION

1. Responses to interrogatory 1 b apply, ie all evacuation planning documents
2. NRC Staff Brief, Feb. 24, 1975, page 15 Dockets 50-361, 50-362 re: "timely evac."
3. NRC Memorandum and Order of Appeals Board re: SO Dockets Jan. 22, 1976 re: "acceptable time period"
4. Atomic Licensing Appeal Board Decision of Dec. 24, 1974 (ALAB 248) on appeal by intervenors of decision of AEC Licensing Board of Oct. 15, 1973 (LBP 73-36) re: "evacuation feasibility" (2 a, c 4)
5. Supplement to Applicants' Environmental Report, Permit Construction Stage Appendix A Item 41 re: "population update" (Amendment #1)
6. Supplement to SO Applicants Envir. Report, Constr. Permit Stage Vol 1. Land Use Map figures 2.1 and 2.2, and meteorology tables and reports 2.6.

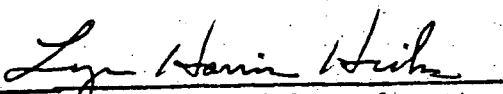
INTERROGATORY ¶ 2 (d) and (e) see response to interrogatory 1

INTERROGATORY 3

At the present time do you contend that the cavities caused by the applicants' dewatering of the SONGS, Units 2 and 3, site will have an unacceptable adverse effect on the capability of structures and equipment for SONGS, Units 2 and 3 to withstand the design basis seismic events? etc.

No, not at this time, but GUARD appreciates the opportunity held in abeyance a contention on the seismic design basis, pending our experts' study of recent events which may have bearing, including the dewatering wells problem, and will renew our request for a contention, when and if a basis is determined, which is not already covered by Intervenor FOE, et al. We will appreciate opportunity to call testimony on the FOE contention, if that would suffice, without a separate contention, but are not ready to determine which course we will take.

DATED: August 17, 1978


by Lyn Harris Hicks, Advocate

Respectfully submitted,
Lee Steelman
Lyn Harris Hicks
Dorothy Boberg
Phyllis Gallagher

Representatives of
Intervenors GUARD-
Environmental Coalition
of Orange County

VERIFICATION

RELATED CORRESPONDENCE

LYN HARRIS HICKS, being first duly sworn, deposes and says:

1. That she is a member of GUARD, of ENVIRONMENTAL COALITION OF ORANGE COUNTY, SOUTHERN CALIFORNIA VOLUNTEER ENVIRONMENTAL ORGANIZATIONS, intervenors in this proceeding (hereafter "intervenors").
2. That she is Advocate for Intervenors in this proceeding.
3. That she is authorized by Intervenors to execute and verify the foregoing "RESPONSE OF GUARD, OF ENVIRONMENTAL COALITION OF ORANGE COUNTY TO INTERROGATORIES OF APPLICANTS SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS & ELECTRIC COMPANY TO GUARD, OF ENVIRONMENTAL COALITION OF ORANGE COUNTY.
4. That she is informed and believes, and upon such information and belief, affirms that the foregoing RESPONSE OF GUARD, OF ENVIRONMENTAL COALITION OF ORANGE COUNTY TO INTERROGATIONS OF SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS & ELECTRIC COMPANY is true and correct.

DATED: AUGUST 17, 1978.

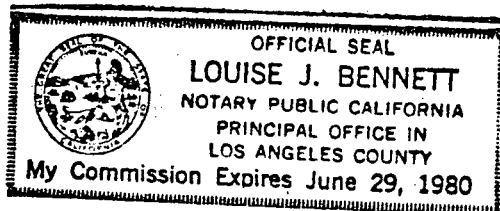
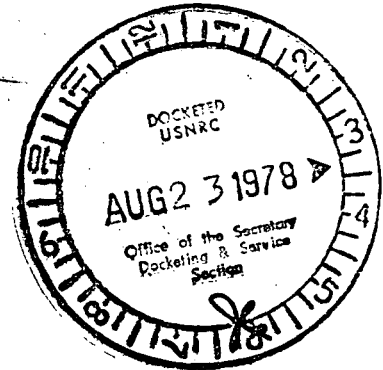
Lyn Harris Hicks
Lyn Harris Hicks

Subscribed and sworn to before
me this 17th day of August, 1978.

Louise J. Bennett
Notary Public

In and for the City and County of
Los Angeles, State of California.

My Commission expires: June 29, 1980



CERTIFICATE OF SERVICE

I hereby certify that on the 18th day of August, 1978, a copy of the foregoing RESPONSE OF GUARD TO APPLICANT, SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS & ELECTRIC COMPANY INTERROGATORIES TO GUARD was served upon each of the following by deposit in the United States mail, first-class postage prepaid, addressed as follows;

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Atomic Safety and Licensing Board Panel
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board Panel
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Southern California Edison Company
P. O. Box 800
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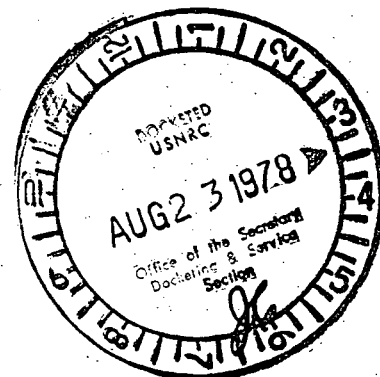
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Santa Ana, California 92701

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San Diego, California 92109

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Atomic Safety and Licensing Board Panel
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Docketing and Service Section
Office of the Secretary
US Nuclear Regulatory Commission
Washington, D. C. 20555

Lee Steelman
Lyn Harris Hicks
Dorothy Boberg
Phyllis Gallagher

By Lyn Harris Hicks
Advocate for Interveners GUARD-
of Environmental Coalition of Orange County

August 3, 1978

Phyllis M. Gallagher, Esq.
Suite 220
615 Civic Center Drive West
Santa Ana, California 92701

In the Matter of Southern California Edison Company, et al.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Dear Ms. Gallagher:

On July 31, 1978 I received your notice of appearance in the captioned proceeding, in original and twenty copies. I presume that this filing was intended to reflect compliance with 10 CFR § 2.708(d) insofar as the number of copies is concerned.

For your future information, the above regulation governs service of documents on the Office of the Secretary of the Commission. Service of any document in a particular proceeding should be made directly by you upon each member of the presiding Atomic Safety and Licensing Board and each party to the proceeding. Enclosed for your use is a copy of an up to date certificate of service reflecting the proper service in the San Onofre Units 2 and 3 operating license proceeding.

As I explained to you when we spoke on July 25, 1978, the Office of the Executive Legal Director of the Nuclear Regulatory Commission represents the Staff (not the Commission). The Staff participates in licensing proceedings as any other party and thus should be served individually. Service on the Staff should be made on the undersigned at: Office of the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555.

However, as a convenience to you in this instance, I will forward your notice of appearance to the Office of the Secretary for its use and will, by copy of

OFFICE ➤						
SURNAME ➤						
DATE ➤						

this letter, send a copy thereof to the Board and other parties. In the future, I expect that you will undertake to accomplish service as required.

Sincerely,

Lawrence J. Chandler
Counsel for NRC Staff

Enclosure: As stated

cc w/enclosure:

Ivan W. Smith, Esq.
Dr. Cadet H. Hand, Jr.
Mr. Lester Kornblith, Jr.
Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
Mrs. Lyn Harris-Hicks
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Atomic Safety and Licensing
Board Panel
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SURNAME ➤	LJChandler: as					
DATE ➤	08/03/78					

SERVICE LIST FOR SAN ONOFRE NUCLEAR
GENERATING STATION, UNITS 2 AND 3 PROCEEDING

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Bodega Bay, California 94923

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Washington, D. C. 20555

Atomic Safety and Licensing
Appeal Panel
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

1 PHYLLIS M. GALLAGHER
2 Attorney at Law
3 615 Civic Center Drive West, Ste. 220
4 Santa Ana, California 92701
5 (714) 835-7001

6 NOTICE OF APPEARANCE IN N.R.C. PROCEEDINGS

7 Pursuant to 10 CFR § 2.713a, I hereby file my
8 notice of appearance.

- 9 1. Name : Phyllis M. Gallagher
- 10 2. Address: 615 Civic Center Drive West
Suite 220
Santa Ana, California 92701
- 11 3. Telephone: (714) 835-7001
- 12 4. Admission to California Bar: December 21, 1977
- 13 5. Appearance on behalf of GUARD
C/O Lynn Harris Hicks
14 3908 Calle Ariana
San Clemente, California 92672

15 Executed on July 26, 1978 at Santa Ana, California

16
17 Phyllis M. Gallagher
18 Phyllis M. Gallagher
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August 2, 1978

8/2/78

Mrs. Lyn Harris Hicks
 GUARD
 3908 Calle Ariana
 San Celmente, California 92672

In the Matter of Southern California Edison Company, et al.
 (San Onofre Nuclear Generating Station, Units 2 and 3)
 Docket Nos. 50-361 OL and 50-362 OL

Dear Mrs. Hicks:

Enclosed are the Staff's answers to the questions submitted by Ms. Boberg by her letter of May 31, 1978. To reiterate the Staff's position regarding these questions as expressed in my June 21, 1978 letter to you, since the questions relate to Unit 1 and, to the extent they bear on Units 2 and 3, do not relate to any matter in controversy in the ongoing licensing proceeding, the Staff would consider all of them to be objectionable as discovery requests. Accordingly, we reserve the right to object to their use in the San Onofre Units 2 and 3 licensing proceeding.

Sincerely,

Lawrence J. Chandler
 Counsel for NRC Staff

Enclosure: As stated

cc w/enclosure:

Ivan W. Smith, Esq.
 Dr. Cadet H. Hand, Jr.
 Mr. Lester Kornblith, Jr.
 Janice E. Kerr, Esq.
 J. Calvin Simpson, Esq.
 Lawrence Q. Garcia, Esq.
 Rollin E. Woodbury, Esq.
 David N. Barry III, Esq.
 James A. Beoletto, Esq.
 David R. Pigott, Esq.
 Phyllis M. Gallagher, Esq.

Samuel B. Casey, Esq.
 Alan R. Watts, Esq.
 Richard J. Wharton, Esq.
 Mr. David W. Gilman
 Mr. Robert G. Lacy
 Atomic Safety and Licensing
 Board Panel
 Atomic Safety and Licensing
 Appeal Panel
 Docketing and Service Section

J.D. 7/21/78
 [Signature] Knighton
 [Signature] - with corrections noted

OFFICE ➤	ELD [Signature]	ELD	ORB-1	AD/OR		
SURNAME ➤	LChandler:am	STreby	ABurger [Signature]	DZiemann		
DATE ➤	07/19/78	07/ /78	07/24/78	07/25/78		

NRC STAFF ANSWERS TO GUARD QUESTIONS RE SAN ONOFRE

1. Has the unit 1 fuel pool been expanded beyond original design?

ANSWER: The Unit 1 spent fuel pool has not been expanded beyond the original design which was approved by the then-AEC.

2. How much fuel is now in the fuel pools on site?

ANSWER: Presently, there are six spent fuel assemblies stored in the Unit 1 spent fuel pool.

3. How is spent fuel on site protected in the event of an earthquake and loss of coolant?

ANSWER: Protection of the spent fuel on site is afforded by the seismic design of the spent fuel storage pool and the spent fuel pool cooling system to mitigate the consequences of an earthquake. These features have been designed to seismic criteria which were found to be acceptable at the time Unit 1 was licensed to operate and provide sufficient margin for continued safe storage of the spent fuel.

With regard to protection of spent fuel against loss of coolant, it should be pointed out that a loss of coolant accident in the reactor cooling system would not affect the safe storage of spent fuel because the spent fuel storage pool and its cooling system are independent from the reactor cooling system. Because of the seismic design, mentioned before, gross loss of water from the pool and loss of function of the pool cooling system is highly unlikely. The pool bottom slabs and the pool side walls are 4 feet thick reinforced concrete. The pool is lined

with a leak-tight stainless steel membrane. Any credible leakage of water from the pool would be detected by accumulation of water in the leak detection monitor sump. Several ample sources of redundant water supplies are available to make up for such leakage.

4. How many fuel loads can be stored on site?

ANSWER: The spent fuel pool provides storage for 1 1/3 cores. (One core in the Unit 1 facility consists of 157 fuel assemblies). At the present time there is available storage for a total of 210 spent fuel assemblies.

5. How long is fuel held in fuel pools?

ANSWER: Spent fuel is placed in the nuclear power plant fuel pool during refueling of the reactor. The spent fuel is held a minimum of 120 days in a nuclear power plant fuel pool. This storage time allows sufficient decay of the spent fuel so that it may be shipped from the plant in a licensed shipping cask. The decayed spent fuel would be within the shielding and cooling capability of the cask.

Prior to 1977, it had been expected that spent fuel would be shipped to a fuel reprocessor. This activity was expected to take place before the next refueling (usually 12 to 24 months) in order to always have room in the pool for a full core discharge should the need arise. Therefore, spent fuel was expected to be held in plant fuel pool for between 4 months and one to two years.

Typically, space was provided in onsite storage pools for about 1-1/3 full nuclear reactor cores. Assuming a 3 to 4 year reactor fuel reload cycle, the onsite storage pools were planned to hold an average of one year's discharge with sufficient remaining capacity to hold a complete core should unloading of all of the fuel from the reactor be necessary or desirable for normal maintenance or because of operation difficulties. Under normal operating conditions, about 5 years' spent fuel discharge could be accommodated before the pools were filled.

In 1977, President Carter indefinitely deferred the reprocessing of spent fuel and committed the federal government to provide facilities for long term, retrievable storage of spent fuel. Until these facilities are available, spent fuel will have to be held in the plant fuel pool or shipped to an independent fuel pool facility offsite. To allow continued operation, a number of licensees have requested license amendments to increase the capacity of their fuel pools. These higher capacity pools will allow storage of spent fuel for up to 20 years. No such request has been made in connection with San Onofre Unit 1.

6. What tests have been done to determine dispersion of radionuclides in the ocean (especially H3)?

ANSWER: To our knowledge, there have not been any tests in the vicinity of San Onofre Nuclear Generating Station, or any other nuclear power plant to determine the dispersion of radionuclides in the ocean. The licensees of the station are required, as part of the license to operate the station, to conduct a radiological environmental monitoring program. The requirements of the program for San Onofre Unit 1 are specified in

detail in Section 3.2 of the Appendix B Technical Specifications for San Onofre Unit 1. One requirement is that samples of ocean water are to be collected from Newport Beach and the Unit 1 discharge outfall during the year to determine the important radioactivity in the water. The results of these analyses are reported in the Unit 1 annual operating report.

The Commission has issued Regulatory Guide 1.113, (Revision 1, April, 1977) "Estimating Aquatic Dispersion of Effluents from Accidental and Routine Releases for the Purpose of Implementing Appendix I," copy attached. This guide presents methods acceptable to the staff for calculating dispersion of the radiological effluent in different water bodies. The guide describes basic features of the calculational models and suggests methods of determining the values of parameters for estimating aquatic dispersion of liquid effluents from nuclear power plants. The material supporting each model in the Guide is referenced in the Guide.

7. Where can these tests results be seen?

ANSWER: The annual environmental monitoring reports for San Onofre Unit 1, Docket No. 50-206, which contain the results of the licensee's radiological monitoring program can be found in the local public document room: Mission Viejo Branch Library, 24851 Chrisanta Drive, Mission Viejo, California. A copy of Regulatory Guide 1.113, Revision 1, April, 1977, is enclosed.

8. What tests had Edison funded to determine the effects of radionuclides on sea life?

ANSWER: There have been no tests funded by Southern California Edison Company to determine the effects of radionuclides on sea life, but the Company is required, as part of the license to operate the San Onofre Nuclear Generating Station, to conduct a radiological environmental monitoring program. The requirements for this program for San Onofre Unit 1 are specified in detail in Section 3.2 of the Appendix B Technical Specification for the nuclear plant. This program should determine the important radionuclides in marine life that could be consumed by man or could be in the food chain to man. The results of the measurements of radionuclide concentration in marine life made by the licensees within the program, are reported in the plant annual operating report.

The Company is required by the program to estimate potential exposures to man. It is not required to determine the effect of radionuclides in the environment on sea life in the vicinity of the station.

9. Where can these test results be seen?

ANSWER: The annual environmental monitoring reports for San Onofre Unit 1, Docket No. 50-206, can be found in the local public document room: Mission Viejo Branch Library, 24851 Chrisanta Drive, Mission Viejo, California.

10. How much tritium was expected to be released in plans for San Onofre 1?

ANSWER: As stated in Section 3.5.1 of the Final Environmental Statement dated October 1973, related to the operation of San Onofre 1, the Staff estimated that an average of about 8000 ci/year of tritium would be released to the environment. This is due to the use of stainless-steel-clad fuel elements in the reactor.

11. How much has actually been released each year of operation?

ANSWER:

Year	Amount of Tritium (Released (Curies))		Source
	Liquid	Gaseous	
1967	ND	ND	A
1968	ND	ND	A
1969	3531	ND	A
1970	4769	ND	A
1971	4569	ND	A
1972	3480	ND	A
1973	4070	269	B
1974	3810	91	B
1975	4000	34	B
1976	3380	47	B
1977	1785	76	C

A = Final Environmental Statement dated October 1973 related to operation of San Onofre Unit 1

B = EPA-520/3-77-012 dated December 1977

C = Semiannual operating reports

ND = No data available

12. In picocuries per liter, what was the range of concentrations released in each year of operation?

ANSWER: The values (picocuries/liter) given below are average values from the division of the total liquid release of tritium by the total liquid dilution volume for 1972 to 1977:

Year	H3 Activity Released Curies	Liquid Dilution Volume (l)	Concentration pCi/l	Source
1977	1785	4.99+11	3580	C
1976	3380	4.55+11	7430	B
1975	4000	4.66+11	8580	B
1974	3810	5.47+11	6960	B
1973	4070	5.11+11	7960	B

13. What is the process of tritium origination and release in San Onofre 1?

ANSWER: Tritium is formed in PWRs such as San Onofre 1 by ternary fission in uranium fuel, and by neutron reactions with boron in the coolant for control of reactivity, lithium in the coolant for pH control and produced in neutron reactions with boron and deuterium naturally present in the coolant. Tritium is released from San Onofre 1 in liquid discharges to the Pacific Ocean through the discharge terminal structure from the liquid radwaste treatment system and possibly the steam generator blowdown. Tritium is also released in gaseous effluents from the stack and possibly the turbine building ventilation.

14. What are the costs calculated for spent fuel storage and disposal of Units I, II, and III?

ANSWER: We do not know the costs of storing spent fuel at San Onofre Unit 1. We have estimated the costs of storing spent fuel Away From the

Reactor (AFR) in the Draft Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel, NUREG-0404, March 1978. Enclosed is Section 6, Economic Analysis of Alternatives, of the Executive Summary of NUREG-0404. This section discusses the costs of different alternatives to store spent fuel away from the reactor per metric ton of uranium. We believe that these costs are representative of costs of storing San Onofre Unit 1 spent fuel by the different alternatives.

Regarding Units 2 and 3, the environmental costs of the Uranium Fuel Cycle, including costs of spent fuel storage and disposal will be discussed in Section 5.5.3 of the draft environmental statement when it is issued. The applicant discusses spent fuel in Section 3.8-2 (copy attached) of the Environmental Report (ER). Specific monetary costs for spent fuel storage and disposal are included in the operating and maintenance costs for the plant discussed in Section 8.1 (copy attached) of the ER.

15. How does Edison calculate the costs of decommissioning Units I, II, and III?

ANSWER: No specific plans regarding decommissioning of San Onofre Units 1, 2, and 3 have been developed by the licensee at this time. This is consistent with current NRC regulations which contemplate detailed consideration of decommissioning near the end of a commercial power reactor's useful life. At the end of the plant's useful lifetime, Southern California Edison (SCE) will prepare a decommissioning plan

that will have to comply with NRC rules and regulations in effect at that time.

There are several methods to decommission San Onofre Unit 1 which we consider possible.

Decommissioning is discussed in Section 5.8 (copy attached) of the applicant's ER. Specific costs for decommissioning have not been enumerated, nor do NRC regulations require that they be. On the other hand, NESP has issued (November 1977) an "Engineering Evaluation of Nuclear Power Reactor Decommissioning Alternatives" which provide reasonable cost numbers. A copy of this report is also attached. Decommissioning of Units 2 and 3 will be discussed in the draft environmental statement when it is issued.

16. What are these costs?

ANSWER: See response to question 15 above and attached ER Section 5.8.

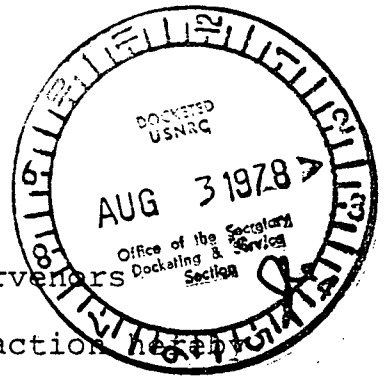
17. What changes have been made in plant design to justify the changes in the exclusion area and low population zone?

ANSWER: The reduction of the exclusion area and low population zone for Unit 1 required the following modifications to maintain calculated post-accident radiation doses below the guideline values in 10 CFR Part 100 of the Commission's regulations: 1) the addition of a reinforced concrete sphere enclosure building (around the Unit 1 containment sphere) for reducing the post-accident direct radiation doses, 2) upgrading of

the original containment spray system and providing an additional hydrazine subsystem for reducing post-accident thyroid doses, and 3) the installation of additional containment isolation valves and testing provisions for fluid systems for improving the control of the containment sphere leak-tightness. These modifications were implemented prior to April 1, 1977.

RELATED CORRESPONDENCE

7/28/78
TO NRC STAFF, NUCLEAR REGULATORY COMMISSION: 50361
362



Pursuant to 10 C.F.R. sec. 2.74b and 2.741, Intervenor Friends of the Earth, et al, in the above entitled action, hereby respond to "NRC STAFF INTERROGATORIES AND REQUEST FOR DOCUMENTS TO FRIENDS OF THE EARTH, ET AL. - SET NO. 1" which were served by mail on Intervenor on June _____, 1978.

INSTRUCTIONS AND DEFINITIONS

For purposes of the responses contained herein, the following definitions and instructions shall apply:

(a) The term "these interrogatories" refers to "NRC STAFF INTERROGATORIES AND REQUEST FOR DOCUMENTS TO FRIENDS OF THE EARTH, ET AL. - SET NO. 1" which were served by mail on Intervenor on June _____, 1978.

(b) The term "NRC" refers to the United States Nuclear Regulatory Commission.

(c) The term "FOE et al." refers jointly to intervenors Friends of the Earth, Mr. and Mrs. August Carsetns, Mr and Mrs. Lloyd VonHaden, and Mrs. Donis Davey.

(d) The term "Applicants" refers jointly to the co-owners of San Onofre Nuclear Generating Station, Units 2 and 3, Southern California Edison Company and the San Diego Gas & Electric Company.

(e) The term "SONGS 2&3" refers to the San Onofre Nuclear Generating Station, Units 2 & 3.

(f) The term "FSAR" refers to the "Final Safety Analysis Report, San Onofre Nuclear Generating Stations, Units 2 & 3."

(g) The term "EP" refers to the "Emergency Plan - San Onofre Nuclear Generating Station, Units 2 & 3"; the term "EPS" refers to

the "Supplement to Emergency Plan - San Onofre Nuclear Generating Station, Units 2 & 3.

(h) The term "San Diego ODP" refers to the "Unified San Diego County Office of Disaster Preparedness", formerly known as "United San Diego County Office of Emergency Services"; the term USMC refers to "United States Marine Corps, Camp Pendleton"; the term "State OES" refers to the "Radiological Section of the State Office of Emergency Services"; the term "State Parks" refers to the "California State Department of Parks and Recreation".

(i) The term "off-site assistance agencies" refers generally to all federal, state, and local government agencies with jurisdiction to respond in any manner in the event of a radiological or other emergency at SONGS 2 & 3.

(j) In all instances Intervenor in response to these interrogatories has provided such relevant, unprivileged, nonconfidential information which is responsive to each of these interrogatories which intervenors are informed and believe to be available from the Public Documents Room of the Mission Viejo Public Library or is available from Intervenor files.

FOE CONTENTION NO. 1

The seismic design basis for SONGS 2 & 3 is inadequate to protect the public health and safety and does not comply with 10 CFR Part 100, Appendix A, in that the earthquake which could cause the maximum vibratory ground motion has not been assigned as the safe shutdown earthquake.

1-1. (a) Upon what person or persons do you rely to substantiate your case on contention no. 1?

(b) Provide the addresses and educational and professional

qualifications of any persons named in your response to
(a) above.

Dr. Karen McNally, research fellow, Caltech seismological
laboratory.

Lucile Jones, Massachusetts Institute of Technology.

Prof. Hiroo Kanamori, geophysicist, Caltech.

Dr. Mizuko Ishida, research fellow, Caltech.

Dr. James Brune, Associate Director of the University of
California Institute of Geophysics and Planetary Physics.

Dr. Clarence R. Allen, California Institute of Technology.

Robert Strand, Sr. Staff Geologist, California Energy
Commission.

Katherine Pering, Ph.D., geochemist, USGS, Menlo Park, Ca.

Thomas Collins, 5 years graduate work in geologic hazards
at UCLA: geologist with U.S. Forest Service.

Rene Engle, Ph.D. in geology at Caltech; Ph.D. in
chemical engineering at the University of Paris.

Adam Honea, Ph.D. in geophysics and structural geology,
Stanford University; member of Geology Department at
California State University at Humboldt.

Pierre St. Amand, Ph.D. in geophysics and geology at
Caltech; B.S. in physics and electrical engineering
from University of Alaska; currently with U.S. Naval
Weapons Center at China Lake.

Dr. George W. Moore, Chief Geologist of the USGS, San Diego.

Jerry Pinckney, believed to be a chief engineering
geologist in San Diego.

Dr. Robert B. McEuen, professor of geophysics at San Diego
State University.

Dr. Michael P. Kennedy, research geologist for the State Division of Mines and Geology, and for Scripps Institution of Oceanography.

Sean Siang Tan, L.A. geologist.

Dr. Rodger Chapman, state geologist, Sacramento.

Gordon W. Chase, state geologist, Sacramento.

Dr. Eli Silver, Chairman of the University of California, Santa Cruz, Geology Department.

Dr. Kenneth Lajoie, USGS, Menlo Park, California.

Dr. Clarence Hall, Chairman, UCLA Geology Department.

Ruth Anderson, Former USGS geologist and member of California Coastal Commission in 1976.

Richard S. Simons, seismologist, Institute of Geophysics and Planetary Physics, La Jolla, California.

George W. Housner, professor of earthquake engineering, Caltech.

Clarence Allen, professor of seismology and geophysics, Caltech.

Dr. Gilbert Hegemier, earthquake engineer, UCSD.

Alfonso Reyes, graduate student, UCSD Institute of Geophysics and Planetary Physics.

Dr. Henry W. Kendall, MIT, nuclear physicist.

FOE et al. intends to rely, in addition to those individuals listed above, on those persons identified with their respective studies in FOE et al's response to interrogatory No. 1-6. FOE et al. has provided all the information presently in its possession with respect to the addresses, educational, and professional qualifications for each of those persons identified in its response to interrogatories

Nos. 1-1(a) and 1-6.

- 1-1 (c) Identify which of the above persons you intend to call as witnesses on this contention in this proceeding.
- (d) Identify which of those persons identified in (c) above you anticipate will appear voluntarily and which under subpoena.

At the present time, FOE et al. is in the process of determining which of the above-identified persons it intends to call as witnesses on this contention, and which of these said persons will appear voluntarily and which under subpoena.

- 1-2 Provide summaries of the views, positions or proposed testimony on contention No 1 of all persons named in response to Interrogatory 1-1, that you intend to present during this proceeding.

Since FOE et al. has not yet determined which of those persons named in response to Interrogatory 1-1 it intends to present during this proceeding, FOE et al. is unable at this time to provide summaries of the views, positions or proposed testimony on contention No. 1 of said persons.

- 1-3 What do you recommend as the proper seismic design basis for vibratory ground motion at the site?

FOE et al. recommends .75g as the proper seismic design basis for vibratory ground motion at the site.

- 1-4 (a) Identify the relevant geological and/or seismological data, including earthquake (or earthquakes), which

contention No. 1 alleges has (or have) not been considered by the applicants and/or Staff in establishing the maximum vibratory ground motion?

- (b) Describe, in both qualitative and quantitative terms, each item identified in your response to (a) above.
1. A fault located in Trabuco Canyon, approximately 14 miles northwest of the SONGS site. The fault lies in a NE-SW direction.
 2. Two earthquakes occurring on January 3, 1975, magnitudes 3.3 and 3.8 respectively, in the vicinity of the above described fault.
 3. Five seismic events occurring between June 29 and July 1, 1977, in the vicinity of the above described fault.
 4. A series of small faults located 6 1/2 miles SE of the SONGS site. These faults lie in a N-S direction. The magnitudes of above-described seismic events are unknown to FOE et al. at this time.
 5. A fault located 1 1/4 miles east of the SONGS site. The fault lies in a N-NW direction.
 6. Implications of the fault discovery 2.5 miles west of the Diablo Canyon site (Hosgri Fault) subsequent to construction commencement of the Diablo Canyon plants, as such post-construction discovery relates to the potential for similar discoveries at or near the SONGS site, resulting in the possibility of an earthquake occurrence with a greater magnitude than that for which the SONGS are designed.

- 1-4 (c) Describe, in both qualitative and quantitative terms, how

the matters described in your responses to (a) and (b) above effect the seismic design basis for San Onofre Units 2 & 3.

The matters described in (a) and (b) above affect the seismic design basis for SONGS 2 & 3 in the following manner:

1. These incidents are relevant new information and therefore neither all activity nor all faults having the potential for affecting the SONGS have been considered in the design basis of the plants, as required by 10 CFR part 100, Appendix A.
2. These incidents render invalid all previous reviews, reports and safety studies which stated that there were no capable faults, as defined in 10 CFR, part 100, Appendix A. III(g), within the vicinity of SONGS.
3. These incidents demonstrate that movement occurred at or near the ground surface at least once within the past 35,000 years, rendering the fault capable and the design basis invalid.
4. These incidents demonstrate that additional faults may exist near the SONGS site which could result in an earthquake and consequent vibratory motion exceeding that for which SONGS have been designed.

1-5

State all bases, calculations, and references used (for example, trench logs, maps, well data, published works, etc.) that you intend to use during this proceeding to support the positions stated in response to Interrogatories 1-2, 1-3 and 1-4. (Portion omitted)

"Memorandum to the Commissioners, U.S. Nuclear Regulatory Commission, Recommendation Relating to the Licensing of Commercial Nuclear Power Plants in the USA", by Keith Miller, May 6, 1976.

Wagner, H. C. and Junger, A., Geology of the San Pedro Basin and Shelf Offshore, Southern California (1975).

Vedder, J.G. et al., Preliminary Report on the Geology of the Continental Borderlands of Southern California (1974).

Reitman, Jan D. and Brogan, George E., Geotechnical Evaluation of Potential Island and Offshore California LNG Import Terminal Sites (June 9, 1978) c/o Woodward-Clyde Consultants, 4000 W. Chapman Avenue, Post Office Box 1149, Orange, California 92668.

Welday, E. E. and Williams, J.W., Offshore Surficial Geology of California (1975).

Ziony, Joseph Il, Preliminary Map Showing Recency of Faulting in Coastal Southern California (1974).

Junger, A. and Wagner, H.C., Geology of the Santa Monica and San Pedro Basins, California Continental Borderland (1977).

Scott, John D., Geologic Investigation of Bulldozer Trench at Proposed Viejo Substation Site (Nov. 1, 1975) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, Ca.

Scott, John D., Geologic Investigation of the Mission Viejo (F. B. Leighton) Bulldozer Excavation (Nov. 14, 1975) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, Ca.

Scott, John D., Geomorphic Analysis of Terraces in San Juan & Bell Canyons, Orange County, California (Sept. 15, 1975) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, Ca.

Scott, John D., Geologic and Tectonic Characteristics of the Cristianitos Fault (Draft Report of June, 1975) c/o Fugro Inc., 3777 Long Beach Blvd., Long Beach, Ca.

Scott, John D., Final Report on Geologic Features at the San Onofre Nuclear Generating Station, Units 2 & 3 (Aug. 1975) c/o Fugro, Inc., 3777 Long Beach Blvd. Long Beach, Ca.

West, J.C., Generalized Sub-surface Geological and Geophysical Study, Capistrano Area. (Nov. 1975) c/o 515 West Commonwealth, Fullerton, Ca.

Biehler, Shawn, Seismological Investigation of the San Juan Capistrano Area, Orange County (Nov. 1975) c/o 171 East Blaine St., Riverside, Ca.

Scott, John D., Report on Geologic Investigation Trail Six and Horno Canyon, Landslides Southeast of San Onofre Nuclear Generating Station (Oct. 15, 1977) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, Ca.

Scott, John D., Geologic Investigation of Offsets in Target Canyon, Camp Pendleton, Ca. (Oct. 15, 1977) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, Ca.

Scott, John D., Supplemental Report of Geologic Investigations, Trail Six Landslide (Nov. 28, 1977) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, Ca.

Scott, John D., Geologic Investigation of Fault E, Southeast of the San Onofre Nuclear Generating Station (May 12, 1978) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach Ca.

Ehlig, P.E., Geologic Report on the Area Adjacent to the San Onofre Nuclear Generating Station, Northwestern San Diego County, Ca. (Sept. 30, 1977) c/o 1560 Via Del Rey,

South Pasadena, Ca.

Shlemon, R.J., Geomorphic Analysis of Fault E, Camp Pendleton, California (Setp. 1977) c/o P.O.Box 3066 Newport Beach, Ca.

Pickering, Lowe and Garrick, Inc., Nuclear Power Plant Siting, Camp Pendleton Marine Corps Base (April, 1977).

Hunt, G.S. and Hawkins, H.G., Geology of the San Onofre Area and Portion of the Cristianitos Fault (1975) c/o SCE.

Morton, P.K., Geology and Engineering Geologic Aspects of the South Half of the Canada Gobernadora Quadrangle, Orange County, California (1974).

Barrows, Allen G., A Review of the Geology and Earthquake History of the Newport-Inglewood Structure Zone Southern California (1974).

Crowell, J.C., San Andreas Fault in Southern California. (1975) c/o University of California, Santa Barbara.

Miller, R.V. and Tan, S.S., Geology and Engineering Geologic Aspects of the South Half of the Tustin Quadrangle, Orange County, Ca. (1976).

Tan, S.S. and Edgington, W.J., Geology and Engineering Aspects of the Laguna Beach Quadrangle, Orange County, California (1976).

Kennedy, M.P. Recency and Character of Faulting Along the Elsinor Fault Zone in Southern Riverside County, Ca. (1977).

Kennedy, M.P. and Peterson, G.L., Geology of the San Diego Metropolitan Area, California (1975).

Grannell, R.B., and Lang, H.R., A Detailed Gravity Survey of the Cristianitos Fault System, Southern Orange County, California (April, 1975).

FOE Contention No. 2

Whether the cavities caused by the Applicants' temporary dewatering of SONGS 2 & 3 site will have an unacceptable adverse effect on the capability of structures and equipment of the SONGS 2 & 3 to withstand the design basis seismic events.

- 2-1 (a) Upon what person or persons do you rely to substantiate your case on contention No. 2?
- (b) Provide the addresses and educational and professional qualifications of any persons named in your response to (a) above.

J. A. Barneich, Associate

Robert L. McNeill, Project Consultant

Woodward-Clyde Consultants

4000 W. Chapman Avenue

Orange, California 92668

Lucien G. Hersh, Assistant Project Engineer

Bechtel Power Corporation

P. O. Box 60860, Terminal Annex

Los Angeles, California 90060

FOE et al. has provided all the information presently in its possession with respect to the addresses, educational and professional qualifications for each of those persons identified in its response to this interrogatory. The report on the impact of the cavities is not complete.

- 2-1 (c) Identify which of the above persons identified in (a) you intend to call as witnesses on this contention in this proceeding.

- (d) Indicate which of the persons identified in (c) above that you anticipate will appear voluntarily and which under subpoena.

At the present time, FOE et al. has not determined whether it will call any of the above-identified persons as witnesses on this contention, and if so, whether such persons will appear voluntarily or under subpoena. It is anticipated that the above named individuals will at least be questioned under cross-examination.

- 2-2 Provide summaries of the views, positions, or proposed testimony on contention No. 2 of all persons named in response to Interrogatory 2-1, that you intend to present during this proceeding.

Since FOE et al. has not determined whether it will call any of the above-identified persons during this proceeding, FOE et al. is unable at this time to provide summaries of the views, positions, or proposed testimony on contention No. 2 of said persons.

- 2-3 Describe the cavities caused by dewatering of the site giving dimensions and locations including proximity to specific, identified structures.

FOE et al. is informed and believes that the information requested in Interrogatory 2-3 may be found in reports formally transmitted to the NRC by letters from the Applicants dated December 23, 1977 and March 10, 1976, respectively. Further, FOE et al. is informed and believes

that a preliminary analysis covering safety implications of said cavities was presented in an interim report submitted to R. H. Engleken (NRC Region V) by letter dated August 22, 1977, on behalf of Applicants.

2-4

Identify specific structures, systems and components important to safety whose capability to withstand the design basis seismic event may be adversely and unacceptably affected considering the seismic and design bases that you postulate in response to Interrogatories 1-3 and 1-4 due to the existence of the cavities. In each case set forth the nature, extent and the type(s) of modifications that you recommend.

The structures, systems and components important to safety whose capability to withstand the design basis seismic event and which may be adversely and unacceptably affected considering the design basis postulated in response to Interrogatories 1-3 and 1-4 due to the existence of the cavities are:

- (a) Those items whose failure would result in an unrestricted release of radioactive products.
- (b) Those items needed for safety injection or recovery from a loss of coolant accident.
- (c) Those items needed to insure the safe and orderly shutdown of the unit.

The following components, systems, and structures are among those outlined in (a), (b), and (c) above. This list is not intended to be inclusive.

Core support structures including both welded and bolted assemblies.

Reinforced concrete reactor support structure including the reactor vessel.

Vital piping systems.

Steel containment vessel and foundation.

Framed steel structures.

Concrete structures above ground.

All plant structures, systems and components important to safety should be reinforced or replaced with items sufficient to withstand vibratory ground motion of .75g taking into consideration existence of the cavities and the maximum credible design basis seismic event as postulated in response to Interrogatories 1-3 and 1-4.

2-5

State the bases, calculations and references used for supporting the positions specified in response to Interrogatory 2-4 as to the following:

- (a) Why each structure, system and component specified is important to plant safety.
- (b) Why each structure, system and component specified would be adversely and unacceptably affected.

With respect to 2-5 (a), FOE et al. is informed and believes that the information requested in said interrogatory may be found in any primer on seismic design criteria for nuclear power plants. FOE et al. relies on standard, generally

accepted seismic design base calculations and references to support its positions specified in response to Interrogatory 2-4. (See, for example, G.S.C. Wang, Analysis of Nuclear Reactor Equipment Response to Earthquake Forces, Ph.D. Dissertation, UCLA, 1970). In the establishment of the seismic design criteria, a log-log plot of the acceleration response spectra normalized to a maximum ground acceleration of 0.75g for various percentages of critical damping, should be utilized in all calculations for those structures, systems and components important to plant safety.

With respect to 2-5 (b), FOE et al. is informed and believes that since the objective of the seismic design of a nuclear power plant is to verify that the most adverse conditions of stress and deflection resulting from the combined influences of normal and earthquake loads will not impair safe operation or orderly shutdown of the plant, unless each structure, system and component important to plant safety is designed to withstand the maximum credible earthquake taking into consideration the possible instability resulting from dewatering cavities such as those found at the SONGS site, the afore-mentioned structures, systems and components would be necessarily adversely and unacceptably affected should such a maximum credible event occur.

Additionally, FOE et al. is informed and believes that engineering studies of the effects of the dewatering well cavities on the structural response of SONGS 2 & 3 seismic Category I Structures are currently being performed. FOE et al. interprets Category I Structures to be those

structures, systems and components important to plant safety. Until such studies are completed and made available, FOE et al. is unable to more responsively answer this interrogatory.

2-6

To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

During cross-examination, FOE et al. will rely on any material entered into evidence of direct testimony and may enter as exhibits any report, analysis, or study prepared by, or on behalf of, Applicants, the NRC, or any consultant, agency or institution with respect to any fault, earthquake, cavity, or other seismic event occurring subsequent to the establishment of the existing seismic design basis for SONGS 2 & 3 and heretofore or hereafter identified within these responses. Such exhibit may include but will not be limited to the following:

- (a). Those engineering studies which FOE et al. is informed and believes are currently being performed on behalf of Applicants with respect to the dewatering well cavities.
- (b) Those preliminary evaluations on the dewatering well cavities identified more completely in response to Interrogatory 2-3.
- (c) Those materials pertaining to the SONGS 2 & 3 dewatering well cavities which FOE et al. is informed and believes have been transmitted to Applicants by

Bechtel Power Corporation or Woodward-Clyde Consultants or which have been prepared by Applicants. Said materials are described in :Attachment A" of Applicants' answers to Intervenor's Interrogatories to Southern California Edison Company which attachment is, by this reference, incorporated herein.

- (d) Those materials which pertain to any geologic studies that have been made of the land area within a 100 mile arc of SONGS 2 & 3 and which materials FOE et al. is informed and believes are presently in the possession of Applicants. Said materials are described in "Attachment B" of Applicants' answers to Intervenor's Interrogatories to Southern California Edison Company which attachment is, by this reference, incorporated herein.

2-7 Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

Material identified in response to Interrogatory 1-6.

Material identified in response to Interrogatory 2-6 and which is not offered as exhibits by any other party.

N.R.C. Release #79-91 and NUREG 0438, which pertain to seismic research programs.

FOE CONTENTION NO. 3

The Applicants have not complied with 10 CFR Part 50, Appendix E regarding emergency plans since because of the jurisdictional diversity of the several state and local agencies involved and their inadequate fundings and staffing, appropriate and coordin-

ated emergency plans cannot be developed. An operating license should not be granted for SONGS 2 & 3 because the various emergency response plans are so complex, overlapping, and difficult to implement that in the event of a nuclear accident the safety of persons in the surrounding areas will be imperiled.

- 3-1 (a) Upon what person or persons do you rely to substantiate your case on contention number 3?

Mr. Robert Lacy, Deputy Director, San Diego ODP.

Mr. Donald L. Hamilton, Director, San Diego ODP.

Mr. Paul Muspratt, District Safety and Enforcement Specialist, State Parks.

Mr. Jack Kearns, State of California, OES.

Mr. Robert Crommelin

Robert Crommelin and Associates

17017 Ventura Blvd.

Encino, California 91316

- (b) Provide the addresses and educational and professional qualification of any persons named in your response to (a) above.

FOE et al. has provided all the information presently in its possession with respect to the addresses, educational and professional qualifications for each of those persons identified in its response to Interrogatory No. 3-1 (a) above.

- (c) Identify which of the persons identified in (a) you intend

to call as witnesses on this contention in this proceeding.

- (d) Indicate which of the persons identified in (c) above that you anticipate will appear voluntarily and which under subpoena.

At the present time, FOE et al. has not determined which of the above-identified persons it intends to call as witnesses on this contention, and has no knowledge which such persons will appear voluntarily and which under subpoena.

- 3-2 (a) Identify the state and/or local agencies involved in development and implementation of emergency plans, as contemplated by Appendix E, 10 CFR Part 50, for San Onofre Units 2 & 3, referred to in Contention No. 3.

State:

Parks and Recreation.

Office of Emergency Services.

California Highway Patrol.

Department of Transportation (Caltrans).

State Military.

Local:

Orange County OES.

San Diego County OES.

Sheriff's Department.

Health Department.

Fire Department.

City of Oceanside.

City of San Clemente.

- (b) With which of the agencies identified in (a) above have you had any communication (oral or written) in regard to this facility at any time? Provide the dates of any such communications.

FOE et al. contacted Mr. Don Hamilton at San Diego ODP on 6-29-77. Subject: extent of emergency response exercises conducted to date; coverage of County emergency response plan.

- (c) Identify (providing name, title or position, and address) each individual communicated with at each agency identified in (b) above, regarding the San Onofre facility.

Refer to response to Interrogatory 3-2 (b) above.

- (d) Provide a copy of all written communications or summary of all oral communications with each agency identified in (b) above.

Refer to response to Interrogatory 3-2 (b) above.

- 3-3 Provide summaries of the views, positions, or proposed testimony on contention No. 3 of all persons named in response to Interrogatory 3-1 that you intend to present during this proceeding.

Refer to transcript of Hearings on Emergency Evacuation Plans Associated With Nuclear Powered Electric Generating Facilities held before the State Energy Resources Conservation and Development Commission, Docket No. 76-SIT - 1, at San Diego, On October 7, 1976.

- 3-4 State the specific basis and references upon which the persons named in response to Interrogatory 3-1 rely to

substantiate their views regarding contention No. 3.

Refer to afore-mentioned transcript and the various response plans prepared by those agencies identified in Interrogatory No. 3-2 (a).

3-5

To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

Any material entered as exhibits on direct testimony.

The EP and EPS.

Transcript of Hearings identified in response to Interrogatory No. 3-3.

Material identified in response 3-6, below.

3-6

Identify all documentary or other material which you intend to offer as exhibits to this contention in this proceeding.

Transcript of Hearings (Identified in 3-3 above) held on August 23, 1976 and October 7, 1976.

The EP and EPS.

L.A. Times article dated 3-11-74 "Clear-Cut Accident Plan Lacking for San Onofre A-Plant".

Federal Response Plan For Peacetime Nuclear Emergencies, dated May 3, 1976.

Report to the Congress by the GAO dated 3-18-76 and titled: "Stronger Federal Assistance To States Needed For Radiation Emergency Response Planning".

NUREG 75/111, Supplement 1.

Statement by Lynn Hicks entitled: "San Onofre Evacuation Report" dated August 1, 1976.

Statement of Dr. William D. Rowe, Deputy Assistant Administrator for Radiation Programs, Environmental Protection Agency, Before the Subcommittee on Energy and the Environment, Committee on Interior and Insular Affairs, House of Representatives, June 11, 1976.

- 3-7 (a) What amount of funding (in dollars) is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 & 3?

FOE et al. has no knowledge of what amount of funding is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 & 3. FOE et al. objects to this interrogatory insofar as it requests information beyond the bounds of the emergency planning contentions currently at issue in this proceeding for discovery purposes, and insofar as it requests information of a speculative nature.

- (b) What amount of staffing is required to develop and implement appropriate and coordinated emergency plans as contemplated by Appendix E to 10 CFR Part 50?

FOE et al, has no knowledge of what amount of staffing is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50. FOE et al. objects to this interrogatory insofar as it requests information of a purely speculative nature and which is beyond the bounds of the emergency planning contentions currently at issue in this proceeding for discovery purposes.

- (c) What is the basis for your response in (a) and (b) above?

Not applicable.

- (d) Define the terms "appropriate" and "coordinated" as used in this contention No. 3.

"appropriate" - Suitable or proper; practical to effectively implement.

"coordinated" - To arrange in proper relative position; responsibly directed by a lead agency to assure smooth functioning, minimal overlap of response activities, and willing subordination of all assist agencies to directives of lead agency.

- (e) Define the terms "complex", "overlapping", "difficult to implement" and "surrounding areas" as used in this contention No. 3 taking into consideration your responses to the above interrogatories.

"complex" - Consisting of interconnected parts; intricate or complicated; involving various agencies with differing concepts of authority and responsibility in event of emergency.

"overlapping" - To extend over and cover part of; to coincide

partly; areas of responsibility in event of emergency are not clearly delineated resulting in a particular agency performing response activities which extend into another agency's jurisdiction under the emergency plan.

"difficult to implement" - Hard to carry into effect; not easy to achieve, comprehend, manage or satisfy; plan is hard to comprehend in terms of which agency does what in an emergency; plan is not easy to carry into effect.

"surrounding areas" - Communities within and without the low population zone for a 25 mile radius of SONGS, including - boaters and persons in the ocean.

3-8

Considering your responses to the interrogatories above, specifically state, in both qualitative and quantitative terms, the deficiencies in the emergency plans proposed by the applicants in this proceeding, for San Onofre Units 2 & 3.

10 CFR Part 50, Appendix E requires that: "...the plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property." The emergency plans proposed by applicants do not meet this requirement in that:

- (a) San Diego ODP does not have an adequate staff to handle an emergency situation at San Onofre.
- (b) Facilities for monitoring and treating accident victims at San Diego County hospitals are inadequate.
- (c) Facilities and manpower are insufficient to conduct on-site radiologic monitoring of beach-and-park users'

contamination.

- (d) The narrow roads in the parks north and south of the plants will become quickly congested in the event of an evacuation.
- (e) As Interstate 5 is the only major highway running near the plants, it too will become intolerably congested in the event of evacuation.
- (f) Evacuation of the cities with 25 miles south of the plants will be impossible.
- (g) The California Department of Parks and Recreation is not sufficiently staffed to handle an emergency situation.
- (h) Confusion exists between the State Department of Parks and Recreation and SCE as to which organization has the responsibility for initiating an evacuation.
- (i) The San Diego County Sheriff and the San Diego County OES have not coordinated their evacuation plans.
- (j) The California Department of Parks and Recreation considers its evacuation responsibilities to be at least partially independent from other participating agencies, thereby frustrating attempts at coordinating evacuation procedures.
- (k) The State Department of Parks and Recreation has no buses at its disposal which could aid in the evacuation of large numbers of beach and park users, thereby leaving evacuation to the use of foot and the individual automobile.
- (l) The Orange County OES did not participate in the

hearings, thus hampering efforts at coordinating evacuation procedures.

- (m) The San Diego County OES has not conducted a fully coordinated exercise to test its evacuation procedures as is required by the June, 1975 plan.
- (n) No assurances exist that evacuation of the low population zone can be effected in the event of an emergency.
- (o) Insufficient drill exercises have been conducted to test the effectiveness of the emergency response plans.
- (p) The drill exercise conducted on June 13, 1978 by Applicants was incomplete and inadequate since no evacuation of any kind was attempted.
- (q) The passage of Proposition 13 renders invalid all local and state plans in that sufficient funding will be unavailable to effectively implement adequate response measures.
- (r) Training programs to prepare nuclear plant and assist agency personnel to react in accordance with the emergency plans are inadequate.
- (s) Measures or tests to assure availability and operability of SONGS 2 & 3 emergency response equipment have not been formulated.
- (t) No agency has been designated with clear authority to function as the lead agency in the event of an emergency.
- (u) No assurance exists that a lead agency will in fact assume responsibility for evacuation of the exclusion

area, low population zone and the surrounding communities outside the low population zone.

- (v) No assurances exist that assist agencies will follow the directions of the lead agency.
- (w) The NRC has not approved the emergency plans as of this date.
- (x) Under the EP, Applicant and at least two additional assist agencies have potentially conflicting authority to evacuate the SONGS site beach area.
- (y) Under the EP, Applicants and at least five assist agencies have potentially conflicting authority to regulate the traffic control function inclusive of the low population zone.
- (z) Under the EP, Applicants and at least three assist agencies have potentially conflicting responsibility for radiological monitoring of evacuees.
- (aa) The number of personnel trained in radiological monitoring and the number of radiological monitoring devices available in an emergency is:
 - 1. Insufficient to protect the health, safety and welfare of the public;
 - 2. Distributed extremely unevenly among potential assist agencies; and
 - 3. Distributed primarily among agencies having no responsibility under the EP for radiological monitoring.
- (bb) Insufficient assurances exist that assist agencies will in fact provide adequate services in the following areas:

1. Law enforcement.
 2. Traffic control.
 3. Fire prevention and control.
 4. On-site medical services.
 5. Off-site medical services and facilities.
- (cc) No assurances exist under the EP and EPS that off-site assist agencies will be able to implement control measures to prevent or minimize ingestion of or exposure to contaminated materials by persons off-site.
- (dd) No assurances exist as to the dissemination of public evacuation information due to the diversity of agencies involved and the lack of centralized responsibility.
- (ee) Some emergency response plans may not have been designed to include potential nuclear accidents at site of SONGS 2 & 3.
- (ff) The emergency plan allows for an inadequate number of on-site physicians.
- (gg) The emergency plan has a vague concept of operating.
- (hh) Organization of the emergency plan is fragmented.
- (ii) There is an unclear relationship among state, and local and assist agency response measures.
- (jj) The emergency plans provide for no identification of those responsible for evacuation in the event of an emergency.

3-9

Describe how "the safety of persons in the surrounding areas will be imperiled".

Persons in the surrounding areas include those on the beach and in the water in front of or near SONGS site,

others in the low population zone, and all persons in communities outside the low population zone but within 25 miles of SONGS 2 & 3. The safety of these persons will be imperiled because;

- (a) They may not be warned in sufficient time of radiation danger so as to evacuate;
- (b) They may be unable to evacuate, even if warned in time, due to crowded conditions, traffic jams, clogged or impassible escape routes and roads, general panic, and unavailability of buses to limit vehicle evacuation of all beach users and other persons, resulting in extensive radiation exposure;
- (c) They may be injured or killed in an attempt to evacuate by means other than radiation such as vehicle accidents, hit-and-run, etc.;
- (d) Lootings of evacuated homes and businesses may occur possibly involving armed intervention and resulting in injury or death.

FOE CONTENTION NO. 4

The Applicants projection of fuel costs over the life of the plants does not adequately account for the escalation of uranium prices and therefore the cost-benefit analysis is in error.

- 4-1 (a) Upon what person or persons do you rely to substantiate your case on contention No. 4?
- (b) Provide the addresses, educational and professional qualifications of all persons named in (a) above.

Ron Carstens

Robert Lamson

David Snow of Mitchell-Hutchins, NYC

FOE et al. has provided all the information presently in its possession with respect to 4-1 (b) above.

- (c) Identify which of the persons indentified in (a) above you intend to call as witnesses on this contention in this proceeding.
- (d) Indicate which of the persons identified in (c) above you anticipate will appear voluntarily and which under subpoena.

At the present time, FOE et al. has not determined which of the above-identified persons it intends to call as witnesses, if any, on this contention, and which will appear voluntarily or require a subpoena.

- 4-2 Provide summaries of the views, positions, or proposed testimony on contention No. 4 of all persons named in your response to Interrogatory 4-1 above, that you intend to present during this proceeding.

Since FOE et al. has not yet determined which of those persons named in response to Interrogatory 4-1 it intends to present during this proceeding, FOE et al. is unable at this time to provide the information requested in Interrogatory No. 4-2.

- 4-3 State the specific bases, calculations and references upon which the persons named in response to Interrogatory 4-1 rely to substantiate their position regarding contention No. 4.

For Ron Carstens and Robert Lamson, refer to "Realistic Uranium Energy Yields and Costs" included with these responses as "Appendix I."

For David Snow, refer to Institutional Investor, October, 1975.

- 4-4 (a) What rate of escalation do you believe should be used in calculating uranium prices for purposes of this contention number 4?

A minimum of 79%.

- (b) What is the basis for this rate? Provide all calculations and identify all references used in arriving at your response to (a) above.

Refer to "Realistic Uranium Energy Yields and Costs" identified in Interrogatory No. 4-3 and included with these responses as "Appendix I". Refer to bibliography contained therein for all references. Refer to response 4-6 below for calculations used in response to 4-4 (a).

- 4-5 (a) Utilizing the rate of escalation stated in your response to Interrogatory 4-4 (a), what fuel cost do you calculate over the life of San Onofre, Units 2 & 3?

Refer to response 4-6 below.

- (b) Provide the bases and calculations for your response to Interrogatory 4-5 (a) above.

Refer to response 4-6 below.

- 4-6 Describe, in both quantitative and qualitative terms, the

effect on the cost/benefit analysis for San Onofre Units 2 & 3, which the fuel cost you have calculated would have.

- (a) Applicants' cost/benefit analysis fails to provide consideration for the greatest possible escalation of uranium prices based on recent occurrences. Between 1973 and March, 1976, a period of approximately three years, uranium prices increased from \$7 per pound to \$40 per pound. Long-term uranium contracts are generally tied to market price at delivery or 7% per year escalation, whichever is greater. Therefore, the future price of uranium cannot be less than the present (1978) price plus 7% per year escalation.

SONGS 2 & 3 over an operating life of 30 years will require approximately 15,780 metric tons of uranium or 526 M.T. per year. Converted to pounds, this equals a uranium requirement of 1,159,630 pounds annually (1 M.T.=2,204.62 pounds). At \$40 per pound, the cost of one year's supply would be \$46,385,200.

Using a "worst possible case" analysis, predicated on the 1973 to 1976 increase, the rate of escalation required in the cost/benefit analysis is 79% (the percent increase each year which resulted in the \$7 to \$40 price change over the 3 year period from 1973 to March, 1976). See Table I, below, for calculations. Using this rate of escalation over the 30 years operating life of SONGS 2 & 3 to account for a possible similar price increase over the operating life-span - the "worst possible case" - the cost of the annual uranium requirement during the 30th

year as well as the total aggregate uranium cost for 30 years, would reach astronomical proportions. Assuming a 1981 start up and a uranium price of \$40 per pound at that time (an unlikely assumption since the \$40 per pound figure was the March, 1976 price), the cost of uranium in 1985, just 4 years later, will have risen to at least \$411 per pound. See Table II for calculations. This would place the cost of SONGS 2 & 3 total uranium requirement for that year alone (1,159,630 pounds) at \$476,607,930 or over 10 times greater than the total cost for 1981 (\$46,385,200).

The possibility of these prohibitively high costs invalidate the Applicants' cost/benefit analysis contained in the final EIR since that analysis did not use a "worst possible case" approach.

- (b) FOE et al. is informed and believes that Applicants have contracted only for partial uranium requirements for SONGS 2 & 3 operating life-span. Without contracts for the total aggregate uranium requirements for SONGS 2 & 3 for its operating life, no reasonable assurances exist that Applicants will be able to obtain sufficient uranium at a price which will not invalidate the cost/benefit analysis.

TABLE I

URANIUM COST-PER-POUND INCREASE 1973-1976

RATE OF INCREASE CALCULATIONS

\$7.00	x	.79	=	5.53	+	7.00	+	\$12.53	-	end of 1973
\$12.53	x	.79	=	9.90	+	12.53	+	\$22.43	-	end of 1974
\$22.43	x	.79	=	17.72	+	22.43	+	\$40.15	-	end of 1975, March 1976

TABLE II

PROJECTED URANIUM COST-PER-POUND AT 79%

ANNUAL RATE OF INCREASE FOR 1981-1984

\$40.00	x	.79	=	31.60	+	40.00	=	\$71.60	-	end of 1981
\$71.60	x	.79	=	56.56	+	71.60	=	\$128.16	-	end of 1982
\$128.16	x	.79	=	101.25	+	128.16	=	\$229.41	-	end of 1983
\$229.41	x	.79	=	181.23	+	229.41	=	\$410.64	-	end of 1984

- 4-7 (a) What is the maximum fuel cost which you calculate that would not affect the cost/benefit balance for San Onofre Units 2 & 3?

1.6 mills/ KW hr.

- (b) What is the basis for this cost? Provide all calculations and identify all references used in arriving at your response to (a) above.

This cost is based on Applicants cost/benefit analysis

contained in the final environmental impact report for
SONGS 2 & 3.

- 4-8 To the extent that Intervenors' case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

All material presented as exhibits on direct testimony.

Contracts, if any, between Applicants and uranium suppliers if same can be obtained from Applicants.

Final Environmental Impact Statement for SONGS 2 & 3.

Any other material contained in responses to these interrogatories which relates to Contention No. 4.

- 4-9 Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

Those materials identified in response to Interrogatory No. 4-8, above.

Weekly Energy Report, March, 1976.

Institutional Investor, October, 1975.

"Realistic Uranium Energy Yields and Costs", monograph by Ron Carstens and Robert Lamson; included herein as "Appendix I."

"The Economics of Nuclear Power", monograph by Leonard F.C. Reichle, August 27, 1975.

"The Emerging Economics of Nuclear Power", monograph by Robert D. Lamson.

ERDA Weekly Announcement, April 16, 1976.

Wall Street Journal, "Utilities Rap Westinghouse Cancellation of Uranium Deliveries, Weigh Responses", dated 9-15-75.

"We May Find Ourselves Short of Uranium, Too", monograph by Ralph E. Lapp, Fortune, October, 1975.

Wall Street Journal article, "Uranium Drain", by William M. Carley, dated 6-7-76.

Materials identified in bibliography contained in monograph designated as "Appendix I" and attached to these responses.

Testimony of Stephen K. Moody, Director of Research, Council on Economic O Priorities, before the California Legislature Assembly Committee on Energy and Diminishing Materials, December, 1975.

REALISTIC URANIUM ENERGY YIELDS AND COSTS

by

Ron Carstens, Robert Lamson

Nuclear power plants have always been known to have high "front end" capital costs, and since 1970 the escalation in capital costs has posed an increasingly serious economic problem for nuclear power. However, nuclear power advocates in government and industry have attempted to counteract these high capital costs by emphasizing the "practically negligible" uranium fuel costs of nuclear power. The uranium fuel cost component of electricity produced from nuclear power has received scant attention outside of cost estimates for specific situations¹ and individual power plants.² In almost all cases, these "official" costs for the uranium fuel component have been around 3 mils per kwh, with recent figures put at 5 to 6 mils.^{3,4} Utility industry officials have been led to believe that this was the primary advantage of nuclear over coal power and offset nuclear's higher capital costs. However, there seems to be a lack of published operating data on which to base such fuel cost calculations, particularly electricity yield from uranium. On the other hand, there is a great deal of information published on expected or projected yields.^{1,4,12}

This investigation was undertaken to establish what uranium fuel cost component utilities could expect for a nuclear power plant in the near future, based upon actual operating data. All utilities operating nuclear power plants for more than five years were invited to submit their uranium fuel loading record, including dates of loading, amount of fuel charged and its enrichment. We obtained data from startup for five utilities (5,6,7,8,9) and the ten-year record of two other plants from ERDA.¹⁰ The total electrical generation for these plants from startup date to the latest fuel loading date was derived from data in

the Federal Government publication "Monthly Operating Plants Status Report" known as the "Gray Book." Utilizing the fuel loading record and its enrichment, the uranium oxide "yellowcake" required to fuel each plant was calculated from a material balance on the enrichment step, using uranium ores naturally occurring 0.711 wt% U²³⁵ in the feed and a tails assay of 0.3 wt%.^{1,4,11} The fuel charges used were the sum of the individual loadings charged to the plant from startup until the fuel cycle just prior to the last one submitted by the utility. In this way, the electricity generated from the last fuel load charged to the plant would be included to give maximum credit for generation from this last load. These overall electricity yields, as summarized in Table 1, were simply calculated by dividing the total electricity generated over the periods described by the net fuel charged converted to uranium yellowcake (100% U₃O₈ basis). The individual plant's yields were then averaged by weighting the yield with the operating life to give more weight to the plants operating the longest in order to de-emphasize the yield-dampening effect of the initial core loading. The average yield obtained was 12.36 MMkwh per short ton yellowcake, which is astonishingly low by previous statements, being less than 40% of the lowest previous official government and industry statements. In official Federal Government publications^{1,12} as well as private^{4,13} and industry³ manuscripts, the energy yield from uranium is represented as "unchallengeable and immutable" at around 32,600 Megawatt (thermal) days per metric ton uranium metal in the fuel. This calculates out to something over 32 MMkwh per short ton yellowcake over a ten-year operating period without reprocessing, depending upon reactor type, etc. Additionally, in 1970 the AEC stated that reactors yielded 34 MMkwh per short ton yellowcake, without reprocessing.¹⁴ Just last year, an ERDA official testified that light water nuclear reactors in the United States routinely contributed 32 MMkwh per

short ton yellowcake ¹⁵ to the United States energy needs (without reprocessing). Some have claimed over 60 MMkwh per short ton yellowcake as the energy yield.⁴ On the basis of the data revealed here, it appears that present generation light water reactors may use at least two-and-one-half times as much uranium fuel as has been heretofore assumed by Federal planners.

As can be noted in Table 1, the electrical yields vary a great deal, with the highest being over twice the lowest yielding plant. Attempts were made to correlate these data with capacity factor, plant size, plant type, % enrichment, and between short and long-operating plants, all with no result. Capacity factor would be a logical correlating factor since the plants are charged with a designated amount of fuel and the rods are regularly changed even though the electrical output may be below design for various reasons. However, there is no correlation with any factors these authors could identify. We also considered the relatively brief operating time for the plants considered here (average life 7 years) with respect to the dampening effect of the initial core loading. However, using the Government's energy yield figures for the initial core and replacement loadings,¹² we calculated the yield difference between a plant operating seven years (average for this study) and those operating 15 years, or one-half the plant's expected operating life. The difference in yield obtained was only 3% and thus would not account for the differences revealed here. Meager published data on BWR²⁹ fuel rods performance would seem to be in agreement with this data. Actually, these electrical yields as derived here are high by 6% to 10% because no account was taken of transmission losses¹⁷ which are real due to the large and remote nature of these plants. Therefore, for a utility that is concerned with buying uranium yellowcake and delivering "billable" electricity to its customers, the

actual electrical yield based upon these operating data is well below 12 MMkwh per short ton yellowcake. This analysis, of necessity, did not include the effect of recycling uranium or plutonium as these are not commercially practical at present. There is considerable doubt if there ever will be commercial reprocessing and recycling.¹⁶ Even given the unlikely event of recycling becoming a commercial reality, it would at best increase the yield 20% to 25%¹² which may never be realized due to the doubtful economics of reprocessing and recycling.¹⁸ In any event, it is questionable that reprocessing and recycling can be operational fast enough to help the United States from exhausting domestic uranium reserves in the near future.

Utilizing the electrical yield derived herein, the official ERDA figures on proven uranium reserves,¹⁹ and the projected installation of nuclear plants,¹² the United States could theoretically run out of uranium fuel for its scheduled plants well before 1990 assuming no imports. Thus it is peculiar indeed that the nation is being asked to go nuclear in order to be self-sufficient in energy. In a day when the United States has problems with petrodollars and an Organization of Petroleum Exporting Countries, we can expect to have problems tomorrow with uranodollars and an Organization of Uranium Exporting Countries.

The next portion of this study considered the effect of this lowered electrical yield upon the fuel cost component of nuclear generated electricity. There are many costs associated with uranium fuel which are not considered in traditional cost calculations for individual utilities' plants. These associated costs--spent fuel reprocessing to ultimate waste management and subsidies on reactor development and fuel enrichment--have caused some nuclear proponents to seriously re-evaluate cost estimates.²⁰ However, for purposes of this discussion these costs are not considered here, and we restrict our analysis to the

fuel cost component strictly from the standpoint of an individual utility operating a nuclear fuel generating station which will be on stream in 1985. The components of this fuel cost reflect only the operations of fuel gathering and preparation in order to prepare the fuel rods for light water nuclear plants. These include the cost of uranium yellowcake itself, transportation and conversion to UF_6 for fuel enrichment, the enriching process (to allow the natural 0.711% U_{235} to be upgraded to about 3.2%, reconversion to U_3O_8 and fabrication into fuel elements to be placed in a reactor.

The cost of yellowcake has undergone enormous increases in the past few years, from a market price of just 7\$/lb in 1973 to the present contract price of 40\$/lb.²⁰ Current long-term uranium contracts are written tied to market price at delivery or 7% per year escalation, whichever is greater. Therefore, the future price of uranium cannot be less than present prices (about 40\$/lb) plus 7% per year escalation. This yields a 1985 price of about 80\$/lb which is as low as a utility can expect to pay. Others have anticipated even higher prices,²² some well over 100\$/lb²³ for the mid 1980's. The uranium supply situation is so serious that some utilities have been forced to invest in uranium mines as a defense against further escalation.^{24,25} Further aggravating the situation will be the lower-than-expected electricity yields observed here.

At the enriching plant step, we can also see the effect of inflation and rising electricity prices on the tremendous amounts of power it takes to enrich the uranium. Even considering ERDA's heavily-subsidized operation and using tax-free TVA power, the Government charge for enriching has climbed from \$28.70/kgSWU in 1971 to the recently announced \$67.25/kgSWU²⁵ which is almost a 20% annual increase. Further cost increases will be forthcoming due to the increasing cost of electricity, lack of added

Government subsidy or private enriching plants, and the normal forces of inflation.

With an escalation rate of 7% per year for inflation, costs double every ten years.

Therefore, we estimated a 1985 enriching cost of \$135/kgSWU, which is probably on the low side given past and future expected electrical cost increases, the real costs of government subsidy, and/or a shortage of enriching capacity. The final step of reversion of UF_6 back to the oxide and fuel rod fabrication has been estimated at \$100/kgU,² but a realistic estimate puts the figure at \$125/kgU,²⁷ which yields an escalated figure for 1985 of \$250/kgU.

Combining these cost elements with the average operating electrical yield derived in Table I gives the uranium fuel costs in Table II. These 1985 basis costs total 19.8 mils per kwh just for the uranium fuel component alone into nuclear power plants. This is some 400% to 600% higher than previous estimates by government^{1,2,3,4} and industry.

These costs do not include nuclear fuel financing charges which will add at least 20% and as much as 50% to the Table II figure of 19.8 mils per kwh. Financing costs vary greatly and depend upon actual vs. expected fuel rod life, how much fuel reserve a utility likes to have and their financing costs. Any economic advantages which may come to pass from reprocessing or "breakthroughs" in enrichment technology will be completely overshadowed by these financing charges and by transmission line losses which were also not included. Therefore there is reasonable assurance that a utility in 1985 will have pay at least 20 mils per kwh for nuclear fuel costs alone.

It would appear, based upon this analysis, that the nuclear fuel costs pass-throughs of the 1980's will make those of the '70's seem low indeed. Furthermore the

highly touted fuel cost advantage of nuclear power will very soon turn out to be a disadvantage. Even if we escalate the present average U.S. price of coal (\$16.90/ton)²⁸ to 1985 (at 7% per year, yielding \$33.80/ton), and use an average energy yield of 3000 kwh/ton for coal, we can see that the 1985 fuel cost of coal power is only 11.3 mils per kwh, or 57% of the uranium fuel cost component in Table II. † The present lower charges for nuclear plant's fuel is evidently a short-lived utopia that will be shattered as we enter the 1980's.

TABLE I

SUMMARY OF ELECTRICITY YIELDS FROM OPERATING NUCLEAR POWER PLANTS

	1	2	3	4	5	6	7
Reactor	First Date of Commercial Operation	Latest date of fuel loading received from utility	Total uranium fuel charged to latest date, excluding last fuel load (metric tons)	Average wt% enrichment U ₂₃₅	Total yellowcake (100% U ₃ O ₈ required to fuel reactor, calculated from reactor fuel charge (short tons) ^a	Cumulative electrical production, startup to latest date of fuel loading, MM KWH	Gross energy yield, MM KWH per short ton yellowcake
Connecticut Yankee	1/68	8/73	152.9	3.64	1,637	27,400	16.75
Dresden I	7/60	9/71	139.2	1.88	695	10,700	15.40
Dinna	3/70	3/75	245.9	2.82	1,946	13,700	7.04
LaCrosse	9/69	8/75	15.5	3.63	169	1,290	7.63
Monticello	7/71	10/75	146.8	2.34	947	13,300	14.04
W.R. Robinson 2	3/71	12/75	140.6	2.64	1,042	19,850	19.02
Yankee-Rowe	8/60	9/71	111.6	4.20	1,378	12,300	8.93

Weighted average by length of operation 12.36

^a - Calculated from individual fuel loadings and enrichments supplied for each reactor and from enrichment section material balance at .3 wt% tails assay and 1.3 short tons 100% U₃O₈ per metric ton U fuel charged.

Note: Total uranium fuel, Col.3, and average % enrichment, Col.4, will not necessarily calculate out to Col.5 because of the non-linearity of the enrichment material balance function. Col.5 was calculated from actual individual fuel loadings received from the utilities, and Cols. 3 and 4 summarize their data for ease of presentation.

TABLE II
COST SUMMARY
URANIUM FUEL COST COMPONENT OF NUCLEAR ELECTRICITY
1985 BASIS

	Cost/Unit	Units/short ton yellowcake	Cost per short ton yellowcake	Mils/KWH ^d
100 % U ₃ O ₈ yellowcake	80\$/lb ^a	2,000	\$ 160,000	12.95
Transportation and conversion to UF ₆	7.30\$/lb U ^b	239	1,750	0.14
Enrichment	135\$/SWU ^e	413.7 ^c	55,850	4.52
UF ₆ reconversion to U ₃ O ₈ , fabrication into fuel rods	250\$/kgU ^e	108.7	27,180	<u>2.20</u>
			TOTAL	<u>19.81 mils/kwh</u>

a - Present NUEXCO contract price escalated @ 7% per current contracts to 1985.

b - Approximate estimate includes \$2.86/lb U for conversion¹ and 27¢/lb yellowcake equivalent, for transportation to and from conversion and enrichment and final delivery, both escalated at 7% per year.

c - At average 3.2% enrichment, requiring 3.80 kg SWU for U fuel enrichment, and 9.2 short tons U₃O₈ per metric ton U.^{1,11}

d - At Table I average yields of 12.36 MMkwh per short ton U₃O₈ yellowcake.

e - Current market prices escalated to 1985 at 7% per year.

BIBLIOGRAPHY

1. ERDA-52
2. Final Environmental Statements NUREG-75/053, May 1975, Skagit Nuclear Power Project, Table 10.2
3. Talk given by Gordon Corey, Vice-chairman Commonwealth Edison, Nov. 17, 1975, at M.I.T., reported by Atomic Industrial Forum 12/8/75.
4. Appendix B, Nuclear Fuels Policy Paper-1976, The Atlantic Council of the U.S., Library of Congress Card No. 76-151-28.
5. Letter 12/10/75 from Jim Karalus, Northern States Power Company.
6. Letter 10/22/75 from George Fox, Northeast Utilities Service Company.
7. Letter 11/11/75 from Robert Mecrody, Rochester Gas and Electric Corporation.
8. Letter 11/3/75 from John Madgett, Dairyland Power Cooperative.
9. Letter 10/28/75 from Larry Smith, Carolina Power & Light Company.
10. Letter 8/19/75 from Frank Baranowski, Director, Nuclear Fuel Cycle, ERDA.
11. ORO-684, AEC Gaseous Diffusion Plant Operations.
12. WASH 1139, Table 8.
13. Paper from lecture in Japan by Manson Benedict, M.I.T. Nuclear Engineering, April 1975 (Fuel Cycles for Nuclear Reactors--Uranium Enrichment and Reprocessing, p. 1.5)
14. Letter from George Kavanaugh, General Manager for Reactors, AEC, to Senator Frank Moss 10/1/70.
15. Testimony of John Paterson, Chief Supply Evaluation Branch, ERDA, at NRC hearings, May 1975, on River Bend Nuclear Units 1 and 2, St. Francisville, LA.
16. Wall Street Journal, Feb. 17, 1976, page 1.
17. Testimony of P. Gans, Bonneville Power Administration in NRC hearings, Skagit Nuclear Project (June 1976).

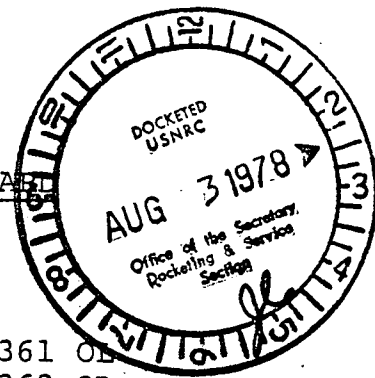
(Continued)

18. M. Resnikoff, Expensive Enrichment, Environment, Vol. 17, No. 5, p. 28-35.
19. ERDA Weekly Announcements, April 16, 1976, 640,000 Tons Proven Reserves.
20. Weekly Energy Report, March 1, 1976.
21. Nuclear Exchange Corporation Quotations, Early 1976.
22. Bellingham Herald, Dec. 28, 1975, page 1, for Puget Sound Power & Light, Skagit Nuclear Project (83\$/lb).
23. David Snow of Mitchell-Hutchins, N.Y.C., October 1975, Institutional Investor.
24. Wall Street Journal, Jan. 19, 1976.
25. Syndicated Report of Commonwealth Edison uranium mine purchase, by Bruce Ingersol, Chicago Sun-Times.
26. ERDA Weekly Announcements, Mar. 5, 1976.
27. Private communication with Dr. R. Bardes, Exxon Nuclear, 4/23/76.
28. Federal Power Commission News, Mar. 4, 1976.
29. Nail, Stobbs, "The Nuclear Assurance Corporation Performance Program," Symposium Proceeding, Vienna, Oct. 8-12, 1973, International Atomic Energy Agency STI/PUB/35.

RELATED CORRESPONDENCE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

Docket Nos. 50-361 OL
50-362 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "INTERVENORS FRIENDS OF THE EARTH, ET AL INTERROGATORIES TO NRC STAFF, NUCLEAR REGULATORY COMMISSION, have been served on the following by deposit in the United States mail, first class, this 28th day of July, 1978:

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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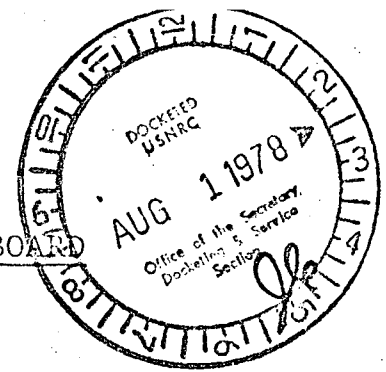
Richard J. Wharton

Richard J. Wharton

Attorney for Intervenors FOE ET AL

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of

SOUTHERN CALIFORNIA EDISON COMPANY,
ET AL.(San Onofre Nuclear Generating Station,
Units 2 and 3)Docket Nos. 50-361 OL
50-362 OLINTERVENOR, FOE ET AL
ANSWERS TO INTERROGATORIES
PROPOUNDED BY SOUTHERN CALIFORNIA EDISON

TO: SOUTHERN CALIFORNIA EDISON COMPANY, et al:

Pursuant to Title 10, Part 2, Section 2.7406 of the Code of Federal Regulations, Intervenor, Friends of the Earth, et al, in the above-entitled action hereby respond to "First Set of Interrogatories to Intervenor, Friends of the Earth, Mr. and Mrs. August Carstens, Mr. and Mrs. Lloyd VanHaden, Mr. Donald May and Mrs. Donis Davey" which were served by mail on Intervenor on June , 1978.

INSTRUCTIONS AND DEFINITIONS

For purposes of the responses contained herein, the following definitions and instructions shall apply:

(a) The term "these interrogatories" refers to "First Set of Interrogatories to Intervenor Friends of the Earth, Mr. and Mrs. August Carstens, Mr. and Mrs. Lloyd VanHaden, Mr. Donald May and Mrs. Donis Davey" which were served by mail on Intervenor on June , 1978.

(b) The term "NRC" refers to the United States Nuclear

Regulatory Commission.

(c) The term "FOE et al" refers jointly to intervenors Friends of the Earth, Mr. and Mrs. August Carstens, Mr. and Mrs. Lloyd VonHaden, Mr. Donald May and Mrs. Donis Davey.

(d) The term "Applicants" refers jointly to the co-owners of San Onofre Nuclear Generating Station, Units 2 and 3, Southern California Edison Company and the San Diego Gas & Electric Company.

(e) The term "SONGS 2&3" refers to the San Onofre Nuclear Generating Station, Units 2 & 3.

(f) The term "FSAR" refers to the "Final Safety Analysis Report, San Onofre Nuclear Generating Stations, Units 2 & 3."

(g) The term "EP" refers to the "Emergency Plan - San Onofre Nuclear Generating Station, Units 2 & 3"; the term "EPS" refers to the "Supplement to Emergency Plan - San Onofre Nuclear Generating Station, Units 2 and 3."

(h) The term "San Diego ODP" refers to the "Unified San Diego County Office of Disaster Preparedness", formerly known as "United San Diego County Office of Emergency Services"; the term USMC refers to "United States Marine Corps, Camp Pendleton"; the term "State OES" refers to the "Radiological Section of the State Office of Emergency services"; the term "State Parks" refers to the "California State Department of Parks and Recreation."

(i) The term "off-site assistance agencies" refers generally to all federal, state and local government agencies with jurisdictions to respond in any manner in the event of a radiological or other emergency at SONGS 2 & 3.

(j) In all instances Intervenor's in response to these interrogatories have provided such relevant, unprivileged, non-confidential information which is responsive to each of these interrogatories and which Intervenor's are informed and believe to be available from the Public Documents Room of the Mission Viejo Public Library or is available from Intervenor's files.

INTERROGATORY NO. 1:

At the present time do you contend that the seismic design basis for SONGS Units 2 and 3 is inadequate to protect the public health and safety and does not comply with 10 CFR, Part 100, Appendix A, in that the earthquake which could cause the maximum vibratory ground motion has not been assigned as the safe shutdown earthquake? If so,

(a) State each and every fact upon which you base this contention;

(b) Identify each and every document, or communication upon which you base this contention;

(c) Identify each and every event upon which you base this contention;

(d) Identify each and every person with knowledge of the factual basis or bases for this contention, or on whose writings, opinions, or testimony you base this contention;

(e) Identify each and every person whom you expect to call as witness, expert or otherwise, at the hearing on this contention before the Nuclear Regulatory Commission Licensing Board; and as to each potential witness so identified, provide the following information:

(i) State the precise subject matter on which the witness is expected to testify;

(ii) State the substance of the facts and opinions to which you expect the witness to testify; and

(iii) Summarize the factual and theoretical bases, as well as any other grounds, for each opinion to which the witness is expected to testify.

RESPONSE TO INTERROGATORY NO. 1:

1. Yes

(a) and (c)

(1) A fault located in Trabuco Canyon, approximately 14 miles northwest of the SONGS site. The fault lies in a NE-SW direction.

(2) Two earthquakes occurring on January 3, 1975, magnitudes 3.3 and 3.8 respectively, in the vicinity of the above described fault.

(3) Five seismic events occurring between June 29 and July 1, 1977, in the vicinity of the above described fault.

(4) A series of small faults located 6-1/2 miles SE of the SONGS site. These faults lie in a N-S direction. The magnitudes of above-described seismic events are unknown to FOE et al. at this time.

(5) A fault located 1-1/2 miles east of the SONGS site. The fault lies in a N-NW direction.

(6) Implications of the fault discovery 2.5 miles west of the Diablo Canyon site (Hosgri Fault) subsequent to construction commencement of the Diablo Canyon plants, as such post-construction

discovery relates to the potential for similar discoveries at or near the SONGS site, resulting in the possibility of an earthquake occurrence with a greater magnitude than that for which the SONGS are designed. The events described above affect the seismic design basis for SONGS 2 & 3 in the following manner:

(1) These incidents are relevant new information and therefore neither all activity nor all faults having the potential for affecting the SONGS have been considered in the design basis of the plants, as required by 10 CFR part 100, Appendix A.

(2) These incidents render invalid all previous reviews, reports and safety studies which stated that there were no capable faults, as defined in 10 CFR, part 100, Appendix A. III(g), within the vicinity of SONGS.

(3) These incidents demonstrate that movement occurred at or near the ground surface at least once within the past 35,000 years, rendering the fault capable and the design basis invalid.

(4) These incidents demonstrate that additional faults may exist near the SONGS site which could result in an earthquake and consequent vibratory motion exceeding that for which SONGS have been designed.

(b) Safety Evaluation of the SONGS Units 2 & 3, AEC, October 20, 1972.

Safety Evaluation Of The Geologic Features At The Site Of The San Onofre Nuclear Generating Station, N.S. Nuclear Regulatory Commission, July 8, 1975.

FSAR as submitted to NRC by applicants.

Testimony of Dr. James Brune on March 15, 1978 and May 22, 1978 at the Construction Permit Hearings, Docket 50-361 and 50-362:

"San Onofre Nuclear Generating Station Vibration Tests" by C.B. Smith, R. Thaney, G.S.C. Wang, R.B. Mattheisen School of Engineering and Applied Science, UCLA.

Testimony of Dale G. Bridenbaugh, Richard B. Hubbard, and Gregory C. Minor before the Joint Committee on Atomic Energy, February 18, 1976.

Reactor Safety Study, WASH - 1400 (NUREG 75/014) U.S. Nuclear Regulatory Commission, October, 1975.

"A Reliability Review Of The Reactor Safety Study", by Milton Kamins, April 1975 (P-5413)

"Memorandum to the Commissioners, U.S. Nuclear Regulatory Commission, Recommendation Relating to the Licensing of Commercial Nuclear Power Plants in the USA," by Keith Miller, May 6, 1976.

Wagner, H. C. and Junger, A., Geology of the San Pedro Basin and Shelf Offshore, Southern California, (1975); copies are available from Geological Society of America, Boulder, Colorado or any university geology library (GSA Abstract, Vol. 7, No. 3).

Vedeer, J. G. et al., Preliminary Report on the Geology of the Continental Borderlands of Southern California (1974); copies are available from U. S. Geological Survey (USGS Misc. Field Studies MF-624).

Reitman, Jan D. and Brogan, George E., Geotechnical Evaluation of Potential Island and Offshore California LNG Import Terminal Sites, (June 9, 1978) c/o Woodward-Clyde Consultants, 4000 W. Chapman Avenue, Post Office Box 1149, Orange, California 92668.

Welday, E. E. and Williams, J. W., Offshore Surficial Geology of California (1975); copies are available through the California Division of Mines and Geology (State of California Mapsheet 26).

Ziony, Joseph I., Preliminary Map Showing Recency of Faulting in Coastal Southern California (1974); copies are available through the United States Geological Survey (USGS, Misc. Field Studies MG-624).

Junger, A. and Wagner, H.C., Geology of the Santa Monica and San Pedro Basins, California Continental Borderland (1977); copies are available through the United States Geological Survey (USGS Misc. Field Studies MG-820).

Scott, John D., Geologic Investigation of Bulldozer Trench at Proposed Viejo Substation Site (Nov. 1, 1975) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, CA.

Scott, John D., Geologic Investigation of the Mission Viejo (F. B. Leighton) Bulldozer Excavation (Nov. 14, 1975) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, CA.

Scott, John D., Geomorphic Analysis of Terraces in San Juan & Bell Canyons, Orange County, California (Sept. 15, 1975) c/o Fugro, Inc., 3777 Long Beach Blvd, Long Beach, CA.

Scott, John D., Geologic and Tectonic Characteristics of the Cristianitos Fault (Draft Report of June, 1975) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, CA.

Scott, John D., Final Report on Geologic Features at the San Onofre Nuclear Generating Station, Units 2 and 3 (Aug. 1975) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, CA.

West, J. C. , Generalized Sub-surface Geological and Geophysical Study, Capistrano Area (Nov. 1975) c/o 515 W. Commonwealth, Fullerton, CA.

Biehler, Shawn, Seismological Investigation of the San Juan Capistrano Area, Orange County (Nov. 1975) c/o 171 E. Blaine St., Riverside, CA.

Scott, John D., Report on Geologic Investigation Trail Six and Horno Canyon, Landslides Southeast of San Onofre Nuclear Generating Station (Oct. 15, 1977) c/o Fugro, Inc. 3777 Long Beach Blvd., Long Beach, CA

Scott, John D., Geologic Investigations of Offsets in Target Canyon, Camp Pendleton, California (Oct. 15, 1977) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, CA.

Scott, John D., Supplemental Report of Geologic Investigations, Trail Six Landslide (Nov. 28, 1977) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, CA.

Scott, John D., Geologic Investigation of Fault E, Southeast of the San Onofre Nuclear Generating Station (May 12, 1978) c/o Fugro, Inc., 3777 Long Beach Blvd., Long Beach, CA.

Ehlig, P. E., Geologic Report on the Area Adjacent to the San Onofre Nuclear Generating Station, Northwestern San Diego County, California (Sept. 31, 1977) c/o 1560 Via Del Rey, South Pasadena, CA.

Shlemon, R. J., Geomorphic Analysis of Fault E, Camp Pendleton, California (Sept. 1977) c/o P.O. Box 3066, Newport Beach, CA.

Pickering, Lowe and Garrick, Inc., Nuclear Power Plant Siting, Camp Pendleton Marine Corps Base (April 1977); copies are in the possession of SCE.

Hunt, G. S. and Hawkins, H. G., Geology of the San Onofre Area and Portion of the Cristianitos Fault (1975) c/o SCE.

Morton, P. K., Geology and Engineering Geologic Aspects of the South Half of the Canada Gobernadora Quadrangle, Orange County, California (1975); copies are available through the California Division of Mines and Geology (CDMG Special Report 114).

Barrows, Allen G., A Review of the Geology and Earthquake History of the Newport-Inglewood Structure Zone Southern California (1974); copies are available through the California Division of Mines and Geology (CDMG Special Report 114).

Crowell, J. C., San Andreas Fault in Southern California, (1975) c/o University of California, Santa Barbara.

Miller, R. V. and Tan, S. S., Geology and Engineering Geologic Aspects of the South Half of the Tustin Quadrangle, Orange County, California (1976); copies are available through the California Division of Mines and Geology (CDMG Special Report 126)

Tan, S. S. and Edgington, W. J., Geology and Engineering Geologic Aspects of the Laguna Beach Quadrangle, Orange County, California (1976); copies are available through the California Department of Mines and Geology (CDMG Special Report 127).

Kennedy, M. P. Recency and Character of Faulting Along the Elsinor Fault Zone in Southern Riverside County, California (1977); copies available through the California Department of Mines and Geology (CDMG Special Report 131).

Kennedy, M. P. and Peterson, G. L., Geology of the San Diego Metropolitan Area, California (1975); copies are available through the California Department of Mines and Geology (CDMG Bulletin No. 200).

Grannell, R. B., and Lang, H. R., A Detailed Gravity Survey of the Cristianitos Fault System, Southern Orange County, California (April 1975); copies are in the possession of SCE.

(d) Dr. Karen McNally, research fellow, Caltech seismological laboratory.

Lucile Jones, Massachusetts Institute of Technology.

Prof. Hiroo Kanamori, geophysicist, Caltech.

Dr. Mizuko Ishida, research fellow, Caltech.

Dr. James Brune, Associate Director of the University of California Institute of Geophysics and Planetary Physics.

Dr. Clarence R. Allen, California Institute of Technology.

Robert Strand, Sr. Staff Geologist, California Energy Commission.

Katherin Bering, Ph.D. geochemist, USGS, Menlo Park, CA.

Thomas Collins, 5 years graduate work in geologic hazards at UCLA; geologist with U.S. Forest Services.

Rene Engel, Ph.D. in geology at Caltech; Ph.D. in chemical engineering at the University of Paris.

Adam Honea, Ph.D. in geophysics and structural geology, Stanford University; member of Geology Department at California State University at Humbolt.

Pierre St. Amand, Ph.D. in geophysics and geology at Caltech; B.S. in physics and electrical engineering from University of Alaska; currently with U.S. Naval Weapons Center at China Lake.

Dr. George M. Moore, Chief Geologist of the USGS, San Diego.

Jerry Pinckney, believed to be a chief engineer geologist in San Diego.

Dr. Robert P. McEuen, professor of geophysics at San Diego State University.

Dr. Michael P. Kennedy, research geologist for the State Division of Mines and Geology, and for Scripps Institution of Oceanography.

Sean Siang Tan, L.A. geologist.

Dr. Rodger Chapman, state geologist, Sacramento.

Gordon W. Chase, state geologist, Sacramento.

Dr. Eli Silver, Chairman of the University of California, Santa Cruz, Geology Department.

Dr. Kenneth Lajoie, USGS, Menlo Park, CA.

Dr. Clarence Hall, Chairman, UCLA Geology Department.

Ruth Anderson, former USGS geologist and member of California Coastal Commission in 1976.

Richard S. Simons, seismologist, Institute of Geophysics and Planetary Physics, La Jolla, CA.

George W. Housner, professor of earthquake engineering, Caltech.

Clarence Allen, professor of seismology and geophysics, Caltech.

Dr. Gilbert Hegemier, earthquake engineer, UCSD.

Alfonso Reyes, graduate student, UCSD Institute of Geophysics and Planetary Physics.

Dr. Henry W. Kendall, MIT, nuclear physicist.

FOE et al. intends to rely, in addition to those individuals listed above, on those persons identified with their respective studies in FOE et al's response to interrogatory no. 1-b. FOE et al has provided all the information presently in its possession with respect to the addresses, educational and professional qualifications for each of those persons identified in its response to interrogatory no. 1(d).

(e)(i),(ii),(iii) At the present time, FOE et al. is in the process of determining which of the above-identified persons it

intends to call as witnesses on this contention.

Since FOE et al. has not yet determined which of those persons named in response to Interrogatory 1(d) it intends to present during this proceeding, FOE et al. is unable at this time to provide summaries of the views, positions or proposed testimony of said persons.

INTERROGATORY NO. 2:

At the present time do you contend that the cavities caused by the Applicants' dewatering of the SONGS, Units 2 and 3, site will have an unacceptable adverse effect on the capability of structures and equipment for SONGS, Units 2 and 3 to withstand the design basis seismic events? If so,

(a) State each and every fact upon which you base this contention;

(b) Identify each and every document or communication upon which you base this contention;

(c) Identify each and every event upon which you base this contention;

(d) Identify each and every person with knowledge of the factual basis or bases for this contention, or on whose writings, opinion, or testimony you base this contention;

(d) Identify each and every person whom you expect to call as a witness, expert or otherwise, at the hearing on this contention before the Nuclear Regulatory Commission Licensing Board; and as to each potential witness so identified provide the following information:

(i) State the precise subject matter on which the witness is expected to testify;

(ii) State the substance of the facts and opinions to which the witness is expected to testify;

(iii) Summarize the factual and theoretical bases, as well as any other grounds, for each opinion to which the witness is expected to testify.

RESPONSE TO INTERROGATORY NO.2:

Yes.

(a) and (c)

(1) Since the objective of the seismic design of a nuclear power plant is to verify that the most adverse conditions of stress and deflection resulting from the combined influence of normal and earthquake loads will not impair safe operation or orderly shutdown of the plant, unless each structure, system and component important to plant safety is designed to withstand the maximum credible earthquake taking into consideration the possible instability resulting from dewatering cavities such as those found at the SONGS site, the afore-mentioned structures, systems and components would be necessarily adversely and unacceptably affected should such a maximum credible event occur.

(2) The structures, systems and components important to safety whose capability to withstand the design basis seismic event and which may be adversely and unacceptably affected:

(a) Those items whose failure would result in an unrestricted release of radioactive products.

(b) Those items needed for safety injection or recovery from a loss of coolant accident.

(c) Those items needed to insure the safe and orderly shutdown of the unit.

The following components, systems, and structures are among those outlined in (a), (b), and (c) above. This list is not intended to be inclusive.

Core support structures including both welded and bolted assemblies.

Reinforced concrete reactor support structure including the reactor vessel.

Vital piping systems.

Steel containment vessel and foundation.

Framed steel structures.

Concrete structures above ground.

(3) All plant structures, systems and components important to safety should be reinforced or replaced with items sufficient to withstand vibratory ground motion of .75g taking into consideration existence of the cavities and the maximum credible design basis seismic event. FOE et al. relies on standard, generally accepted seismic design base calculations and references to support its contentions, specified in response to Interrogatory 2 (a) (See, for example, C.S.C. Wang, Analysis of Nuclear Reactor Equipment Response to Earthquake Forces, Ph.D. Dissertation, UCLA, 1970). In the establishment of the seismic design criteria, a log-log plot of the acceleration response spectra normalized to a maximum ground acceleration of 0.75g for various percentages of critical damping, should be utilized in all calculations for those structures, systems and components important to plant safety.

Additionally, FOE et al. is informed and believes that engineering studies of the effects of the dewatering well cavities on the structural response of SONGS 2 & 3 seismic

Category I Structures are currently being performed. FOE et al. interprets Category I Structures to be those structures, systems and components important to plant safety. Until such studies are completed and made available, FOE et al. is unable to more responsively answer this interrogatory.

(b)(1) Those reports which FOE et al. is informed and believes were formally transmitted to the NRC by letters from the Applicants dated December 23, 1977 and March 10, 1978, respectively.

(2) The preliminary analysis covering safety implications of said cavities which FOE et al. is informed and believes was presented in an interim report submitted to R. H. Engleken (NRC Region V) by letter dated August 22, 1977, on behalf of applicants.

(3) Those engineering studies which FOE et al. is informed and believes are currently being performed on behalf of Applicants with respect to the dewatering well cavities and which studies are more completely identified in response to Interrogatory No. 2(d), below.

(4) Those materials pertaining to the SONGS 2 & 3 dewatering cavities which FOE et al. is informed and believes have been transmitted to Applicants by Bechtel Power Corporation or Woodward-Clyde Consultants or which have been prepared by Applicants. Said materials are described in "Appendix A" to "Response of Southern California Edison Company and San Diego Gas & Electric Company to Intervenors FOE, et al Interrogatories to Southern California Edison Company" and by this reference are incorporated herein.

(5) Those materials which pertain to any geologic studies

that have been made of the land area within a 100 mile arc of SONGS 2 & 3 and which materials FOE et al. is informed and believes are presently in the possession of Applicants. Said materials are described in "Appendix B" to "Response of Southern California Edison Company and San Diego Gas & Electric Company to Intervenor FOE, et al Interrogatories to Southern California Edison Company" and by this reference are incorporated herein.

(6) Those materials identified in response to Interrogatory 1(b), above.

(7) N.R.C. Release #79-91 and NUREG 0438, which pertain to seismic research programs.

(d) J. A. Barneich, Associate
Robert L. McNeill, Project Consultant
Woodward-Clyde Consultants
4000 W. Chapman Avenue
Orange, California 92668

Lucien G. Hersh, Assistant Project Engineer
Bechtel Power Corporation
P. O. Box 60860
Los Angeles, California 90060

FOE et al. has provided all the information presently in its possession with respect the the addresses, educational, and professional qualifications for each of those persons identified in its response to this interrogatory. The report on the impact of the cavities is not complete.

(e) (i),(ii),(iii) At the present time, FOE et al. has not determined whether it will call any of the above-identified persons as witnesses on this contention. It is anticipated that the above named individuals will at least be questioned under cross-examination. Since FOE et al. has not determined whether it will call any of the above-identified persons during this proceeding, FOE et al. is unable at this time to provide summaries of the views, positions, or proposed testimony of said persons.

INTERROGATORY NO. 3:

At the present time do you contend that the Applicants have not complied with 10 CFR, Part 50, Appendix E, regarding emergency plans, since because of the jurisdictional diversity of the several state and local agencies involved and their inadequate fundings and staffing, appropriate and coordinated emergency plans cannot be developed; and that an operating license should not be granted for SONGS, Units 2 and 3, because the various emergency response plans are so complex, overlapping, and difficult to implement that in the event of a nuclear accident the safety of persons in the surrounding areas will be imperiled? If so,

(a) State each and every fact upon which you base this contention;

(b) Identify each and every document or communication upon which you base this contention;

(c) Identify each and every event upon which you base this contention;

(d) Identify each and every person with knowledge of the factual basis or bases for this contention, or on whose writings,

opinions, or testimony you base this contention;

(e) Identify each and every person whom you expect to call as witness, expert or otherwise, at the hearing on this contention before the Nuclear Regulatory Licensing Board and as to each witness so identified, please provide the following information:

(i) State the precise subject matter on which the witness is expected to testify;

(ii) State the substance of the facts and opinions to which the witness is expected to testify;

(iii) Summarize the factual and theoretical bases as well as any other grounds, for each opinion to which the witness is expected to testify.

RESPONSE TO INTERROGATORY NO. 3:

3. Yes.

(a) and (c)

(1) 10 CFR Part 50, Appendix E requires that: "...the plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property." The emergency plans proposed by applicants do not meet this requirement in that:

(a) San Diego ODP does not have an adequate staff to handle an emergency situation at San Onofre.

(b) Facilities for monitoring and treating accident victims at San Diego County hospitals are inadequate.

(c) Facilities and manpower are insufficient to conduct on-site radiologic monitoring of beach-and-park users' contamination.

(d) The narrow roads in the parks north and south of the plants will become quickly congested in the event of an evacuation.

- (e) As Interstate 5 is the only major highway running near the plants, it too will become intolerably congested in the event of evacuation.
- (f) Evacuation of the cities within 25 miles south of the plants will be impossible.
- (g) The California Department of Parks and Recreation is not sufficiently staffed to handle an emergency situation.
- (h) Confusion exists between the State Department of Parks and Recreation and SCE as to which organization has the responsibility for initiating an evacuation.
- (i) The San Diego County Sheriff and the San Diego County OES have not coordinated their evacuation plans.
- (j) The California Department of Parks and Recreation considers its evacuation responsibilities to be at least partially independent from other participating agencies, thereby frustrating attempts at coordinating evacuation procedures.
- (k) The State Department of Parks and Recreation has no buses at its disposal which could aid in the evacuation of large numbers of beach and park users, thereby leaving evacuation to the use of foot and the individual automobile.
- (l) The Orange County OES did not participate in the hearings, thus hampering efforts at coordinating evacuation procedures.
- (m) The San Diego County OES has not conducted a fully coordinated exercise to test its evacuation procedures as is required by the June 1975 plan.
- (n) No assurances exist that evacuation of the low population zone can be effected in the event of an emergency.
- (o) Insufficient drill exercises have been conducted to test the

effectiveness of the emergency response plans.

(p) The drill exercise conducted on June 13, 1978 by Applicants was incomplete and inadequate since no evacuation of any kind was attempted.

(q) The passage of Proposition 13 renders invalid all local and state plans in that sufficient funding will be unavailable to effectively implement adequate response measures.

(r) Training programs to prepare nuclear plant and assist agency personnel to react in accordance with the emergency plans are inadequate.

(s) Measures or tests to assure availability and operability of SONGS 2 & 3 emergency response equipment have not been formulated.

(t) No agency has been designated with clear authority to function as the lead agency in the event of an emergency.

(u) No assurance exists that a lead agency will in fact assume responsibility for evacuation of the exclusion area, low population zone and the surrounding communities outside the low population zone.

(v) No assurances exist that assist agencies will follow the directions of the lead agency.

(w) The NRC has not approved the emergency plans as of this date.

(x) Under the EP, Applicant and at least two additional assist agencies have potentially conflicting authority to evacuate the SONGS site beach area.

(y) Under the EP, Applicants and at least five assist agencies have potentially conflicting authority to regulate the traffic control function inclusive of the low population zone.

(z) Under the EP, Applicants and at least three assist agencies

have potentially conflicting responsibility for radiological monitoring of evacuees.

(aa) The number of personnel trained in radiological monitoring and the number of radiological monitoring devices available in an emergency is:

1. Insufficient to protect the health, safety and welfare of the public;

2. Distributed extremely unevenly among potential assist agencies; and

3. Distributed primarily among agencies having no responsibility under the EP for radiological monitoring.

(bb) Insufficient assurances exist that assist agencies will in fact provide adequate services in the following areas:

1. Law enforcement.

2. Traffic control.

3. Fire prevention and control.

4. On-site medical services.

5. Off-site medical services and facilities.

(cc) No assurances exist under the EP and EPS that off-site assist agencies will be able to implement control measures to prevent or minimize ingestion of or exposure to contaminated materials by persons off-site.

(dd) No assurances exist as to the dissemination of public evacuation information due to the diversity of agencies involved and the lack of centralized responsibility.

(ee) Some emergency response plans may not have been designed to include potential nuclear accidents at site of SONGS 2 & 3.

(ff) The emergency plan allows for an inadequate number of on-site

physicians.

- (gg) The emergency plan has a vague concept of operating.
- (hh) Organization of the emergency plan is fragmented.
- (ii) There is an unclear relationship among state and local and assist agency response measures.
- (jj) The emergency plans provide for no identification of those responsible for evacuation in the event of an emergency.

(2) Persons in the surrounding areas include those on the beach and in the water in front of or near SONGS site, others in the low population zone, and all persons in communities outside the low population zone but within 25 miles of SONGS 2 & 3. The safety of these persons will be imperiled because:

- (a) They may not be warned in sufficient time of radiation danger so as to evacuate:
- (b) They may be unable to evacuate, even if warned in time, due to crowded conditions, traffic jams, clogged or impassible escape routes and roads, general panic, and unavailability of buses to limit vehicle evacuation of all beach users and other persons, resulting in extensive radiation exposure;
- (c) They may be injured or killed in an attempt to evacuate by means other than radiation such as vehicle accidents, hit-and-run etc.;
- (d) Lootings of evacuated homes and businesses may occur possibly involving armed intervention and resulting in injury or death.

(b.) Transcript of Hearings (Identified in 3.(d) below) held on August 28, 1978 and October 7, 1978.

The EP and EPS

L.A.times article dated 3-11-74 "Clear-Cut Accident Plan Lacking for San Onofre A-Plant"

Federal Response Plan For Peacetime Nuclear Emergencies, dated May 3, 1976.

Report to the Congress by the GAO dated 3-18-76 and titled: "Stronger Federal Assistance To States Needed For Radiation Emergency Response Planning" NUREG 75/111, Supplement 1.

Statement by Lynn Hicks entitled: "San Onofre Evacuation Report" dated August 1, 1976.

Statement of Dr. William D. Rowe, Deputy Assistant Administrator For Radiation Programs, Environmental Protection Agency, Before the Subcommittee on Energy and the Environment, Committee on Interior and Insular Affairs, House of Representatives, June 11, 1976.

(d) Mr. Robert Lacy, Deputy Director, San Diego ODP.

Mr. Donald L. Hamilton, Director, San Diego ODP.

Mr. Paul Muspratt, District Safety and Enforcement Specialist, State Parks.

Mr. Jack Kearns, State of California, OES

Mr. Robert Crommelin

Robert Crommelin and Associates

17017 Ventura Blvd.

Encino, California 91316

FOE et al. has provided all the information presently in its possession with respect to the addresses, educational, and professional qualifications for each of those persons identified above.

(e) (i), (ii), (iii) At the present time, FOE et al. has not determined which of the above-identified persons it intends to call as witnesses on this contention.

Since FOE et al. has not determined which of the above named per-

sons it intends to call as witnesses in this proceeding, FOE et al. is unable at this time to provide summaries of the views, positions, proposed testimony or the factual and theoretical bases, therefore, with respect to such persons. FOE et al. is informed and believes however, that the transcript of Hearings on Emergency Evacuation Plans Associated With Nuclear Powered Electric Generating Facilities held before the State Energy RESources Conservation and Development Commission, Docket No. 76-SIT - 1, at San Diego, on October 7, 1976, contains information responsive to this interrogatory.

INTERROGATORY NO. 4:

At the present time do you contend that the Applicants projection of fuel costs over the life of SONGS, Units 2 and 3 does not adequately account for escalation of uranium prices and, therefore, that the Applicants' cost benefit analysis is in error? If so,

(a) State each and every fact upon which you base this contention;

(b) Identify each and every document or communication upon which you base this contention;

(c) Identify each and every event upon which you base your contention;

(d) Identify each and every person with knowledge of the factual basis or bases for this contention, or on whose writings, opinion or testimony you base your contention;

(e) Identify each and every person whom you expect to call as a witness, expert or otherwise, in support of your contention at the hearing on this contention before the Nuclear Regulatory Commission Licensing Board and as to each expert so identified, please provide the following information:

(i) State the precise subject matter on which the witness is expected to testify:

(ii) State the substance of the facts and opinions to which the witness is expected to testify:

(iii) Summarize the factual and theoretical bases, as well as each opinion as well as any other grounds, to which the witness is expected to testify.

RESPONSE TO INTERROGATORY NO. 4:

4. Yes

(a) and (c)

(1) Applicants' cost/benefit analysis fails to provide consideration for the greatest possible escalation of uranium prices based on recent occurrences. Between 1973 and March, 1976, a period of approximately 3 years, uranium prices increased from \$7.00/pound to \$40.00/pound. Long-term uranium contracts are currently tied to market price at delivery or 7% per year escalation, whichever is greater. Therefore, the future price of uranium cannot be less than the present (1978) price plus 7% per year escalation.

SONGS 2 & 3 over an operating life of 30 years will require approximately 15,780 metric tons of uranium or 526 M.T. per year. Converted to pounds, this equals a uranium requirement of 1,159,630 pounds annually (1 M.T. = 2,204.62 pounds). At \$40.00/pound, the cost of one year's supply would be \$46,385,200. Using a "worst possible case" analysis, predicated on the 1973 to 1976 increase, the rate of escalation required in the cost/benefit analysis is 79% (the percent increase per year which resulted in the \$7.00 to \$40.00 price change from 1973 to 1976).

See Table I, below, for calculations. Using this rate of escalation over the 30 year operating life of SONGS 2 & 3 to account for a possible similar price increase over the operating life-span, the "worst possible case", the cost of the annual uranium requirement for the 30th year as well as the total aggregate uranium cost for 30 years, would reach astronomical proportions.

Assuming a 1981 start up and a uranium price of \$40.00/pound at that time (an unlikely assumption since the \$40.00/pound figure was the March, 1976 price), the cost of uranium in 1985, just 4 years later, will have risen to at least \$411 per pound. (See Table II for calculation). This would place the cost of SONGS 2 & 3 total uranium requirement for that year alone (1,159,630 pounds) at \$476,607,930 or over ten times greater than the total cost for 1981 (\$46,385,200). The possibility of these prohibitively high costs invalidate applicants' cost/benefit analysis as contained in the final EIR since that analysis did not use a "worst possible case" approach.

(2) FOE et al. is informed and believes that applicants have contracted only for partial uranium requirements for SONGS 2 & 3 operating life-span. Without contracts for the total aggregate uranium requirements for SONGS 2 & 3 for its operating life, no reasonable assurances exist that applicants will be able to obtain sufficient uranium at a price which will not invalidate the cost/benefit analysis.

TABLE I

URANIUM COST-PER-POUND INCREASE 1973-1976

RATE OF INCREASE CALCULATIONS

\$7.00	x	.79	=	5.53	+	7.00	=	\$12.53	- end of 1973
\$12.53	x	.79	=	9.90	+	12.53	=	\$22.43	- end of 1974
\$22.43	x	.79	=	17.72	+	22.43	=	\$40.15	- end of 1975 March, 1976

TABLE II

PROJECTED URANIUM COST-PER-POUND AT 79% ANNUAL RATE
OF INCREASE FOR 1981 - 1984

\$40.00	x	.79	=	31.60	+	40.00	=	\$71.60	- end of 1981
\$71.60	x	.79	=	56.56	+	71.60	=	\$128.16	- end of 1982
\$128.16	x	.79	=	101.25	+	128.16	=	\$229.41	- end of 1983
\$229.41	x	.79	=	181.23	+	229.41	=	\$410.64	- end of 1984

(b) Weekly Energy Report, March 1976.

Institutional Investor, October 1975.

"Realistic Uranium Energy Yields and Costs", monograph
by Ron Carstens and Robert Lamson; included herein as "Appendix I."

"The Economics of Nuclear Power", monograph by Leonard
F.C. Reichle, August 27, 1975.

"The Emerging Economics of Nuclear Power", monograph
by Robert D. Lamson.

ERDA Weekly Announcement, April 16, 1976.

Wall Street Journal, "Utilities Rap Westinghouse

Cancellation of Uranium Deliveries, Weigh Responses", dated 9-15-75.

"We May Find Ourselves Short of Uranium, Too", monograph by Ralph E. Lapp, Fortune, October, 1975.

Wall Street Journal article, "Uranium Drain", by William M. Carley, dated 6-7-76.

Materials identified in bibliography contained in monograph designated as "Appendix I" and attached to these responses.

Testimony of Stephen M. Moody, Director of Research, Council on Economic Priorities, before the California Legislature Assembly Committee on Energy and Diminishing Materials, December 3, 1975.

Contracts, if any, between Applicants and uranium suppliers if same can be obtained from Applicants.

Final Environmental Impact Statement for SONGS 2 & 3.

(d) Ron Carstens

Robert Lamson

David Snow of Mitchell-Hutchins, NYC

FOE et al. has provided all the information presently in its possession with respect to the above named persons.

(e) (i),(ii),(iii) At the present time, FOE et al has not determined which of the above-identified persons it intends to call as witnesses, if any, on this contention.

Since FOE et al. has not yet determined which of the above-

named persons it intends to present during this proceeding, FOE et al. is unable at this time to provide summaries of the views, positions, proposed testimony or the factual and theoretical bases, therefore, with respect to such persons. FOE et al. is informed and believes however, that the following citations contain information responsive to this interrogatory:

1. For Ron Carstens and Robert Lamson, refer to "Realistic Uranium Energy Yields and Costs" included with these responses as Appendix I.
2. For David Snow, refer to Institutional Investor, October, 1975.

APPENDIX I

REALISTIC URANIUM ENERGY YIELDS AND COSTS

by

Ron Carstens, Robert Lamson

Nuclear power plants have always been known to have high "front end" capital costs, and since 1970 the escalation in capital costs has posed an increasingly serious economic problem for nuclear power. However, nuclear power advocates in government and industry have attempted to counteract these high capital costs by emphasizing the "practically negligible" uranium fuel costs of nuclear power. The uranium fuel cost component of electricity produced from nuclear power has received scant attention outside of cost estimates for specific situations¹ and individual power plants.² In almost all cases, these "official" costs for the uranium fuel component have been around 3 mils per kwh, with recent figures put at 5 to 6 mils.^{3,4} Utility industry officials have been led to believe that this was the primary advantage of nuclear over coal power and offset nuclear's higher capital costs. However, there seems to be a lack of published operating data on which to base such fuel cost calculations, particularly electricity yield from uranium. On the other hand, there is a great deal of information published on expected or projected yields.^{1,4,12}

This investigation was undertaken to establish what uranium fuel cost component utilities could expect for a nuclear power plant in the near future, based upon actual operating data. All utilities operating nuclear power plants for more than five years were invited to submit their uranium fuel loading record, including dates of loading, amount of fuel charged and its enrichment. We obtained data from startup for five utilities (5,6,7,8,9) and the ten-year record of two other plants from ERDA.¹⁰ The total electrical generation for these plants from startup date to the latest fuel loading date was derived from data in

the Federal Government publication "Monthly Operating Plants Status Report" known as the "Gray Book." Utilizing the fuel loading record and its enrichment, the uranium oxide "yellowcake" required to fuel each plant was calculated from a material balance on the enrichment step, using uranium ores naturally occurring 0.711 wt% U²³⁵ in the feed and a tails assay of 0.3 wt%.^{1,4,11} The fuel charges used were the sum of the individual loadings charged to the plant from startup until the fuel cycle just prior to the last one submitted by the utility. In this way, the electricity generated from the last fuel load charged to the plant would be included to give maximum credit for generation from this last load. These overall electricity yields, as summarized in Table 1, were simply calculated by dividing the total electricity generated over the periods described by the net fuel charged converted to uranium yellowcake (100% U₃O₈ basis). The individual plant's yields were then averaged by weighting the yield with the operating life to give more weight to the plants operating the longest in order to de-emphasize the yield-dampening effect of the initial core loading. The average yield obtained was 12.36 MMkwh per short ton yellowcake, which is astonishingly low by previous statements, being less than 40% of the lowest previous official government and industry statements. In official Federal Government publications^{1,12} as well as private^{4,13} and industry³ manuscripts, the energy yield from uranium is represented as "unchallengeable and immutable" at around 32,600 Megawatt (thermal) days per metric ton uranium metal in the fuel. This calculates out to something over 32 MMkwh per short ton yellowcake over a ten-year operating period without reprocessing, depending upon reactor type, etc. Additionally, in 1970 the AEC stated that reactors yielded 34 MMkwh per short ton yellowcake, without reprocessing.¹⁴ Just last year, an ERDA official testified that light water nuclear reactors in the United States routinely contributed 32 MMkwh per

short ton yellowcake ¹⁵ to the United States energy needs (without reprocessing). Some have claimed over 60 MMkwh per short ton yellowcake as the energy yield.⁴ On the basis of the data revealed here, it appears that present generation light water reactors may use at least two-and-one-half times as much uranium fuel as has been heretofore assumed by Federal planners.

As can be noted in Table I, the electrical yields vary a great deal, with the highest being over twice the lowest yielding plant. Attempts were made to correlate these data with capacity factor, plant size, plant type, % enrichment, and between short and long-operating plants, all with no result. Capacity factor would be a logical correlating factor since the plants are charged with a designated amount of fuel and the rods are regularly changed even though the electrical output may be below design for various reasons. However, there is no correlation with any factors these authors could identify. We also considered the relatively brief operating time for the plants considered here (average life 7 years) with respect to the dampening effect of the initial core loading. However, using the Government's energy yield figures for the initial core and replacement loadings,¹² we calculated the yield difference between a plant operating seven years (average for this study) and those operating 15 years, or one-half the plant's expected operating life. The difference in yield obtained was only 3% and thus would not account for the differences revealed here. Meager published data on BWR²⁹ fuel rods performance would seem to be in agreement with this data. Actually, these electrical yields as derived here are high by 6% to 10% because no account was taken of transmission losses¹⁷ which are real due to the large and remote nature of these plants. Therefore, for a utility that is concerned with buying uranium yellowcake and delivering "billable" electricity to its customers, the

actual electrical yield based upon these operating data is well below 12 MMkwh per short ton yellowcake. This analysis, of necessity, did not include the effect of recycling uranium or plutonium as these are not commercially practical at present. There is considerable doubt if there ever will be commercial reprocessing and recycling.¹⁶ Even given the unlikely event of recycling becoming a commercial reality, it would at best increase the yield 20% to 25%¹² which may never be realized due to the doubtful economics of reprocessing and recycling.¹⁸ In any event, it is questionable that reprocessing and recycling can be operational fast enough to help the United States from exhausting domestic uranium reserves in the near future.

Utilizing the electrical yield derived herein, the official ERDA figures on proven uranium reserves,¹⁹ and the projected installation of nuclear plants,¹² the United States could theoretically run out of uranium fuel for its scheduled plants well before 1990 assuming no imports. Thus it is peculiar indeed that the nation is being asked to go nuclear in order to be self-sufficient in energy. In a day when the United States has problems with petrodollars and an Organization of Petroleum Exporting Countries, we can expect to have problems tomorrow with uranodollars and an Organization of Uranium Exporting Countries.

The next portion of this study considered the effect of this lowered electrical yield upon the fuel cost component of nuclear generated electricity. There are many costs associated with uranium fuel which are not considered in traditional cost calculations for individual utilities' plants. These associated costs--spent fuel reprocessing to ultimate waste management and subsidies on reactor development and fuel enrichment--have caused some nuclear proponents to seriously re-evaluate cost estimates.²⁰ However, for purposes of this discussion these costs are not considered here, and we restrict our analysis to the

fuel cost component strictly from the standpoint of an individual utility operating a nuclear fuel generating station which will be on stream in 1985. The components of this fuel cost reflect only the operations of fuel gathering and preparation in order to prepare the fuel rods for light water nuclear plants. These include the cost of uranium yellowcake itself, transportation and conversion to UF_6 for fuel enrichment, the enriching process (to allow the natural 0.711% U^{235} to be upgraded to about 3.2%, reversion to U_3O_8 and fabrication into fuel elements to be placed in a reactor.

The cost of yellowcake has undergone enormous increases in the past few years, from a market price of just 7\$/lb in 1973 to the present contract price of 40\$/lb.²⁰ Current long-term uranium contracts are written tied to market price at delivery or 7% per year escalation, whichever is greater. Therefore, the future price of uranium cannot be less than present prices (about 40\$/lb) plus 7% per year escalation. This yields a 1985 price of about 80\$/lb which is as low as a utility can expect to pay. Others have anticipated even higher prices,²² some well over 100\$/lb²³ for the mid 1980's. The uranium supply situation is so serious that some utilities have been forced to invest in uranium mines as a defense against further escalation.^{24,25} Further aggravating the situation will be the lower-than-expected electricity yields observed here.

At the enriching plant step, we can also see the effect of inflation and rising electricity prices on the tremendous amounts of power it takes to enrich the uranium. Even considering ERDA's heavily-subsidized operation and using tax-free TVA power, the Government charge for enriching has climbed from \$28.70/kgSWU in 1971 to the recently announced \$67.25/kgSWU²⁵ which is almost a 20% annual increase. Further cost increases will be forthcoming due to the increasing cost of electricity, lack of added

Government subsidy or private enriching plants, and the normal forces of inflation.

With an escalation rate of 7% per year for inflation, costs double every ten years.

Therefore, we estimated a 1985 enriching cost of \$135/kgSWU, which is probably on the low side given past and future expected electrical cost increases, the real costs of government subsidy, and/or a shortage of enriching capacity. The final step of re-conversion of UF_6 back to the oxide and fuel rod fabrication has been estimated at \$100/kgU,² but a realistic estimate puts the figure at \$125/kgU,²⁷ which yields an escalated figure for 1985 of \$250/kgU.

Combining these cost elements with the average operating electrical yield derived in Table I gives the uranium fuel costs in Table II. These 1985 basis costs total 19.8 mils per kwh just for the uranium fuel component alone into nuclear power plants. This is some 400% to 600% higher than previous estimates by government^{1,2,3,4} and industry.

These costs do not include nuclear fuel financing charges which will add at least 20% and as much as 50% to the Table II figure of 19.8 mils per kwh. Financing costs vary greatly and depend upon actual vs. expected fuel rod life, how much fuel reserve a utility likes to have and their financing costs. Any economic advantages which may come to pass from reprocessing or "breakthroughs" in enrichment technology will be completely overshadowed by these financing charges and by transmission line losses which were also not included. Therefore there is reasonable assurance that a utility in 1985 will have pay at least 20 mils per kwh for nuclear fuel costs alone.

It would appear, based upon this analysis, that the nuclear fuel costs pass-throughs of the 1980's will make those of the '70's seem low indeed. Furthermore the

highly touted fuel cost advantage of nuclear power will very soon turn out to be a disadvantage. Even if we escalate the present average U.S. price of coal (\$16.90/ton)²⁸ to 1985 (at 7% per year, yielding \$33.80/ton), and use an average energy yield of 3000 kwh/ton for coal, we can see that the 1985 fuel cost of coal power is only 11.3 mils per kwh, or 57% of the uranium fuel cost component in Table II. † The present lower charges for nuclear plant's fuel is evidently a short-lived utopia that will be shattered as we enter the 1980's.

TABLE I

SUMMARY OF ELECTRICITY YIELDS FROM OPERATING NUCLEAR POWER PLANTS

	1	2	3	4	5	6	7
Reactor	First Date of Commercial Operation	Latest date of fuel loading received from utility	Total uranium fuel charged to latest date, excluding last fuel load (metric tons)	Average wt% enrichment U235	Total yellowcake (100% U ₃ O ₈ required to fuel reactor, calculated from reactor fuel charge (short tons) ^a	Cumulative electrical production, startup to latest date of fuel loading, MM KWH	Gross energy yield, MM KWH per short ton yellowcake
Connecticut Yankee	1/68	8/73	152.9	3.64	1,637	27,400	16.75
Dresden I	7/60	9/71	139.2	1.88	695	10,700	15.40
Ginna	3/70	3/75	245.9	2.82	1,946	13,700	7.04
LaCrosse	9/69	8/75	15.5	3.63	169	1,290	7.63
Monticello	7/71	10/75	146.8	2.34	947	13,300	14.04
H.R. Robinson 2	3/71	12/75	140.6	2.64	1,042	19,850	19.02
Yankee-Rowe	8/60	9/71	111.6	4.20	1,378	12,300	8.93

Weighted average by length of operation 12.36

^a - Calculated from individual fuel loadings and enrichments supplied for each reactor and from enrichment section material balance at .3 wt% tails assay and 1.3 short tons 100% U₃O₈ per metric ton U fuel charged.

Note: Total uranium fuel, Col.3, and average % enrichment, Col.4, will not necessarily calculate out to Col.5 because of the non-linearity of the enrichment material balance function. Col.5 was calculated from actual individual fuel loadings received from the utilities, and Cols. 3 and 4 summarize their data for ease of presentation.

TABLE II
COST SUMMARY
URANIUM FUEL COST COMPONENT OF NUCLEAR ELECTRICITY
1985 BASIS

	Cost/Unit	Units/short ton yellowcake	Cost per short ton yellowcake	Mils/KWH ^d
100 % U ₃ O ₈ yellowcake	80\$/lb ^a	2,000	\$ 160,000	12.95
Transportation and conversion to UF ₆	7.30\$/lb U ^b	239	1,750	0.14
Enrichment	135\$/SWU ^e	413.7 ^c	55,850	4.52
UF ₆ reversion to U ₃ O ₈ , fabrication into fuel rods	250\$/kgU ^e	108.7	27,180	<u>2.20</u>
			TOTAL	<u>19.81 mils/kwh</u>

a - Present NUEXCO contract price escalated @ 7% per current contracts to 1985.

b - Approximate estimate includes \$2.86/lb U for conversion¹ and 27¢/lb yellowcake equivalent, for transportation to and from conversion and enrichment and final delivery, both escalated at 7% per year.

c - At average 3.2% enrichment, requiring 3.80 kg SWU for U fuel enrichment, and 9.2 short tons U₃O₈ per metric ton U.^{1,11}

d - At Table I average yields of 12.36 MMkwh per short ton U₃O₈ yellowcake.

e - Current market prices escalated to 1985 at 7% per year.

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a - Present NUEXCO contract price escalated @ 7% per current contracts to 1985.

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d - At Table I average yields of 12.36 MMkwh per short ton U₃O₈ yellowcake.

e - Current market prices escalated to 1985 at 7% per year.

BIBLIOGRAPHY

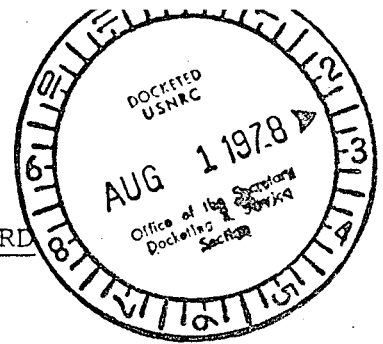
1. ERDA-52
2. Final Environmental Statements NUREG-7S/053, May 1975, Skagit Nuclear Power Project, Table 10.2
3. Talk given by Gordon Corey, Vice-chairman Commonwealth Edison, Nov. 17, 1975, at M.I.T., reported by Atomic Industrial Forum 12/8/75.
4. Appendix B, Nuclear Fuels Policy Paper-1976, The Atlantic Council of the U.S., Library of Congress Card No. 76-151-28.
5. Letter 12/10/75 from Jim Karalus, Northern States Power Company.
6. Letter 10/22/75 from George Fox, Northeast Utilities Service Company.
7. Letter 11/11/75 from Robert Mecrody, Rochester Gas and Electric Corporation.
8. Letter 11/3/75 from John Madgett, Dairyland Power Cooperative.
9. Letter 10/28/75 from Larry Smith, Carolina Power & Light Company.
10. Letter 8/19/75 from Frank Baranowski, Director, Nuclear Fuel Cycle, ERDA.
11. ORO-684, AEC Gaseous Diffusion Plant Operations.
12. WASH 1139, Table 8.
13. Paper from lecture in Japan by Manson Benedict, M.I.T. Nuclear Engineering, April 1975 (Fuel Cycles for Nuclear Reactors--Uranium Enrichment and Reprocessing, p. 1.5)
14. Letter from George Kavanaugh, General Manager for Reactors, AEC, to Senator Frank Moss 10/1/70.
15. Testimony of John Paterson, Chief Supply Evaluation Branch, ERDA, at NRC hearings, May 1975, on River Bend Nuclear Units 1 and 2, St. Francisville, LA.
16. Wall Street Journal, Feb. 17, 1976, page 1.
17. Testimony of P. Gans, Bonneville Power Administration in NRC hearings, Skagit Nuclear Project (June 1976).

(Continued)

18. M. Resnikoff, Expensive Enrichment, Environment, Vol. 17, No. 5, p. 28-35.
19. ERDA Weekly Announcements, April 16, 1976, 640,000 Tons Proven Reserves.
20. Weekly Energy Report, March 1, 1976.
21. Nuclear Exchange Corporation Quotations, Early 1976.
22. Bellingham Herald, Dec. 28, 1975, page 1, for Puget Sound Power & Light, Skagit Nuclear Project (83\$/lb).
23. David Snow of Mitchell-Hutchins, N.Y.C., October 1975, Institutional Investor.
24. Wall Street Journal, Jan. 19, 1976.
25. Syndicated Report of Commonwealth Edison uranium mine purchase, by Bruce Ingersol, Chicago Sun-Times.
26. ERDA Weekly Announcements, Mar. 5, 1976.
27. Private communication with Dr. R. Bardes, Exxon Nuclear, 4/23/76.
28. Federal Power Commission News, Mar. 4, 1976.
29. Nail, Stobbs, "The Nuclear Assurance Corporation Performance Program," Symposium Proceeding, Vienna, Oct. 8-12, 1973, International Atomic Energy Agency STI/PUB/35.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

Docket Nos. 50-361 OL
50-362 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "INTERVENORS FRIENDS OF THE EARTH, ET AL INTERROGATORIES TO SOUTHERN CALIFORNIA EDISON COMPANY, ET AL" have been served on the following by deposit in the United States mail, first class, this 28th day of July, 1978:

Frederic J. Coufal, Esq., Chairman
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Mr. Lester Kornblith, Jr., Member
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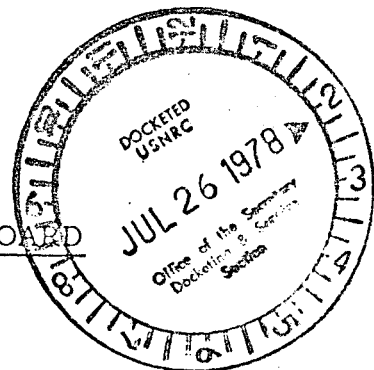
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Board Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section
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Washington, D.C. 20555

Richard J. Wharton

Richard J. Wharton
Attorney for Intervenors FOE ET AL

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



7/23/78

Docket Nos. 50-361 OL
50-362 OL


(San Onofre Nuclear Generating
Station, Units 2 and 3)

On July 24, 1978, the NRC Staff filed a motion requesting that the Atomic Safety and Licensing Board issue an order compelling Intervenor Friends of the Earth, et al. (FOE) to respond to the Staff interrogatories, served upon FOE on June 23, 1978.

Shortly after accomplishing service of the Staff's motion, counsel for FOE contacted counsel for the Staff and, after offering an explanation for FOE's failure to respond to the Staff's interrogatories on a timely basis, satisfactory to the Staff, committed to respond by July 31, 1978.

In view of counsel for FOE's commitment, the Staff perceives no need at this time to seek aid from the Licensing Board in the form of an order compelling FOE to respond to its interrogatories. Accordingly, the Staff hereby withdraws its motion to compel responses filed on July 24, 1978.

Respectfully submitted,

Respectfully submitted,

Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 25th day of July, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL</u>)	50-362 OL
)	
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Station, Units 2 and 3))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S WITHDRAWAL OF MOTION TO COMPEL FOE RESPONSES TO INTERROGATORIES" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 25th day of July, 1978:

Ivan W. Smith, Esq., Chairman*
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member*
Atomic Safety and Licensing Board
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Washington, D. C. 20555

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J. Calvin Simpson, Esq.
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5066 State Building
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David N. Barry III, Esq.
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David R. Pigott, Esq.
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Mrs. Lyn Harris Hicks
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Atomic Safety and Licensing
Board Panel*
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Washington, D. C. 20555

Atomic Safety and Licensing
Appeal Panel*
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section (3)
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555


Lawrence J. Chandler
Counsel for NRC Staff

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

RELATED CORRESPONDENCE

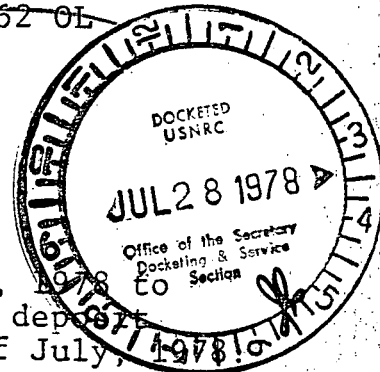
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

Docket Nos. 50-361 OL
50-362 OL



CERTIFICATE OF SERVICE

I hereby certify that a copy of my letter dated July 24, 1978, David R. Pigott, Esq. has been sent to the following by deposit in the United States mail, first class, this 24th day of July, 1978.

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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U. S. Nuclear Regulatory Commission
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Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Richard J. Wharton

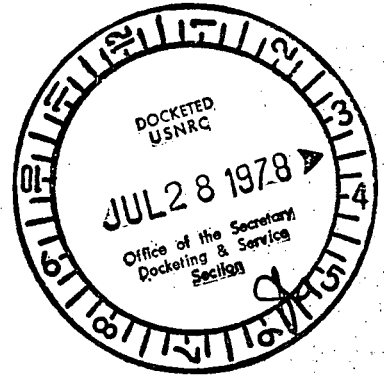
Richard J. Wharton
Attorney for Intervenor
FOE ET AL

RICHARD J. WHARTON
ATTORNEY AT LAW

RELATED CORRESPONDENCE

July 24, 1978

David R. Pigott, Esq.
Chickering & Gregory
Three Embarcadero Center
San Francisco, CA 94111

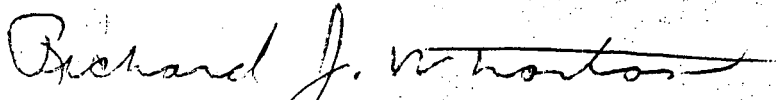


Dear Mr. Pigott:

This will confirm our telephone conversation of July 18, 1978 in which you graciously granted Intervenor, Friends of the Earth et al an extension to answer "Applicants First Set of Interrogatories" until July 28, 1978.

We thank you for your courtesy and cooperation.

Very truly yours,


Richard J. Wharton

RJW/ph
cc: Service List

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL.</u>)	50-362 OL
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(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

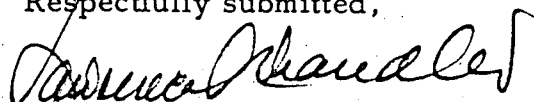
NRC STAFF'S WITHDRAWAL OF MOTION TO
COMPEL FOE RESPONSES TO INTERROGATORIES

On July 24, 1978, the NRC Staff filed a motion requesting that the Atomic Safety and Licensing Board issue an order compelling Intervenor Friends of the Earth, et al. (FOE) to respond to the Staff interrogatories, served upon FOE on June 23, 1978.

Shortly after accomplishing service of the Staff's motion, counsel for FOE contacted counsel for the Staff and, after offering an explanation for FOE's failure to respond to the Staff's interrogatories on a timely basis, satisfactory to the Staff, committed to respond by July 31, 1978.

In view of counsel for FOE's commitment, the Staff perceives no need at this time to seek aid from the Licensing Board in the form of an order compelling FOE to respond to its interrogatories. Accordingly, the Staff hereby withdraws its motion to compel responses filed on July 24, 1978.

Respectfully submitted,



Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 25th day of July, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL</u>)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

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Atomic Safety and Licensing Board
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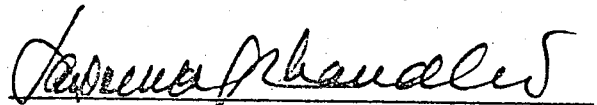
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Docketing and Service Section (3)
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555



Lawrence J. Chandler
Counsel for NRC Staff



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 24, 1978

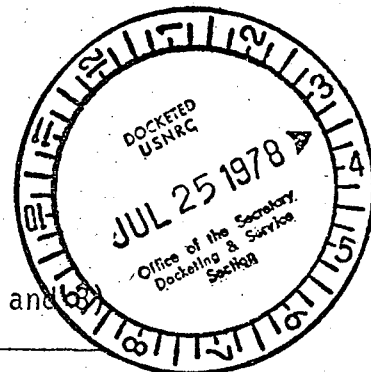
7/24/78

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
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Mr. Lester Kornblith, Jr., Member
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

In the Matter of
Southern California Edison Company, et al
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL



Gentlemen:

On July 20, 1978, the Staff received, by means of service by the Office of the Secretary of the Commission, a copy of GUARD's letter to the Board dated June 11, 1978. At the outset, we note that the letter appears to be misdated. In view of the references to the discovery requests served upon GUARD, the earliest of which was served by the Staff on June 23, 1978, the letter should properly have been dated July 11, 1978. The Staff further notes that GUARD should have anticipated that discovery requests were imminent; indeed, during a phone conversation with Mrs. Hicks on June 12, 1978, the likelihood of this and the time frame was made known.

While the 14 day period for responding to interrogatories is provided by regulation, 10 CFR §2.740b(b), a timely motion for an enlargement of the time could certainly have been filed (we calculate that the response date regarding the Staff's interrogatories to have been July 12, 1978). See 10 CFR §§2.740b(b) and 2.711. A prerequisite, though, for granting such extension of time is a showing of good cause. The Staff does not believe that GUARD's letter can fairly be construed as a motion for an extension of time or that it has demonstrated good cause for granting such an extension. However, in view of the status of this proceeding, the Staff will in this instance, voluntarily agree to extend the time for responses to its interrogatories until August 18, 1978.

We must point out that a party admitted to a Commission proceeding, in addition to the rights obtained, also assumes certain obligations, among

them, the responsibility to prevent unnecessary delay in the proceedings. Thus we expect that, in light of this voluntary extension to which the Staff will agree, no further requests for an extension of time will be necessary.

Sincerely,



Lawrence J. Chandler
Counsel for NRC Staff

cc: Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Rollin E. Woodbury
David N. Barry III, Esq.
James A. Beoletto, Esq.
David R. Pigott, Esq.
Samuel B. Casey, Esq.
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Mrs. Lyn Harris Hicks
David W. Gilman
Robert G. Lacy
Lawrence Q. Garcia, Esq.
Atomic Safety and Licensing
Board Panel
Atomic Safety and Licensing
Appeal Panel
Docketing and Service Section

yellow

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL.</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

NRC STAFF MOTION TO COMPEL RESPONSES TO
INTERROGATORIES SERVED UPON FOE, ET AL.

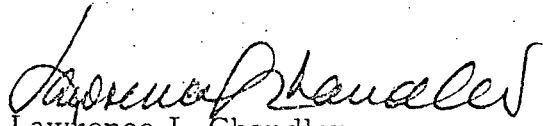
On June 23, 1978, the NRC Staff served upon Intervenor Friends of the Earth, et al. (FOE), its first set of interrogatories and request for production of documents, copy attached, pursuant to 10 CFR §§ 2.740b and 2.741. In accordance with 10 CFR §§ 2.740b(b) and 2.710, responses to the Staff's interrogatories were to be filed by July 12, 1978. To date, the Staff has not received FOE's responses thereto.

It is fundamental that discovery procedures are appropriately employed to provide parties with a mutual knowledge of the facts in each other's possession, relevant to their respective position on the issues in a proceeding so as to avoid causing the hearing process to be a "game of blind man's bluff." See Commonwealth Edison Company (Zion Station, Units 1 and 2), ALAB-196, 7 AEC 457, 460 et seq., (1974) and cases cited therein; and, Northern States Power Company, et al (Tyrone Energy Park, Unit 1) LBP-77-37, 5 NRC 1298, 1300-1301 (1977). The Staff considers its interrogatories to be reasonable and

relevant to the contentions admitted by the Atomic Safety and Licensing Board by its Memorandum and Order of January 27, 1978, and that they relate to FOE's claim or defense regarding each such contention. The Staff further believes that responses to its interrogatories are necessary for the complete and proper preparation of its case in this proceeding.

Accordingly, the Staff hereby moves that the Licensing Board enter an order compelling FOE to respond to each interrogatory served upon it by the Staff on June 23, 1978, not later than August 18, 1978.

Respectfully submitted,


Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 24th day of July, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
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SOUTHERN CALIFORNIA EDISON)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL.</u>)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

NRC STAFF INTERROGATORIES AND REQUEST FOR
DOCUMENTS TO FRIENDS OF THE EARTH, ET AL. - SET NO. 1

The NRC Staff hereby requests that the Intervenor, Friends of the Earth, et al. (FOE), pursuant to 10 CFR §§ 2.740b and 2.741, answer separately and fully, in writing under oath or affirmation, the following interrogatories within fourteen (14) days after service hereof and produce or make available for inspection and copying, all documentary material identified in the responses to interrogatories below. To the extent that copies of the documentary material cannot or will not be provided to the NRC Staff, access for inspection and copying should be provided at the offices of Richard Wharton, Esq., counsel for FOE, at a mutually agreeable time and date. Each response to the interrogatories below shall be under oath or affirmation of the individual(s) who contributed thereto. For all references requested in these interrogatories, identify them by author, title, date of publication and publisher if the reference is published, and if it is not published, identify the document by the author, title, the date it was written, the qualifications of the author relevant to this proceeding, and where a copy of the document may be obtained.

The interrogatories set forth below are to be considered the Intervenor's continuing obligation. Accordingly, if, after the Intervenor has answered these interrogatories, additional information comes to their attention with respect to one or more of the answers, the answers should be amended in a timely manner to provide such additional information.

FOE CONTENTION NO. 1^{*/}

- 1) The seismic design basis for SONGS 2 & 3 is inadequate to protect the public health and safety and does not comply with 10 CFR Part 100, Appendix A, in that the earthquake which could cause the maximum vibratory ground motion has not been assigned as the safe shutdown earthquake.
- 1-1.
 - a. Upon what person or persons do you rely to substantiate your case on contention no. 1?
 - b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
 - c. Identify which of the above persons you intend to call as witnesses on this contention in this proceeding.
 - d. Identify which of those persons identified in c. above you anticipate will appear voluntarily and which under subpoena.
- 1-2. Provide summaries of the views, positions or proposed testimony on contention no. 1 of all persons named in response to Interrogatory 1-1, that you intend to present during this proceeding.
- 1-3. What do you recommend as the proper seismic design basis for vibratory ground motion at the site?

*/

The wording of the contentions stated in these interrogatories conforms to the wording accepted by the Atomic Safety and Licensing Board in its Memorandum and Order dated January 27, 1978. The contentions have, however, been renumbered for convenience, to be in numerical order.

- 1-4. a. Identify the relevant geological and/or seismological data, including earthquake (or earthquakes), which contention no. 1 alleges has (or have) not been considered by the applicants and/or Staff in establishing the maximum vibratory ground motion?
- b. Describe, in both qualitative and quantitative terms, each item identified in your response to a. above.
- c. Describe, in both qualitative and quantitative terms, how the matters described in your responses to a. and b. above affect the seismic design basis for San Onofre Units 2 and 3.
- 1-5. State all bases, calculations, and references used (for example, trench logs, maps, well data, published works, etc.) that you intend to use during this proceeding to support the positions stated in response to Interrogatories 1-2, 1-3 and 1-4. Specify the interrogatory response number which the individual sources were used for. For calculations furnished, include, for example, the amount and direction of offset, the maximum vibratory ground motion, and the probability associated with the ground motion that you assume. The foregoing should be supplied with respect to both the Intervenor's direct presentation and to such evidence (oral or written or documentary) as Intervenor may attempt to adduce upon cross-examination of witnesses presented by applicants and/or NRC Staff.

- 1-6. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

FOE CONTENTION NO. 2

2) Whether the cavities caused by the Applicants' temporary dewatering of SONGS 2 & 3 site will have an unacceptable adverse effect on the capability of structures and equipment of the SONGS 2 & 3 to withstand the design basis seismic events.

- 2-1. a. Upon what person or persons do you rely to substantiate your case on contention no. 2?
- b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
- c. Identify which of the persons identified in a. you intend to call as witnesses on this contention in this proceeding.
- d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 2-2. Provide summaries of the views, positions, or proposed testimony on contention no. 2 of all persons named in response to Interrogatory 2-1, that you intend to present during this proceeding.
- 2-3. Describe the cavities caused by dewatering of the site giving dimensions and locations including proximity to specific, identified structures.

- 2-4. Identify specific structures, systems and components important to safety whose capability to withstand the design basis seismic event may be adversely and unacceptably affected considering the seismic and design bases that you postulate in response to Interrogatories 1-3 and 1-4 due to the existence of the cavities. In each case set forth the nature, extent and the type(s) of modification(s) that you recommend.
- 2-5. State the bases, calculations and references used for supporting the positions specified in response to Interrogatory 2-4 as to the following:
- a. Why each structure, system and component specified is important to plant safety.
 - b. Why each structure, system and component specified would be adversely and unacceptably affected.
- 2-6. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

- 2-7. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

FOE CONTENTION NO. 3

- 3) The Applicants have not complied with 10 CFR Part 50 Appendix E regarding emergency plans since because of the jurisdictional diversity of the several state and local agencies involved and their inadequate fundings and staffing, appropriate and coordinated emergency plans cannot be developed. An operating license should not be granted for SONGS 2 & 3 because the various emergency response plans are so complex, overlapping, and difficult to implement that in the event of a nuclear accident the safety of persons in the surrounding areas will be imperiled.

- 3-1. a. Upon what person or persons do you rely to substantiate your case on contention number 3?
- b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
- c. Identify which of the persons identified in a. you intend to call as witnesses on this contention in this proceeding.
- d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 3-2. a. Identify the state and/or local agencies involved in development and implementation of emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3, referred to in Contention no. 3.
- b. With which of the agencies identified in a. above have you had any communication (oral or written) in regard to this facility at any time? Provide the date(s) of any such communication(s).

- c. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in b. above, regarding the San Onofre facility.
 - d. Provide a copy of all written communications or summary of all oral communications with each agency identified in b. above.
- 3-3. Provide summaries of the views, positions, or proposed testimony on contention no. 3 of all persons named in response to Interrogatory 3-1 that you intend to present during this proceeding.
- 3-4. State the specific basis and references upon which the persons named in response to Interrogatory 3-1 rely to substantiate their views regarding contention no. 3.
- 3-5. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.
- 3-6. Identify all documentary or other material which you intend to offer as exhibits to this contention in this proceeding.

- 3-7. a. What amount of funding (in dollars) is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3?
- b. What amount of staffing is required to develop and implement appropriate and coordinated emergency plans as contemplated by Appendix E to 10 CFR Part 50?
- c. What is the basis for your response in a. and b. above?
- d. Define the terms "appropriate" and "coordinated" as used in this contention no. 3.
- e. Define the terms "complex", "overlapping", "difficult to implement" and "surrounding areas" as used in this contention no. 3 taking into consideration your responses to the above interrogatories.

3-8. Considering your responses to the interrogatories above, specifically state, in both qualitative and quantitative terms, the deficiencies in the emergency plans proposed by the applicant in this proceeding, for San Onofre Units 2 and 3.

3-9. Describe how "the safety of persons in the surrounding areas will be imperiled".

FOE CONTENTION NO. 4

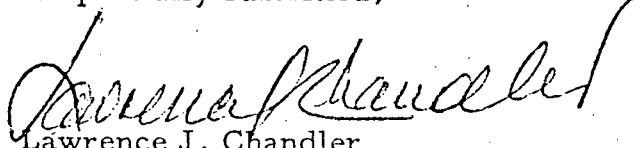
- 4) The Applicants' projection of fuel costs over the life of the plants does not adequately account for escalation of uranium prices and therefore the cost-benefit analysis is in error.

- 4-1. a. Upon what person or persons do you rely to substantiate your case on contention number 4?
- b. Provide the addresses, educational and professional qualifications of all persons named in a. above.
- c. Identify which of the persons identified in a. above you intend to call as witnesses on this contention in this proceeding.
- d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 4-2. Provide summaries of the views, positions, or proposed testimony on contention number 4 of all persons named in your response to Interrogatory 4-1 above, that you intend to present during this proceeding.
- 4-3. State the specific bases, calculations and references upon which the persons named in response to Interrogatory 4-1 rely to substantiate their position regarding contention number 4.
- 4-4. a. What rate of escalation do you believe should be used in calculating uranium prices for purposes of this contention number 4.?

- b. What is the basis for this rate? Provide all calculations and identify all references used in arriving at your response to a. above.
- 4-5. a. Utilizing the rate of escalation stated in your response to Interrogatory 4-4.a., what fuel cost do you calculate over the life of San Onofre, Units 2 and 3?
- b. Provide the bases and calculations for your response to Interrogatory 4-5.a. above.
- 4-6. Describe, in both qualitative and quantitative terms, the effect on the cost-benefit analysis for San Onofre Units 2 and 3, which the fuel cost you have calculated would have.
- 4-7. a. What is the maximum fuel cost which you calculate that would not affect the cost-benefit balance for San Onofre Units 2 and 3?
- b. What is the basis for this cost? Provide all calculations and identify all references used in arriving at your response to a. above.
- 4-8. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

4-9. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Lawrence J. Chandler".

Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 23rd day of June, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
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Atomic Safety and Licensing
Board Panel*
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Atomic Safety and Licensing
Appeal Panel*
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section (3)
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

A handwritten signature in cursive script, reading "Lawrence J. Chandler", written over a horizontal line.

Lawrence J. Chandler
Counsel for NRC Staff

July 24, 1978

Ivan W. Smith, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Director, Bodega Marine Laboratory
University of California
P.O. Box 247
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Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

In the Matter of
Southern California Edison Company, et al
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Gentlemen:

On July 20, 1978, the Staff received, by means of service by the Office of the Secretary of the Commission, a copy of GUARD's letter to the Board dated June 11, 1978. At the outset, we note that the letter appears to be misdated. In view of the references to the discovery requests served upon GUARD, the earliest of which was served by the Staff on June 23, 1978, the letter should properly have been dated July 11, 1978. The Staff further notes that GUARD should have anticipated that discovery requests were imminent; indeed, during a phone conversation with Mrs. Hicks on June 12, 1978, the likelihood of this and the time frame was made known.

While the 14 day period for responding to interrogatories is provided by regulation, 10 CFR §2.740b(b), a timely motion for an enlargement of the time could certainly have been filed (we calculate that the response date regarding the Staff's interrogatories to have been July 12, 1978). See 10 CFR §2.740b(b) and 2.711. A prerequisite, though, for granting such extension of time is a showing of good cause. The Staff does not believe that GUARD's letter can fairly be construed as a motion for an extension of time or that it has demonstrated good cause for granting such an extension. However, in view of the status of this proceeding, the Staff will in this instance, voluntarily agree to extend the time for responses to its interrogatories until August 18, 1978.

We must point out that a party admitted to a Commission proceeding, in addition to the rights obtained, also assumes certain obligations, among

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DATE ➤						

them, the responsibility to prevent unnecessary delay in the proceedings. Thus we expect that, in light of this voluntary extension to which the Staff will agree, no further requests for an extension of time will be necessary.

Sincerely,

Lawrence J. Chandler
Counsel for NRC Staff

cc: Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Rollin E. Woodbury
David N. Barry III, Esq.
James A. Beoletto, Esq.
David R. Pigott, Esq.
Samuel B. Casey, Esq.
Alan R. Watts, Esq.
Richard J. Wharton, Esq.
Mrs. Lyn Harris Hicks
David W. Gilman
Robert G. Lacy
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Board Panel
Atomic Safety and Licensing
Appeal Panel
Docketing and Service Section

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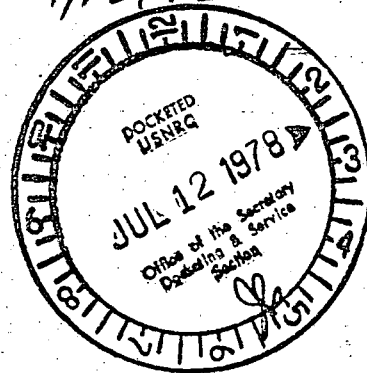
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-361-OL and 50-362-OL]

SOUTHERN CALIFORNIA EDISON COMPANY
SAN DIEGO GAS AND ELECTRIC COMPANY

(San Onofre Nuclear Generating Station,
Units 2 and 3)

NOTICE OF RECONSTITUTION OF BOARD



Frederic J. Coufal, Esq., was Chairman of the Atomic Safety and Licensing Board for the above proceeding. Because he is transferring to the Federal Communications Commission, where he will serve as an Administrative Law Judge, Mr. Coufal is unable to continue his service on this Board.

Accordingly, Ivan W. Smith, Esq., whose address is Atomic Safety and Licensing Board Panel, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, is appointed Chairman of this Board. Reconstitution of the Board in this manner is in accordance with Section 2.721 of the Commission's Rules of Practice, as amended.

James R. Yore
James R. Yore, Chairman
Atomic Safety and Licensing
Board Panel

Dated at Bethesda, Maryland
this 12th day of July 1978.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

(San Onofre Nuclear Generating)
Station, Unit Nos. 2 and 3))
)

Docket No.(s) 50-361
50-362

CERTIFICATE OF SERVICE

I hereby certify that I have this day ~~served~~ the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this

12th day of July 1978.

Peggy T. Downing
Office of the Secretary of the Commission

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

(San Onofre, Units 1 and 2))
)

Docket No.(s) 50-361
50-362

SERVICE LIST

Ivan W. Smith, Esq., Chairman
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Office of the Executive Legal Director
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Hal Thomas
Director
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124 Stear Street
San Francisco, California 94105

7/6/78
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Application of) Docket Nos. 50-361 OL
SOUTHERN CALIFORNIA EDISON COMPANY, et al.) 50-362 OL
(San Onofre Nuclear Generating Station,)
Units 2 and 3))
_____)

DESIGNATION FOR SERVICE

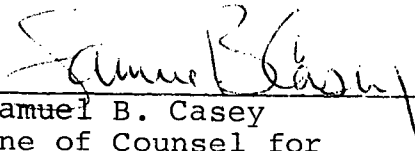
Pursuant to 10 C.F.R. §2.708(e), the following persons are designated as those on whom service may be made in the above-entitled matter on behalf of San Diego Gas & Electric Company:

David R. Pigott
Samuel B. Casey
Chickering & Gregory
Three Embarcadero Center
Twenty-Third Floor
San Francisco, California 94111

David W. Gilman
Robert G. Lacy
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, California 92112

This Designation for Service supersedes all previous designations for service in the above-entitled matter.

Executed at San Francisco, California, this 6th day of July, 1978.



Samuel B. Casey
One of Counsel for
San Diego Gas & Electric Company

CERTIFICATE OF SERVICE

I hereby certify that on the 6th day of July, 1978,
a copy of the foregoing DESIGNATION FOR SERVICE on behalf of San
Diego Gas & Electric Company in Nuclear Regulatory Commission
Docket Nos. 50-3610L and 50-3620L was served upon each of the
following by deposit in the United States mail, first-class postage
prepaid, addressed as follows:

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Atomic Safety and Licensing Board Panel
Director, Bodega Marine Laboratory
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P.O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member
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William W. Colston, Vice President
Project Management
San Diego Gas & Electric Company
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///

///

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2 J. Calvin Simpson, Esq.
3 Lawrence Q. Garcia, Esq.
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5 State of California
6 5066 State Building
7 San Francisco, California 94102

8 Alan R. Watts, Esq.
9 Rourke & Woodruff
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11 1055 North Main Street, Suite 1020
12 Santa Ana, California 92701

13 Richard J. Wharton, Esq.
14 4655 Cass Street
15 San Diego, California 92109

16 Lawrence J. Chandler, Esq.
17 Office of the Executive Legal Director
18 U.S. Nuclear Regulatory Commission
19 Washington, D.C. 20555

20 Mrs. Lyn Harris Hicks
21 GUARD
22 3908 Calle Ariana
23 San Clemente, California 92672

24 Atomic Safety and Licensing Board Panel
25 U.S. Nuclear Regulatory Commission
26 Washington, D.C. 20555

27 Mr. Lloyd von Haden
28 2089 Foothill Drive
Vista, California 92083

Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

DAVID R. PIGOTT
SAMUEL B. CASEY
CHICKERING & GREGORY

By Samuel B. Casey
One of Counsel for
Applicants Southern California
Edison Company and
San Diego Gas & Electric Company

June 30, 1978

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Member
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Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

In the Matter of Southern California Edison Company, et al.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Gentlemen:

In accordance with the Memorandum and Order of this Atomic Safety and Licensing Board dated January 27, 1978, this letter constitutes the NRC Staff discovery status report.

As of this date, the Staff has served its first set of interrogatories and requests for documents upon intervenors Friends of the Earth, et al. (FOE) and GUARD. Each set was served on June 23, 1978. To date, the Staff has not received any discovery request from FOE. Although not served as discovery requests, the Staff has received two sets of questions from GUARD. The first of these, submitted on December 23, 1977, was responded to on February 14, 1978; the second set was sent to the Staff on May 31, 1978 and responses are now being prepared. In neither instance do any of the questions bear on any issue in controversy in this proceeding and the Staff has advised GUARD that it would consider all of them objectionable as discovery requests. The Staff's willingness to respond to GUARD's questions thus far is with the express reservation of its rights to object to their use in the future in connection with this proceeding.

HEAR 4

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Regarding the schedule for completing discovery, the Staff may serve further discovery requests upon both intervenors depending on their responses to the first discovery request but at this time cannot advise the Board of any schedule for completing discovery.

As is evident, the schedule for completing and issuing the Staff's Safety Evaluation Report and Draft and Final Environmental Statements which you were advised of at the December 6, 1977 prehearing conference, has slipped. It is now anticipated that the Safety Evaluation Report will be issued in about November, 1978. Regarding the Draft Environmental Statement, the Staff has just received pertinent data from the applicants, the adequacy of which must be assessed before a date for issuance of this document can be estimated. Issuance of the Final Environmental Statement is, of course, dependent on issuance of the Draft and, accordingly, its date of issuance cannot be projected either.

Sincerely,

Lawrence J. Chandler
Counsel for NRC Staff

cc: Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
Rollin E. Woodbury, Esq.
David N. Barry III, Esq.
James A. Beoletto, Esq.
David R. Pigott, Esq.
Alan R. Watts, Esq.

Richard J. Wharton, Esq.
Mrs. Lyn Harris Hicks
Atomic Safety and Licensing
Board Panel
Atomic Safety and Licensing
Appeal Panel
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12 Rosemead, California 91770
13 Telephone: (213) 572-1900

14 Attorneys for Applicants,
15 Southern California Edison Company
16 and San Diego Gas & Electric Company

17 UNITED STATES OF AMERICA
18
19 NUCLEAR REGULATORY COMMISSION

20 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

21 In the Matter of	)	Docket Nos. 50-361 OL
	)	50-362 OL
22 SOUTHERN CALIFORNIA)	
23 EDISON COMPANY, et al.,	)	ADDENDUM TO DISCOVERY AND
	)	STATUS REPORT OF APPLICANTS
24 (San Onofre Nuclear Generat-	)	SOUTHERN CALIFORNIA EDISON
25 ing Station, Units 2 and 3)	)	COMPANY AND SAN DIEGO GAS
	)	& ELECTRIC COMPANY

26 On June 28, 1978, Southern California Edison Company
27 and San Diego Gas & Electric Company (hereafter "Applicants")
28 served their report entitled "DISCOVERY AND STATUS REPORT OF
APPLICANTS SOUTHERN CALIFORNIA EDISON AND SAN DIEGO GAS & ELECTRIC
COMPANY" (hereinafter "Report") in response to the Memorandum and
Order of January 27, 1978, requiring each party in the above-
captioned proceeding to report on or before June 30, 1978, the
status of its discovery and a proposed schedule for completing

1 its discovery.

2 In the Report Applicants stated they had not as yet
3 received any discovery request from any party in this proceeding.
4 Shortly after serving the Report and on the same date,
5 Applicants received by mail "INTERVENOR, FOE ET AL.
6 INTERROGATORIES TO SOUTHERN CALIFORNIA EDISON." Applicants
7 are presently in the process of preparing their response
8 to the interrogatories of FOE, ET AL.

9 DATED: June 30, 1978.

10 Respectfully submitted,

11 DAVID R. PIGOTT
12 SAMUEL B. CASEY
13 CHICKERING & GREGORY

14 DAVID N. BARRY
15 JAMES A. BEOLETTO
16 SOUTHERN CALIFORNIA EDISON COMPANY

17 By David R. Pigott
18 One of Counsel for Applicants
19 Southern California Edison
20 Company and San Diego Gas &
21 Electric Company
22
23
24
25
26
27
28

CERTIFICATE OF SERVICE

I hereby certify that on the 30th day of June, 1978, a copy of the foregoing ADDENDUM TO DISCOVERY AND STATUS REPORT OF APPLICANTS SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS & ELECTRIC COMPANY was served upon each of the following by deposit in the United States mail, first-class postage prepaid, addressed as follows:

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Atomic Safety and Licensing Board Panel
Director, Bodega Marine Laboratory
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Mr. Lester Kornblith, Jr., Member
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Vice President and General Counsel
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William W. Colston, Vice President
Project Management
San Diego Gas & Electric Company
P.O. Box 1831
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10 Office of the Executive Legal Director
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12 Washington, D.C. 20555

13 Mrs. Lyn Harris Hicks
14 GUARD
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16 San Clemente, California 92672

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18 U.S. Nuclear Regulatory Commission
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21 2089 Foothill Drive
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24 Office of the Secretary
25 U.S. Nuclear Regulatory Commission
26 Washington, D.C. 20555

27 DAVID R. PIGOTT
28 SAMUEL B. CASEY
CHICKERING & GREGORY

By David R. Pigott
One of Counsel for
Applicants Southern California
Edison Company and
San Diego Gas & Electric Company

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14 Attorneys for Applicants,
15 Southern California Edison Company
16 and San Diego Gas & Electric Company

17 UNITED STATES OF AMERICA

18 NUCLEAR REGULATORY COMMISSION

19 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

20 In the Matter of	)	Docket Nos. 50-361 OL
	)	50-362 OL
21 SOUTHERN CALIFORNIA)	
22 EDISON COMPANY, et al.,	)	FIRST SET OF INTERROGATORIES TO
23 (San Onofre Nuclear Generating)	)	INTERVENOR GROUPS UNITED AGAINST
24 Station, Units 2 and 3)	)	<u>RADIATION DANGER (GUARD)</u>
	)	[10 C.F.R. 2.740b]

25 TO INTERVENOR GROUPS UNITED AGAINST RADIATION DANGER (GUARD):

26 Applicants in the above-entitled action hereby request
27 that you answer the following set of interrogatories under oath, by
28 an officer or authorized agent, within fourteen (14) days of service
hereof, pursuant to Title 10, Part 2, Section 2.740b of the Code of
Federal Regulations.

1 INSTRUCTIONS AND DEFINITIONS

2 For purposes of these Interrogatories and your responses
3 thereto, the following definitions and instructions shall apply:

4 (a) The terms "GUARD", "you," or "your" refers to the
5 intervenor responding to these Interrogatories: Namely, Groups
6 United Against Radiation Danger.

7 (b) The term "Applicants" refers jointly to the propo-
8 nents of these Interrogatories, Southern California Edison Company
9 and the San Diego Gas & Electric Company.

10 (c) The term "person" means any natural person and any
11 private or public entity of any nature, including without limita-
12 tion, corporations, firms, partnerships, sole proprietorships,
13 associations, groups, organizations, trusts and estates.

14 (d) The term "document" means:

15 (1) The original, or

16 (2) If the original is not in your custody or under
17 your control, then a copy thereof.

18 (e) As used herein, unless the context otherwise requires,
19 the singular number includes the plural and the plural includes the
20 singular; the masculine gender includes the feminine, and the
21 feminine includes the masculine.

22 (f) When you are requested to "identify" any document,
23 you shall include in your response a description sufficient to
24 satisfy the "reasonable particularity" requirement found in Title
25 10, Part 2, Section 2.741(2)(c) of the Code of Federal Regulations,
26 including without limitation the following information with respect
27 thereto:

28 (1) The nature of the document;

- 1 (2) Its date;
- 2 (3) The names of its addressor(s) and addressee(s),
- 3 if any;
- 4 (4) The name(s) of the person(s) who prepared it;
- 5 (5) The name(s) and address(es) of the present
- 6 custodian(s) of the original and any copies thereof; and
- 7 (6) A summary of its contents.

8 In lieu of providing the information specified in Paragraph (f),

9 Items (1)-(6), you may attach to your responses to these Interroga-

10 tories a true copy of such document, identifying the Interrogatory

11 to which it is responsive and stating in your answer only such of

12 the information specified in Paragraph (f), Items (1)-(6) as does

13 not clearly appear on the face of such document.

14 If you claim a document is privileged or attorneys' work

15 product, describe the same generally and state all facts upon which

16 you base the claim of privilege or the claim such document consti-

17 tutes attorneys' work product.

18 (g) When you are requested to "identify" any person, you

19 shall set forth the full name and last known business address,

20 residence address, and employer of such person you are asked to

21 identify.

22 (h) The term "expert" refers to a person who by virtue

23 of his knowledge, skill, experience, training or education has

24 acquired a scientific, technical or specialized knowledge which can

25 assist the Nuclear Regulatory Commission Licensing Board in under-

26 standing the evidence or determining a fact, opinion, or scientific

27 theory relevant to an issue in this proceeding.

28 (i) When you are requested to "identify" an "expert" as

1 that latter term is defined in Paragraph (h) above, you shall set
2 forth the full name and last known business address, residence
3 address, academic affiliations, and present employer of each such
4 "expert" you are asked to identify.

5 (j) In answering these Interrogatories, you shall furnish
6 all information available to you, your respective agents, employees,
7 investigators, representatives and attorneys, and not merely such
8 information as is known from personal knowledge.

9 (k) The term "SONGS" refers to the San Onofre Nuclear
10 Generating Station.

11 INTERROGATORIES

12 INTERROGATORY NO. 1:

13 At the present time, do you contend that Applicants have
14 not complied with 10 CFR, Part 50, Appendix E regarding emergency
15 plans since because of the inadequate funding and staffing of the
16 several state and local agencies involved appropriate and coordi-
17 nated emergency plans cannot be developed? If so,

18 (a) State each and every fact upon which you base this
19 contention;

20 (b) Identify each and every document or communication
21 upon which you base this contention;

22 (c) Identify each and every event upon which you base
23 this contention;

24 (d) Identify each and every person with knowledge of the
25 factual basis or bases for this contention, or on whose writings,
26 opinions, or testimony you base this contention;

27 (e) Identify each and every person whom you expect to
28 call as a witness, expert or otherwise, at the hearing on

1 this contention before the Nuclear Regulatory Commission
2 Licensing Board and as to each potential witness so identified,
3 please provide the following information:

4 (i) State the precise subject matter on which the
5 witness is expected to testify;

6 (ii) State the substance of the facts and opinions
7 to which the witness is expected to testify;

8 (iii) Summarize the factual and theoretical bases as
9 well as any other grounds, for each opinion to which the
10 witness is expected to testify.

11 INTERROGATORY NO. 2:

12 At the present time do you contend that as a consequence
13 of increases in freeway use in recent years and the influx of
14 transient and resident individuals into the exclusion area and low
15 population zone, there is no longer assurance that effective arrange-
16 ments can be made to control traffic or that there is a reasonable
17 probability protective measures could be taken on behalf of the
18 individuals in these areas including, if necessary, evacuation,
19 particularly considering the unique geographic constraints in these
20 areas; thus, Applicants do not comply with 10 CFR, Section 100.3(a)
21 or (b)? If so,

22 (a) State each and every fact upon which you base this
23 contention;

24 (b) Identify each and every document or communication
25 upon which you base this contention;

26 (c) Identify each and every event upon which you base
27 this contention;

28 (d) Identify each and every person with knowledge of the

1 factual basis or bases for this contention, or on whose writings,
2 opinions, or testimony you base this contention;

3 (e) Identify each and every person whom you expect to
4 call as a witness, expert or otherwise, at the hearing on
5 this contention before the Nuclear Regulatory Commission
6 Licensing Board and as to each witness so identified, please
7 provide the following information:

8 (i) State the precise subject matter on which the
9 witness is expected to testify;

10 (ii) State the substance of the facts and opinions
11 to which the witness is expected to testify;

12 (ii) Summarize the factual and theoretical bases
13 as well as any other grounds, for each opinion to which the
14 witness is expected to testify.

15 INTERROGATORY NO. 3:

16 At the present time do you contend that the cavities
17 caused by the Applicants' dewatering of the SONGS, Units 2 and 3,
18 site will have an unacceptable adverse effect on the capability
19 of structures and equipment for SONGS, Units 2 and 3 to withstand
20 the design basis seismic events? If so,

21 (a) State each and every fact upon which you base this
22 contention;

23 (b) Identify each and every document or communication
24 upon which you base this contention;

25 (c) Identify each and every event upon which you base
26 this contention;

27 (d) Identify each and every person with knowledge of
28 the factual basis or bases for this contention, or on whose

1 writings, opinion, or testimony you base this contention;

2 (e) Identify each and every person whom you expect to
3 call as a witness, expert or otherwise, at the hearing on
4 this contention before the Nuclear Regulatory Commission
5 Licensing Board; and as to each potential witness so identified
6 provide the following information:

7 (i) State the precise subject matter on which the
8 witness is expected to testify;

9 (ii) State the substance of the facts and opinions
10 to which the witness is expected to testify;

11 (iii) Summarize the factual and theoretical bases,
12 as well as any other grounds, for each opinion to which the
13 witness is expected to testify.

14

15 Dated: June 28, 1978.

16

17

DAVID R. PIGOTT
SAMUEL B. CASEY
CHICKERING & GREGORY

18

19

DAVID N. BARRY III
JAMES A. BEOLETTO
SOUTHERN CALIFORNIA EDISON COMPANY

20

21

By David R. Pigott
David R. Pigott
One of Counsel for Applicants

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11 UNITED STATES OF AMERICA

12 NUCLEAR REGULATORY COMMISSION

13
14 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD
15

16 In the Matter of	)	Docket Nos. 50-361 OL
	)	50-362 OL
17 SOUTHERN CALIFORNIA)	
EDISON COMPANY, et al.,	)	DISCOVERY AND STATUS REPORT OF
18 (San Onofre Nuclear Generat-	)	APPLICANTS SOUTHERN CALIFORNIA
19 ing Station, Units 2 and 3)	)	EDISON COMPANY AND SAN DIEGO
	)	<u>GAS & ELECTRIC COMPANY</u>
20)	

21 Southern California Edison Company and San Diego Gas &
22 Electric Company (hereafter "Applicants") submit this report in
23 response to the Memorandum and Order of January 27, 1978, requir-
24 ing each party in the above-captioned proceeding to report on or
25 before June 30, 1978, the status of its discovery and a proposed
26 schedule for completing its discovery.

27 As of the date of this filing, Applicants have not
28 received any discovery request from any party in this proceeding.

1 Applicants' are now preparing their case for issuance
2 of operating licenses for San Onofre Nuclear Generating Station,
3 Units 2 and 3. The preparation of Applicants' direct case does
4 not require discovery from any other party at this time.

5 As a part of its overall preparation for hearing,
6 Applicants, on this date, have served interrogatories on the
7 intervenors in this proceeding. The primary purpose of such
8 interrogatories is to elicit a specific articulation of the
9 precise bases for each of the intervenors' contentions, and to
10 discover the documents and witnesses each intervenor will rely on
11 at hearing. Depending on the answers to Applicants' interrogatories
12 to the intervenors, Applicants may engage in additional discovery.

13 Applicants are aware of the possibility of summary
14 disposition of contentions in nuclear licensing proceedings. In
15 order to facilitate this licensing proceeding, Applicants may
16 move for summary disposition well before the hearings in this
17 matter if it appears that as to a particular contention there is
18 no genuine issue as to a material fact and that Applicants are
19 entitled to a decision on that contention as a matter of law.

20 DATED: June 28, 1978.

21
22 Respectfully submitted,

23 DAVID R. PIGOTT
24 SAMUEL B. CASEY
CHICKERING & GREGORY

25 DAVID N. BARRY
26 JAMES A. BEOLETTO
SOUTHERN CALIFORNIA EDISON COMPANY

27 By David R. Pigott
28 One of Counsel for Applicants
Southern California Edison Company
and San Diego Gas & Electric Company

CERTIFICATE OF SERVICE

I hereby certify that on the 28th day of June, 1978,
a copy of the foregoing DISCOVERY AND STATUS REPORT OF APPLICANTS
SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS & ELECTRIC
COMPANY was served upon each of the following by deposit in the
United States mail, first-class postage prepaid, addressed as
follows:

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Atomic Safety and Licensing Board Panel
Director, Bodega Marine Laboratory
University of California
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24 San Diego Gas & Electric Company
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11 UNITED STATES OF AMERICA
12 NUCLEAR REGULATORY COMMISSION
13

14 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD
15

16 In the Matter of	)	Docket Nos. 50-361 OL
	)	50-362 OL
17 SOUTHERN CALIFORNIA)	
EDISON COMPANY, et al.,	)	FIRST SET OF INTERROGATORIES
18 (San Onofre Nuclear Generat-	)	TO INTERVENORS FRIENDS OF THE
19 ing Station, Units 2 and 3)	)	EARTH, MR. AND MRS. AUGUST
	)	CARSTENS, MR. AND MRS. LLOYD
20	)	VON HADEN, MR. DONALD MAY,
	)	AND MRS. DONIS DAVEY

21 [10 C.F.R. §§ 2.740b]

22 TO INTERVENORS FRIENDS OF THE EARTH, MR. AND MRS. AUGUST
CARSTENS, MR. AND MRS. LLOYD VON HADEN, AND MRS. DONIS DAVEY
23 AND THEIR ATTORNEY OF RECORD:

24 Applicants in the above-entitled action hereby request
25 that you answer the following set of interrogatories under oath,
26 by an officer or authorized agent, within fourteen (14) days of
27 service hereof, pursuant to Title 10, Part 2, Section 2.740b of
28 the Code of Federal Regulations.

1 INSTRUCTIONS AND DEFINITIONS

2 For purposes of these Interrogatories and your responses
3 thereto, the following definitions and instructions shall apply:

4 (a) The terms "FOE, et al.," "you," or "your" refers
5 jointly to the intervenors responding to these Interrogatories:
6 Namely, Friends of the Earth, Mr. and Mrs. August Carstens, Mr.
7 and Mrs. Lloyd Von Haden, and Mrs. Donis Davey.

8 (b) The term "Applicants" refers jointly to the propo-
9 nents of these Interrogatories, Southern California Edison Company
10 and the San Diego Gas & Electric Company.

11 (c) The term "person" means any natural person and any
12 private or public entity of any nature, including without limita-
13 tion, corporations, firms, partnerships, sole proprietorships,
14 associations, groups, organizations, trusts and estates.

15 (d) The term "document" means:

16 (1) The original, or

17 (2) If the original is not in your custody or
18 under your control, then a copy thereof.

19 (e) As used herein, unless the context otherwise
20 requires, the singular number includes the plural and the plural
21 includes the singular; the masculine gender includes the feminine,
22 and the feminine includes the masculine.

23 (f) When you are requested to "identify" any document,
24 you shall include in your response a description sufficient to
25 satisfy the "reasonable particularity" requirement found in Title
26 10, Part 2, Section 2.741(2)(c) of the Code of Federal Regulations,
27 including without limitation the following information with
28 respect thereto:

- 1 (1) The nature of the document;
- 2 (2) Its date;
- 3 (3) The names of its addressor(s) and addressee(s),
4 if any;
- 5 (4) The name(s) of the person(s) who prepared it;
- 6 (5) The name(s) and address(es) of the present
7 custodian(s) of the original and any copies thereof; and
- 8 (6) A summary of its contents.

9 In lieu of providing the information specified in Paragraph (f),
10 Items (1)-(6), you may attach to your responses to these Interroga-
11 tories a true copy of such document, identifying the Interrogatory
12 to which it is responsive and stating in your answer only such of
13 the information specified in Paragraph (f), Items (1)-(6) as does
14 not clearly appear on the face of such document.

15 If you claim a document is privileged or attorneys'
16 work product, describe the same generally and state all facts upon
17 which you base the claim of privilege or the claim such document
18 constitutes attorneys' work product.

19 (g) When you are requested to "identify" any person,
20 you shall set forth the full name and last known business address,
21 residence address, and employer of such person you are asked to
22 identify.

23 (h) The term "expert" refers to a person who by virtue
24 of his knowledge, skill, experience, training or education has
25 acquired a scientific, technical or specialized knowledge which
26 can assist the Nuclear Regulatory Commission Licensing Board in
27 understanding the evidence or determining a fact, opinion, or
28 scientific theory relevant to an issue in this proceeding.

1 (i) When you are requested to "identify" an
2 "expert" as that latter term is defined in Paragraph (h)
3 above, you shall set forth the full name and last known
4 business address, residence address, academic affiliations,
5 and present employer of each such "expert" you are asked to
6 identify.

7 (j) In answering these Interrogatories, you shall
8 furnish all information available to you, your respective
9 agents, employees, investigators, representatives and attorneys,
10 and not merely such information as is known from personal
11 knowledge.

12 (k) The term "SONGS" refers to the San Onofre Nuclear
13 Generating Station.

14 INTERROGATORIES

15 INTERROGATORY NO. 1:

16 At the present time do you contend that the seismic
17 design basis for SONGS Units 2 and 3 is inadequate to protect the
18 public health and safety and does not comply with 10 CFR, Part
19 100, Appendix A, in that the earthquake which could cause the
20 maximum vibratory ground motion has not been assigned as the safe
21 shutdown earthquake? If so,

22 (a) State each and every fact upon which you base this
23 contention;

24 (b) Identify each and every document or communication
25 upon which you base this contention;

26 (c) Identify each and every event upon which you base
27 this contention;

28 (d) Identify each and every person with knowledge of

1 the factual basis or bases for this contention, or on whose
2 writings, opinions, or testimony you base this contention;

3 (e) Identify each and every person whom you expect to
4 call as witness, expert or otherwise, at the hearing on this
5 contention before the Nuclear Regulatory Commission Licensing
6 Board; and as to each potential witness so identified, provide
7 the following information:

8 (i) State the precise subject matter on which the
9 witness is expected to testify;

10 (ii) State the substance of the facts and opinions
11 to which you expect the witness to testify; and

12 (iii) Summarize the factual and theoretical bases,
13 as well as any other grounds, for each opinion to which the
14 witness is expected to testify.

15 INTERROGATORY NO. 2:

16 At the present time do you contend that the cavities
17 caused by the Applicants' dewatering of the SONGS, Units 2 and 3,
18 site will have an unacceptable adverse effect on the capability
19 of structures and equipment for SONGS, Units 2 and 3 to withstand
20 the design basis seismic events? If so,

21 (a) State each and every fact upon which you base this
22 contention;

23 (b) Identify each and every document or communication
24 upon which you base this contention;

25 (c) Identify each and every event upon which you base
26 this contention;

27 (d) Identify each and every person with knowledge of
28 the factual basis or bases for this contention, or on whose

1 writings, opinion, or testimony you base this contention;

2 (e) Identify each and every person whom you expect to
3 call as a witness, expert or otherwise, at the hearing on
4 this contention before the Nuclear Regulatory Commission
5 Licensing Board; and as to each potential witness so identified
6 provide the following information:

7 (i) State the precise subject matter on which the
8 witness is expected to testify;

9 (ii) State the substance of the facts and opinions
10 to which the witness is expected to testify;

11 (iii) Summarize the factual and theoretical bases,
12 as well as any other grounds, for each opinion to which the
13 witness is expected to testify.

14 INTERROGATORY NO. 3:

15 At the present time do you contend that the Applicants
16 have not complied with 10 CFR, Part 50, Appendix E, regarding
17 emergency plans, since because of the jurisdictional diversity of
18 the several state and local agencies involved and their inadequate
19 fundings and staffing, appropriate and coordinated emergency
20 plans cannot be developed; and that an operating license should
21 not be granted for SONGS, Units 2 and 3, because the various
22 emergency response plans are so complex, overlapping, and difficult
23 to implement that in the event of a nuclear accident the safety
24 of persons in the surrounding areas will be imperiled? If so,

25 (a) State each and every fact upon which you base this
26 contention;

27 (b) Identify each and every document or communication
28 upon which you base this contention;

1 (c) Identify each and every event upon which you base
2 this contention;

3 (d) Identify each and every person with knowledge of
4 the factual basis or bases for this contention, or on whose
5 writings, opinions, or testimony you base this contention;

6 (e) Identify each and every person whom you expect to
7 call as a witness, expert or otherwise, at the hearing on this
8 contention before the Nuclear Regulatory Licensing
9 Board and as to each witness so identified, please provide
10 the following information:

11 (i) State the precise subject matter on which the
12 witness is expected to testify;

13 (ii) State the substance of the facts and opinions
14 to which the witness is expected to testify;

15 (iii) Summarize the factual and theoretical bases as
16 well as any other grounds, for each opinion to which the
17 witness is expected to testify.

18 INTERROGATORY NO. 4:

19 At the present time do you contend that the Applicants
20 projection of fuel costs over the life of SONGS, Units 2 and 3
21 does not adequately account for escalation of uranium prices and,
22 therefore, that the Applicants' cost benefit analysis is in
23 error? If so,

24 (a) State each and every fact upon which you base this
25 contention;

26 (b) Identify each and every document or communication
27 upon which you base this contention;

28 (c) Identify each and every event upon which you base

1 your contention;

2 (d) Identify each and every person with knowledge of
3 the factual basis or bases for this contention, or on whose
4 writings, opinion or testimony you base your contention;

5 (e) Identify each and every person whom you expect to
6 call as a witness, expert or otherwise, in support of your
7 contention at the hearing on this contention before the Nuclear
8 Regulatory Commission Licensing Board and as to each expert so
9 identified, please provide the following information:

10 (i) State the precise subject matter on which the
11 witness is expected to testify;

12 (ii) State the substance of the facts and opinions
13 to which the witness is expected to testify;

14 (iii) Summarize the factual and theoretical bases,
15 as for each opinion as well as any other grounds, to which
16 the witness is expected to testify.

17

18 DATED: June 28, 1978.

19

20

DAVID R. PIGOTT
SAMUEL B. CASEY
CHICKERING & GREGORY

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SOUTHERN CALIFORNIA EDISON COMPANY

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By David R. Pigott
David R. Pigott
One of Counsel for Applicants

26

27

28

CERTIFICATE OF SERVICE

I hereby certify that on the 28th day of June, 1978, a copy of the foregoing FIRST SET OF INTERROGATORIES TO INTERVENORS FRIENDS OF THE EARTH, MR. AND MRS. AUGUST CARSTENS, MR. AND MRS. LLOYD VON HADEN, MR. DONALD MAY, AND MRS. DONIS DAVEY was served upon each of the following by deposit in the United States mail, first-class postage prepaid, addressed as follows:

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Director, Bodega Marine Laboratory
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One of Counsel for
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Edison Company and
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6/26/78

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSIONBEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
ET AL.)Docket Nos. 50-361 OL
50-362 OL(San Onofre Nuclear Generating Station,)
Units 2 and 3))INTERVENOR, FOE ET AL
INTERROGATORIES TO SOUTHERN CALIFORNIA EDISON

Intervenors Friends of the Earth, et al, requests that the Southern California Edison Company answer under oath, pursuant to 10 C.F.R. 2.7406, the following interrogatories within 14 days of service thereof. In answering these interrogatories, you are required to furnish such information as is available to you, including information in the possession of your attorneys and investigators for your attorneys.

1. Please identify the person or persons answering these interrogatories by stating name, date of birth, occupation, residence address, business address, and under what authority you are answering these interrogatories.
2. Please state the office you hold with the applicant, Southern California Edison, et al.
3. State whether any engineering studies, geologic studies, or other investigations have been performed on the capability of structures and equipment of SONGS 2 & 3 to withstand the design basis seismic events in light of the cavities resulting from dewatering.

4. If your answer to the foregoing interrogatory is in the affirmative, state:

- a.) the name, address, and capacity and occupation of each person making such engineering studies, geologic studies or other investigations;
- b.) the date or dates of such studies or investigations;
- c.) whether any reports of such person or persons were reduced to writing;
- d.) in whose possession or custody such reports presently repose; and
- e.) whether you will make such reports available to intervenors to inspect and copy without the necessity of a formal motion to produce.

5. State whether your representatives, agents, servants or employees have prepared any letters, telegrams, interoffice memoranda, photographs, videotape, diagrams, maps or charts pertaining to the dewatering cavities.

6. If your answer to the foregoing interrogatory is in the affirmative, state:

- a.) when and by whom the above-described documents were prepared, taken, produced or drawn;
- b.) where said documents are now located;
- c.) where the negatives of such photographs or videotape, if any, are now located;
- d.) whether any of the said documents are presently in the possession of your attorney.

7. State whether any geologic studies have been made of the ocean floor and substratum within a 100 mile arc of the San Onofre Nuclear facility to determine the occurrence,

magnitude, and extent of any earthquake or fault not heretofore considered or known at the time the current seismic design basis for SONGS 2 & 3 was established.

8. If your answer to the foregoing interrogatory is in the affirmative, state:

- a.) the name, address, and capacity and occupation of each person making such geologic studies;
- b.) the date or dates of such studies;
- c.) whether any reports of such studies were reduced to writing;
- d.) in whose possession or custody such reports presently repose;
- e.) whether you will make such reports available to intervenors to inspect and copy without the necessity of a formal motion to produce;
- f.) whether any faults have been identified as a consequence of said geologic studies, and if so, at what distance from the coast and in what direction do these faults lie;
- g.) whether any faults extend to the coastal land area; and if so, at what distance from the San Onofre nuclear facility are such landward fault extensions located; and
- h.) whether any earthquakes have been identified as a consequence of said geologic studies, and if so, state the date and magnitude of each such earthquake.

9. State whether your representatives, agents, servants, or employees have prepared any letters, telegrams, interoffice memoranda, photographs, videotape, diagrams, maps or charts

pertaining to the above-described geologic studies of the ocean floor and substratum.

10. If your answer to the foregoing interrogatory is in the affirmative, state:

- a.) when and by whom the above-described documents were prepared, taken, produced or drawn;
- b.) where said documents are now located;
- c.) where the negatives of such photographs or videotapes, if any, are now located;
- d.) whether any of said documents are presently in the possession of your attorney.

11. State whether any geologic studies have been made of the land area and substratum within a 100 mile arc of the San Onofre nuclear facility to determine the occurrence, magnitude, and extent of any earthquake or fault not heretofore considered or known at the time the current seismic design basis for SONGS 2 & 3 was established.

12. If your answer to the foregoing interrogatory is in the affirmative, state:

- a.) the name, address, and capacity and occupation of each person making such geologic studies;
- b.) the date or dates of such studies;
- c.) whether any reports of such studies were reduced to writing;
- d.) in whose possession or custody such reports presently repose;
- e.) whether you will make such reports available to intervenors to inspect and copy without the necessity of a formal motion to produce;

- f.) whether any faults have been identified as a consequence of said geologic studies, and if so, at what distance from the San Onofre Nuclear facility and in what direction do these faults lie; and
 - g.) whether any earthquakes have been identified as a consequence of said geologic studies, and if so, state the date and magnitude of each such earthquake.
- 13. State whether your representatives, agents, servants, or employees have prepared any letters, telegrams, interoffice memoranda, photographs, videotape, diagrams, maps or charts pertaining to the above-described geologic studies of the land area and substratum.
- 14. If your answer to the foregoing interrogatory is in the affirmative, state:
 - a.) when and by whom the above-described documents were prepared, taken, produced or drawn;
 - b.) where said documents are now located;
 - c.) where the negatives of such photographs or or videotape, if any, are now located;
 - d.) whether any of said documents are presently in the possession of your attorney.
- 15. State whether the seismic design basis for SONGS 2 & 3 has been re-evaluated in light of the effects of: a) dewatering cavities and b) recent earthquakes and new faults discovered since the current design basis was established.
- 16. If your answer to the foregoing interrogatory is in the affirmative, state:
 - a.) the name, address, and occupation of such person or persons making said re-evaluation of SONGS 2& 3 seismic design basis;

- b.) whether such re-evaluation has been reduced to writing
 - c.) in whose possession or custody such report presently reposes; and
 - d.) whether you will make such report available to intervenors to inspect and copy without the necessity of a formal motion to produce.
17. How will the advanced seismic design research program as reported in N.R.C. Release #78-91 be utilized in the study of design concepts to reduce the forces transmitted to, and response of reactor systems during earthquakes on SONGS 2 & 3 in view of the cavities which were not considered in determining the original seismic design basis?.
18. State whether applicants Southern California Edison Company and/or San Diego Gas and Electric Company have contracted for uranium to be supplied as fuel for SONGS 2 & 3. If so, will applicants supply intervenors with a copy of the contract without motion to produce?
19. Please state:
- a.) the name of the uranium supplier contracted with;
 - b.) the location of said suppliers source for the uranium;
 - c.) whether the supplier's source is a mineral deposit owned or leased by said supplier and, if so, the location of the mine, known tons of uranium in deposit, whether the deposit is low, medium, or high grade ore, and the estimated total production of the mine.
 - d.) If supplier's source is not a mineral deposit owned

or leased by supplier, from what source will supplier obtain the uranium ore.

- e.) the amount of uranium contracted for and the duration of the contract;
- f.) the price per pound paid pursuant to said contract;
- g.) whether said price is variable over the life of the contract and if so, upon what basis or index will the price be subject to change.

20. If your answer to interrogatory No. 18 is in the affirmative, state:

- a.) whether the supplier contracted with has other outstanding contracts for uranium, and if so, the names of those utilities and the amounts contracted for, if known;
- b.) the current uranium price per pound being charged by supplier.

21. If Southern California Edison and/or San Diego Gas and Electric Company have not contracted for uranium supplies, are negotiations underway with uranium suppliers, and if so, state:

- a.) the name of the uranium suppliers currently being negotiated with; and
- b.) the location of said suppliers' source for the uranium.

22. State the aggregate minimum yellowcake requirement in metric tons to adequately fuel SONGS 2 & 3 for forty (40) years.

23. If the amount of uranium contracted for, as stated in your answer to interrogatory No. 19(e), is not equivalent

to the minimum requirements of SONGS 2 & 3 over forty (40) years, what source will provide the additional uranium?

24. State what percentage of SONGS 2 & 3 uranium requirements will be met by the reprocessing of spent fuel.
25. State whether the applicants presently have contracts for the reprocessing of spent fuel, and if so, state:
 - a.) the name and location of the company operating the reprocessing facilities;
 - b.) the amount of spent fuel to be reprocessed annually under said contract;
 - c.) whether the reprocessing contract covers the forty (40) year life-span of SONGS 2 & 3; and
 - d.) the contract cost per metric ton of reprocessing spent fuel.
26. If the applicants have not contracted for the reprocessing of spent fuel, state whether negotiations are currently under way for such reprocessing and if so, state:
 - a.) the name(s) of the uranium supplier(s) currently being negotiated with
 - b.) the location of said suppliers' source for the uranium.
27. As to the existing emergency response plan for the San Onofre nuclear facility, state:
 - a.) what drill exercises have been performed to test the plan and procedures;
 - b.) when such drill exercises were performed;
 - c.) whether the applicants participated in such drill exercises;
 - d.) what additional federal, state, and local agencies participated in such drill exercises;

- e.) whether the results of such exercises have been reduced to writing;
 - f.) what activities, vehicles, and personnel were involved in the drill exercises; and
 - g.) the number of evacuees, if any, removed from the test area and the dimensions of the test area.
28. State whether the existing emergency response plans has been re-evaluated in light of the passage of Jarvis-Gann, and if so, whether the impact of various proposed funding cut backs at the state and local level have been considered in determining whether the emergency plan can be implemented effectively.
29. State whether the emergency response plan was designed with regard to SONGS 2 & 3, and if not, has the plan been reviewed with consideration for the increased potential radiation hazard presented by SONGS 2 & 3.
30. If the emergency response plan has been reviewed in light of SONGS 2 & 3, what recommendations or revisions have been made or are planned?
31. State what training programs or other specific efforts have been undertaken to prepare nuclear plant and assist agency personnel to react in accordance with the existing emergency response plan.
32. What measures or tests have been undertaken to assure that the equipment designated in the emergency response plan is available and in working order in the event of an emergency?
33. State what measures have been undertaken to assure that a lead agency will in fact assume responsibility for evacuation of the surrounding communities.

34. State what assurances exist that coordinating agencies will follow the directions of the lead agency.
35. State what agency has been designated with authority to function as the lead agency in the event of a nuclear emergency.
36. State whether the NRC has reviewed and approved the evacuation plan of June, 1975, and if so, state:
 - a.) when said plan was reviewed and approved;
 - b.) the name and capacity of the person or persons approving the plan;
 - c.) whether the review and approval of the plan was reduced to writing;
 - d.) in whose possession or custody such report presently reposes; and
 - e.) whether you will make such report available to intervenors to inspect and copy without the necessity of a formal motion to produce.
37. State what agency, under the plan, has authority to evacuate the beach area in front of and near the nuclear facility.
38. State what agency, under the plan, has authority for the traffic control function.
39. State what agency, under the plan, has responsibility for the radiological monitoring of evacuees in the event of a nuclear emergency.
40. With respect to your answer to interrogatory No. 39, state
 - (a) the number of personnel trained in radiological monitoring and available in an emergency, and
 - (b) the number of radiological monitoring devices available in an emergency.
41. State whether specific agreements have been made with assist

agencies to provide services in the following areas;

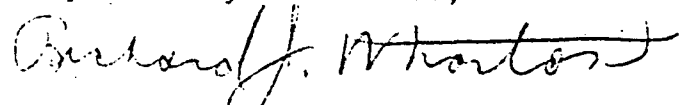
- a.) law enforcement;
- b.) traffic control;
- c.) fire prevention and control;
- d.) on-site medical services;
- e.) off-site medical services and facilities.

- 42. With respect to your answer to interrogatory No. 41(a), state the number of law enforcement personnel and mobile units committed to respond in an emergency.
- 43. With respect to your answer to interrogatory No. 41(b), state the number of traffic control personnel and mobile units committed to respond in an emergency.
- 44. With respect to your answer to interrogatory No. 41(c), state the number of fire prevention and control units and personnel committed to respond in an emergency.
- 45. With respect to your answer to interrogatory No. 41(d), state the number of committed on-site medical resources by item and include medical personnel by occupational title.
- 46. With respect to your answer to interrogatory No. 41(e), state the number of committed off-site medical resources by facility, and include available medical personnel by occupation title.
- 47. State whether applicant has established an emergency response training program for its personnel and if so, state:
 - a.) whether such training program includes drill exercises;
 - b.) with what frequency such training program is conducted;
 - c.) whether such training program has been coordinated with other state and local emergency response training programs;

d.) whether such training program has been reduced to writing.

48. State with particularity what systems have been developed for assessing and limiting radiation exposure in the event of a nuclear emergency.
49. State with particularity what protective response measures have been established for reacting to the spread of radiological contamination.
50. State what specific procedures will be followed in the dissemination of information to the public in a nuclear emergency.
51. Will you produce and permit the inspection and copying or photographing of any of those documents, papers, reports, letters, photographs, and other tangible items that, in your response to these interrogatories, you stated are in your possession, custody or control, without a motion to produce?
52. If the answer is in the affirmative, please attach copies to these interrogatories or state when and where such inspection and copying may take place.
53. If you will require a motion to produce in respect to some, but not all of such documents, papers, reports, etc., please indicate those items for which motion will be necessary.

Respectfully submitted,

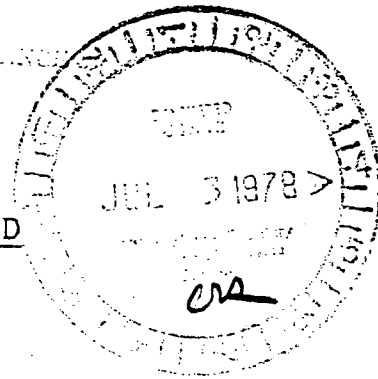


Richard J. Wharton
Attorney for Intervenors
FOE et al

Dated at San Diego, California
June 26, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "INTERVENORS FRIENDS OF THE EARTH, ET AL INTERROGATORIES TO SOUTHERN CALIFORNIA EDISON COMPANY, ET AL" have been served on the following by deposit in the United States mail, first class, this 26th day of June, 1978:

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Member
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Lawrence J. Chandler
Office of the Executive Legal Dir.
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Atomic Safety and Licensing
Appeal Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Atomic Safety and Licensing
Board Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Richard J. Wharton
Richard J. Wharton
Attorney for Intervenors FOE ET AL

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

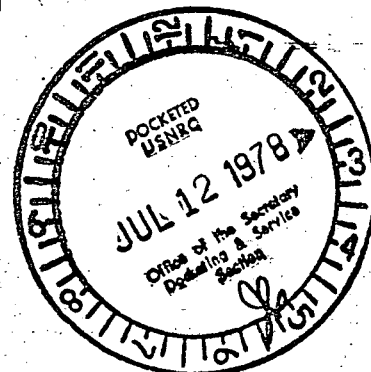
[Docket Nos. 50-361-OL and 50-362-OL]

SOUTHERN CALIFORNIA EDISON COMPANY
SAN DIEGO GAS AND ELECTRIC COMPANY

(San Onofre Nuclear Generating Station,
Units 2 and 3)

7/12/78

NOTICE OF RECONSTITUTION OF BOARD

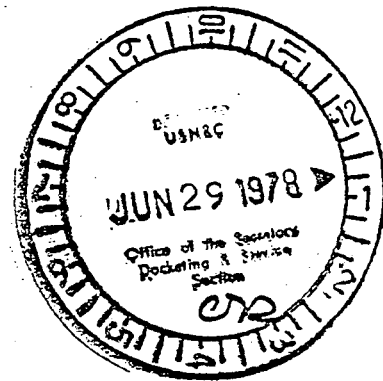


Frederic J. Coufal, Esq., was ~~Chairman~~ of the Atomic Safety and Licensing Board for the above proceeding. Because he is transferring to the Federal Communications Commission, where he will serve as an Administrative Law Judge, Mr. Coufal is unable to continue his service on this Board.

Accordingly, Ivan W. Smith, Esq., whose address is Atomic Safety and Licensing Board Panel, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, is appointed Chairman of this Board. Reconstitution of the Board in this manner is in accordance with Section 2.721 of the Commission's Rules of Practice, as amended.

James R. Yore
James R. Yore, Chairman
Atomic Safety and Licensing
Board Panel

Dated at Bethesda, Maryland
this 12th day of July 1978.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

6/26/78

In the Matter of

DUKE POWER COMPANY

(William B. McGuire Nuclear Station,
Units 1 and 2)

Docket Nos. 50-369, 50-370

MOTION TO REOPEN ENVIRONMENTAL HEARING
TO ADD CONTENTION (3)

Pursuant to the Rules of Practice before the Nuclear Regulatory Commission, Intervenor hereby moves to reopen the environmental phase of the licensing hearing to consider an additional contention. Significant new information that substantially affects the conclusion reached at the earlier hearing has become known to Intervenor. The rule that a hearing phase, once completed, is closed should be waived because special circumstances, appearing below, exist. Thus, said rule will not serve the purposes for which it was adopted and §§2.406 and 2.758 are satisfied.

Intervenor contends that:

The absence of even a plan for the long term storage of nuclear wastes, and, with the present absence of spent fuel reprocessing, the anticipated mode of operation at the construction permit stage of the hearing and the environmental phase of the operating license proceeding, makes meaningless the projected radiological impacts of waste given in the Final Environmental Impact Statement.

The projection of a plan for waste storage by 1985 is insufficient basis for the burning of nuclear fuel. Until the satisfactory demonstration over an adequate period of time of a waste storage technology it is imprudent and probably hazardous to increase the inventory of fission waste. Accordingly intervenor contends that M

McGuire Units 1 and 2 should not be permitted to operate until and unless effective waste storage has been demonstrated.

Intervenor raised a similar contention on July 29, 1976 in a document entitled "Fuel Cycle Contention." This contention was rejected as not meeting the special circumstances rule. At this time, changes in circumstances have made the reconsideration of the end of the fuel cycle as important as consideration of the Radon 222 issue, and essential for the future of the nation. The storage of wastes was treated as a generic issue at earlier hearings, and the solution was seen as the reprocessing of wastes. Present policy will not allow the reprocessing, and there is no way of predicting when, or if, this policy will be changed. This is, of course, a most recent decision, and made after the Final Environmental Impact Statement (April, 1976). (Note that the FEIS made specific reference to radiological effluents from reprocessing and discussed buried solids. This treatment program was speculative as a solution in 1976.) The only plan for disposal now is to hold the wastes until some plan is presented in 1985.

In support of its position that there is no plan for waste disposal sufficient to counteract the hazards of the accumulation of more wastes, Intervenor cites three very recent studies of the problem: "Nuclear Waste Disposal: Radiological Protection Aspects," New Scientist, 11 May 1978, page 375; "Nuclear Waste Disposal: The Geological Aspects," New Scientist, 27 April 1978, page 225; and "Geological Disposal of High-Level Radioactive Wastes--Earth Science Perspectives," Geological Survey Circular #779, 1978. The conclusions of the two British articles are "The results of our preliminary study suggest that there is no reason to rule out geological disposal, but there is considerable work to be carried out before a decision can be taken on the acceptability of this disposal option," at 377 and "Armed with this information [site investigations, experiments on host rock] it will be possible to proceed toward a final decision on the viability of disposal of high-level radioactive wastes in geological formations," at 227.

Similarly, the Geological Survey Circular is more helpful for pointing out

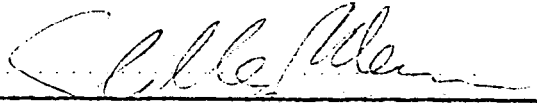
research that needs to be done that it is for stating conclusions. In particular, (1) it points out that we do not know if a rock salt mine storage facility will stay dry, or if small amounts of brine will eat through containers. (2) Uncertainties are also noted for shallow depth storage in other media, although these may be tested with relatively cool waste. (An experimental design that does not increase my confidence in experimentalists and does little to cope with the real problems.) (3) Ground water transport needs to be studied around proposed sites. (4) The study calls for the development of more tools to evaluate potential repositories. The cautious venturing of this as a need indicates that the solution to this problem is not at all close, because we do not even have the means to determine if we know all the dangers. (5) They conclude that we need to study the long and short term effects on the repository structure and the environment around the repository. Contemplation of what we do not know, in the face of what we are seemingly prepared to do, is chilling.

Based on the foregoing new research material, and the changed political decision regarding reprocessing of spent fuel, Intervenor moves this Board to require applicant and staff to assess the present environmental impact of the problem of spent fuel and that this Board admit and hear Intervenor's contention that there is no reasonable plan for the storage of spent fuel.

Dated: June 26, 1978.

BLUM AND SHEELY

by


SHELLEY BLUM
418 Law Building
730 East Trade Street
Charlotte, North Carolina 28202
(704) 376-6591
Counsel for Intervenor
Carolina Environmental Study Group

CERTIFICATE OF SERVICE

I hereby certify that copies of the attached in the captioned matter have been served on the following by depositing same in the United States mail this 26 day of June, 1978.

Robert M. Lazo, Esq. Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D.,C. 20555

Dr. Emmeth A. Luebke
Atomic Safety and Licensing Board Panel
US Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Director
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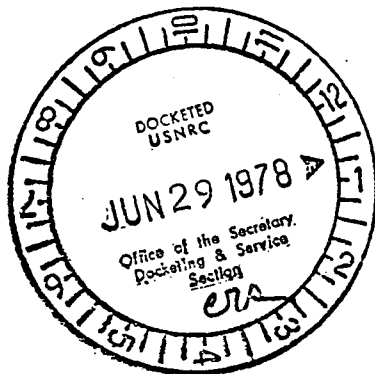
Edward G. Ketchen
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

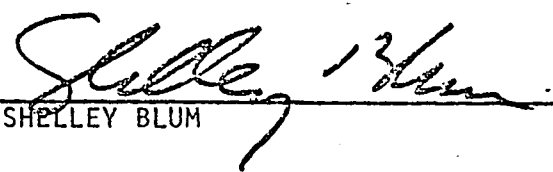
William Larry Porter, Esq.
Associate General Counsel
Duke Power Company
Post Office Box 2178
Charlotte, North Carolina

Mr. Jesse L. Riley, President
Carolina Environmental Study Group
854 Henley Place
Charlotte, North Carolina 28207

Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555




SHELLEY BLUM

NORTH CAROLINA

MECKLENBURG COUNTY

VERIFICATION

Shelley Blum, affiant herein, the
attorney for party , in the foregoing and attached
Motion to Add Contention, being first duly sworn, deposes
and says that the affiant has read the attached material
and knows the contents thereof; that the matters set forth
therein are true of affiant's own knowledge except as to
those matters alleged therein upon information and belief,
and as to those matters, the affiant believes them to be
true.

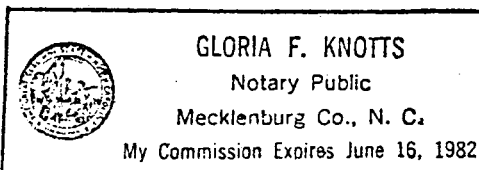
Shelley Blum

Subscribed and sworn to before me this

26 day of June, 1978.

Gloria F. Knotts
NOTARY PUBLIC

My Commission expires 6-16-82



Central

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL.</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

NRC STAFF INTERROGATORIES AND REQUEST FOR
DOCUMENTS TO FRIENDS OF THE EARTH, ET AL. - SET NO. 1

The NRC Staff hereby requests that the Intervenor, Friends of the Earth, et al. (FOE), pursuant to 10 CFR §§ 2.740b and 2.741, answer separately and fully, in writing under oath or affirmation, the following interrogatories within fourteen (14) days after service hereof and produce or make available for inspection and copying, all documentary material identified in the responses to interrogatories below. To the extent that copies of the documentary material cannot or will not be provided to the NRC Staff, access for inspection and copying should be provided at the offices of Richard Wharton, Esq., counsel for FOE, at a mutually agreeable time and date. Each response to the interrogatories below shall be under oath or affirmation of the individual(s) who contributed thereto. For all references requested in these interrogatories, identify them by author, title, date of publication and publisher if the reference is published, and if it is not published, identify the document by the author, title, the date it was written, the qualifications of the author relevant to this proceeding, and where a copy of the document may be obtained.

The interrogatories set forth below are to be considered the Intervenor's continuing obligation. Accordingly, if, after the Intervenor has answered these interrogatories, additional information comes to their attention with respect to one or more of the answers, the answers should be amended in a timely manner to provide such additional information.

FOE CONTENTION NO. 1^{*/}

1) The seismic design basis for SONGS 2 & 3 is inadequate to protect the public health and safety and does not comply with 10 CFR Part 100, Appendix A, in that the earthquake which could cause the maximum vibratory ground motion has not been assigned as the safe shutdown earthquake.

- 1-1. a. Upon what person or persons do you rely to substantiate your case on contention no. 1?
- b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
- c. Identify which of the above persons you intend to call as witnesses on this contention in this proceeding.
- d. Identify which of those persons identified in c. above you anticipate will appear voluntarily and which under subpoena.
- 1-2. Provide summaries of the views, positions or proposed testimony on contention no. 1 of all persons named in response to Interrogatory 1-1, that you intend to present during this proceeding.
- 1-3. What do you recommend as the proper seismic design basis for vibratory ground motion at the site?

^{*/}

The wording of the contentions stated in these interrogatories conforms to the wording accepted by the Atomic Safety and Licensing Board in its Memorandum and Order dated January 27, 1978. The contentions have, however, been renumbered for convenience, to be in numerical order.

- 1-4.
 - a. Identify the relevant geological and/or seismological data, including earthquake (or earthquakes), which contention no. 1 alleges has (or have) not been considered by the applicants and/or Staff in establishing the maximum vibratory ground motion?
 - b. Describe, in both qualitative and quantitative terms, each item identified in your response to a. above.
 - c. Describe, in both qualitative and quantitative terms, how the matters described in your responses to a. and b. above affect the seismic design basis for San Onofre Units 2 and 3.
- 1-5. State all bases, calculations, and references used (for example, trench logs, maps, well data, published works, etc.) that you intend to use during this proceeding to support the positions stated in response to Interrogatories 1-2, 1-3 and 1-4. Specify the interrogatory response number which the individual sources were used for. For calculations furnished, include, for example, the amount and direction of offset, the maximum vibratory ground motion, and the probability associated with the ground motion that you assume. The foregoing should be supplied with respect to both the Intervenor's direct presentation and to such evidence (oral or written or documentary) as Intervenor may attempt to adduce upon cross-examination of witnesses presented by applicants and/or NRC Staff.

- 1-6. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

FOE CONTENTION NO. 2

- 2) Whether the cavities caused by the Applicant's temporary dewatering of SONGS 2 & 3 site will have an unacceptable adverse effect on the capability of structures and equipment of the SONGS 2 & 3 to withstand the design basis seismic events.
-
- 2-1.
 - a. Upon what person or persons do you rely to substantiate your case on contention no. 2?
 - b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
 - c. Identify which of the persons identified in a. you intend to call as witnesses on this contention in this proceeding.
 - d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
 - 2-2. Provide summaries of the views, positions, or proposed testimony on contention no. 2 of all persons named in response to Interrogatory 2-1, that you intend to present during this proceeding.
 - 2-3. Describe the cavities caused by dewatering of the site giving dimensions and locations including proximity to specific, identified structures.

2-4. Identify specific structures, systems and components important to safety whose capability to withstand the design basis seismic event may be adversely and unacceptably affected considering the seismic and design bases that you postulate in response to Interrogatories 1-3 and 1-4 due to the existence of the cavities. In each case set forth the nature, extent and the type(s) of modification(s) that you recommend.

2-5. State the bases, calculations and references used for supporting the positions specified in response to Interrogatory 2-4 as to the following:

- a. Why each structure, system and component specified is important to plant safety.
- b. Why each structure, system and component specified would be adversely and unacceptably affected.

2-6. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

- 2-7. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

FOE CONTENTION NO. 3

- 3) The Applicants have not complied with 10 CFR Part 50 Appendix E regarding emergency plans since because of the jurisdictional diversity of the several state and local agencies involved and their inadequate fundings and staffing, appropriate and coordinated emergency plans cannot be developed. An operating license should not be granted for SONGS 2 & 3 because the various emergency response plans are so complex, overlapping, and difficult to implement that in the event of a nuclear accident the safety of persons in the surrounding areas will be imperiled.
- 3-1. a. Upon what person or persons do you rely to substantiate your case on contention number 3?
- b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
- c. Identify which of the persons identified in a. you intend to call as witnesses on this contention in this proceeding.
- d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 3-2. a. Identify the state and/or local agencies involved in development and implementation of emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3, referred to in Contention no. 3.
- b. With which of the agencies identified in a. above have you had any communication (oral or written) in regard to this facility at any time? Provide the date(s) of any such communication(s).

- c. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in b. above, regarding the San Onofre facility.
 - d. Provide a copy of all written communications or summary of all oral communications with each agency identified in b. above.
- 3-3. Provide summaries of the views, positions, or proposed testimony on contention no. 3 of all persons named in response to Interrogatory 3-1 that you intend to present during this proceeding.
- 3-4. State the specific basis and references upon which the persons named in response to Interrogatory 3-1 rely to substantiate their views regarding contention no. 3.
- 3-5. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.
- 3-6. Identify all documentary or other material which you intend to offer as exhibits to this contention in this proceeding.

- 3-7. a. What amount of funding (in dollars) is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3?
- b. What amount of staffing is required to develop and implement appropriate and coordinated emergency plans as contemplated by Appendix E to 10 CFR Part 50?
- c. What is the basis for your response in a. and b. above?
- d. Define the terms "appropriate" and "coordinated" as used in this contention no. 3.
- e. Define the terms "complex", "overlapping", "difficult to implement" and "surrounding areas" as used in this contention no. 3 taking into consideration your responses to the above interrogatories.

3-8. Considering your responses to the interrogatories above, specifically state, in both qualitative and quantitative terms, the deficiencies in the emergency plans proposed by the applicant in this proceeding, for San Onofre Units 2 and 3.

3-9. Describe how "the safety of persons in the surrounding areas will be imperiled".

FOE CONTENTION NO. 4

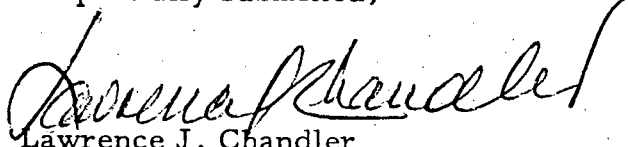
- 4) The Applicants' projection of fuel costs over the life of the plants does not adequately account for escalation of uranium prices and therefore the cost-benefit analysis is in error.

- 4-1. a. Upon what person or persons do you rely to substantiate your case on contention number 4?
- b. Provide the addresses, educational and professional qualifications of all persons named in a. above.
- c. Identify which of the persons identified in a. above you intend to call as witnesses on this contention in this proceeding.
- d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 4-2. Provide summaries of the views, positions, or proposed testimony on contention number 4 of all persons named in your response to Interrogatory 4-1 above, that you intend to present during this proceeding.
- 4-3. State the specific bases, calculations and references upon which the persons named in response to Interrogatory 4-1 rely to substantiate their position regarding contention number 4.
- 4-4. a. What rate of escalation do you believe should be used in calculating uranium prices for purposes of this contention number 4.?

- b. What is the basis for this rate? Provide all calculations and identify all references used in arriving at your response to a. above.
- 4-5.
- a. Utilizing the rate of escalation stated in your response to Interrogatory 4-4.a., what fuel cost do you calculate over the life of San Onofre, Units 2 and 3?
 - b. Provide the bases and calculations for your response to Interrogatory 4-5.a. above.
- 4-6. Describe, in both qualitative and quantitative terms, the effect on the cost-benefit analysis for San Onofre Units 2 and 3, which the fuel cost you have calculated would have.
- 4-7.
- a. What is the maximum fuel cost which you calculate that would not affect the cost-benefit balance for San Onofre Units 2 and 3?
 - b. What is the basis for this cost? Provide all calculations and identify all references used in arriving at your response to a. above.
- 4-8. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.

- 4-9. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Lawrence J. Chandler".

Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 23rd day of June, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

Docket Nos. 50-361 OL
50-362 OL

NRC STAFF INTERROGATORIES AND
REQUEST FOR DOCUMENTS TO GUARD - SET NO. 1

The NRC Staff hereby requests that the Intervenor, GUARD, pursuant to 10 CFR §§ 2.740b and 2.741, answer separately and fully, in writing under oath or affirmation, the following interrogatories within fourteen (14) days after service hereof and produce or make available for inspection and copying, all documentary material identified in the responses to interrogatories below. To the extent that copies of the documentary material cannot or will not be provided to the NRC Staff, access for inspection and copying should be provided at a mutually agreeable place, time and date. Each response to the interrogatories below shall be under oath or affirmation of the individual(s) who prepared the response and shall identify any other individual(s) who contributed thereto. For all references requested in these interrogatories, identify them by author, title, date of publication and publisher if the reference is published, and if it is not published, identify the document by the author, title, the date it was written, the qualifications of the author relevant to this proceeding, and where a copy of the document may be obtained.

The interrogatories set forth below are to be considered the Intervenor's continuing obligation. Accordingly, if, after the Intervenor has answered these interrogatories, additional information comes to its attention with respect to one or more of the answers, the answers should be amended in a timely manner to provide such additional information.

GUARD CONTENTION NO. 1

1. The applicants have not complied with 10 CFP Part 50, Appendix E regarding emergency plans since, because of inadequate funding and staffing of the several state and local agencies involved, appropriate and coordinated emergency plans cannot be developed.
- 1-1.
 - a. Upon what person or persons do you rely to substantiate your case on contention number 1?
 - b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
 - c. Identify which of the persons identified in a. you intend to call as witnesses on this contention in this proceeding.
 - d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 1-2.
 - a. Identify the state and/or local agencies involved in development and implementation of emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3, referred to in Contention no. 1.
 - b. With which of the agencies identified in a. above have you had any communication(s) (oral or written) in regard to this facility, at any time? Provide the date(s) of any such communication(s).

- c. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in b. above, regarding the San Onofre facility.
 - d. Provide a copy of all written communications or summary of all oral communications with each agency identified in b. above.
- 1-3. Provide summaries of the views, positions, or proposed testimony on contention no. 1 of all persons named in response to Interrogatory 1-1 that you intend to present during this proceeding.
- 1-4. State the specific bases and references upon which the persons named in response to Interrogatory 1-1 rely to substantiate their views regarding contention no. 1.
- 1-5. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.
- 1-6. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.
- 1-7. a. What amount of funding (in dollars) is required to develop and implement appropriate and coordinated emergency plans, as contemplated by Appendix E to 10 CFR Part 50, for San Onofre Units 2 and 3?

- b. What amount of staffing is required to develop and implement appropriate and coordinated emergency plans as contemplated by Appendix E to 10 CFR Part 50?
 - c. What is the basis for your response in a. and b. above?
 - d. Define the terms "appropriate" and "coordinated" as used in this contention no. 1.
- 1-8. Considering your responses to the interrogatories above, specifically state, in both qualitative and quantitative terms, the deficiencies in the emergency plans proposed by the applicant in this proceeding, for San Onofre Units 2 and 3.

GUARD CONTENTION NO. 2

2. As a consequence of increase in freeway use in recent years and the influx of transient and resident individuals into the exclusion area and low population zone, there is no longer assurance that effective arrangements can be made to control traffic or that there is a reasonable probability protective measures could be taken on behalf of individuals in these areas including, if necessary, evacuation, particularly considering the unique geographic constraints in these areas; thus, applicants do not comply with 10 CFR § 100.3(a) or (b).
- 2-1.
 - a. Upon what person or persons do you rely to substantiate your case on contention number 2?
 - b. Provide the addresses and educational and professional qualifications of any persons named in your response to a. above.
 - c. Identify which of the persons named in a. you intend to call as witnesses on this contention in this proceeding.
 - d. Indicate which of the persons identified in c. above that you anticipate will appear voluntarily and which under subpoena.
- 2-2. Provide summaries of the views, positions, or proposed testimony on contention no. 2 of all persons named in response to Interrogatory 2-1 that you intend to present during this proceeding.

- 2-3. State the specific bases and references upon which the persons named in response to Interrogatory 2-1 rely to substantiate their views regarding contention no. 2.
- 2-4. To the extent that Intervenor's case on this contention will rely on cross-examination of witnesses presented by any other party to this proceeding, identify any material to be relied upon in such cross-examination.
- 2-5. Identify all documentary or other material which you intend to offer as exhibits on this contention in this proceeding.
- 2-6. a. Identify the federal, state and/or local agencies involved in traffic management and control relating to Interstate Highway 5?
- b. Identify the state and/or local agencies or governmental bodies involved in land-use management or development, or in demographic activities in your geographic area of concern?
- c. With which of the agencies identified in a. and b. above have you had any communication(s) (oral or written) in regard to this facility at any time? Provide the date(s) of any such communication(s).
- d. Identify (providing name, title or position, and address) each individual communicated with at each agency identified in c. above, regarding the San Onofre facility.

- e. Provide a copy of all written communications or summary of all oral communications with each agency identified in c. above.
- 2-7. Describe the geographic area of concern for purposes of this contention no. 2.
- 2-8. Provide, on a year-by-year basis and in quantitative terms, traffic statistics for Interstate Highway 5 in the area defined in your response to Interrogatory 2-7 above, for the years 1973 through 1977 (including any such data for 1978 as may be available), which form the basis for the allegation set forth in contention no. 2 regarding "increase in freeway use in recent years."
- 2-9. Indicate, on a year-by-year basis and in quantitative terms, population growth in the geographic area of concern defined in your response to Interrogatory 2-7 above, for the years 1973 through 1977 (including any such data for 1978 as may be available). For purposes of this interrogatory, your response should include a breakdown of resident and transient populations and specify, in geographic terms, where growth has occurred (in the exclusion area or low population zone) for each population category (resident or transient).
- 2-10. Specify (a) the exclusion area and (b) the low population zone, as each is defined in 10 CFR Part 100, which you have used in your responses to the interrogatories above.

2-11. Describe all protective measures which you believe should be considered in the context of this contention no. 2.

2-12. a. Describe the "unique geographic constraints" as this phrase is used in this contention no. 2.

b. Define, in geographic terms, what is meant by "in these areas" as this phrase is used in this contention no. 2.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Lawrence J. Chandler".

Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 24rd day of June, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF INTERROGATORIES AND REQUEST FOR DOCUMENTS TO FRIENDS OF THE EARTH, ET AL. - SET NO. 1" and "NRC STAFF INTERROGATORIES AND REQUEST FOR DOCUMENTS TO GUARD - SET NO. 1" have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 23rd day of June, 1978:

Frederic J. Coufal, Esq., Chairman*
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member*
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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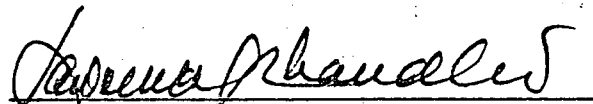
Richard J. Wharton, Esq.
4655 Cass Street
San Diego, California 92109

Mrs. Lyn Harris Hicks
GUARD
3908 Calle Ariana
San Clemente, California 92672

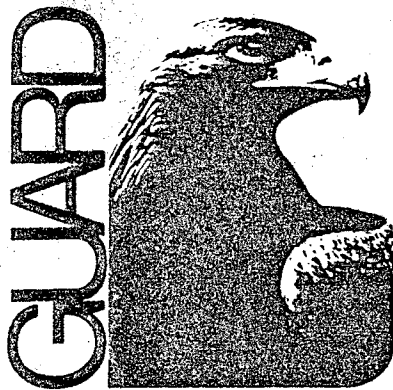
Atomic Safety and Licensing
Board Panel*
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Atomic Safety and Licensing
Appeal Panel*
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

A handwritten signature in dark ink, appearing to read "Lawrence J. Chandler", is written over a horizontal line.

Lawrence J. Chandler
Counsel for NRC Staff



DEDICATED TO POSSIBLE FUTURE GENERATIONS AND TO THE PRESERVATION OF THEIR NATURAL AND CULTURAL HERITAGE...

3908 CALLE ARIANA, SAN CLEMENTE, CALIFORNIA 92672 / TELEPHONE: (714) 492-5078

June 11, 1978

Frederic J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
PO Box 247
Bodega Bay, Ca. 94923

In the Matter of Southern California Edison Co. et al
San Onofre Nuclear Generating Station, Units 2&3
Docket Nos. 50-361 OL and 50-362 OL

Gentlemen:

I returned home from a vacation trip and found communications of interrogatories which include notification of expectation of GUARD's answers within 14 days of mailing, and also reference to a "Memorandum and Order of this Atomic Safety and Licensing Board dated January 27, 1978" requiring a discovery status report.

Here, therefore, is late report. GUARD cannot comply with the 14 day request; it is a physical impossibility. While the NRC and the utility companies have full-time paid employees, which our tax dollars and rate payments provide, we have no paid staff, nor funds, only dedicated citizens; what an abominable injustice in a democracy.

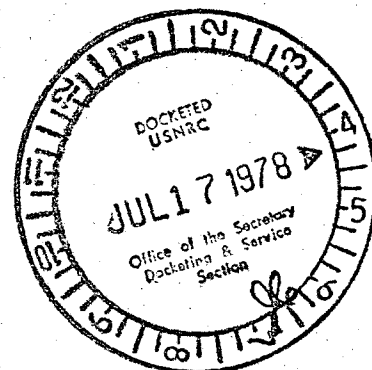
The bits and pieces of the answers sought from us are spread among those dedicated volunteers and must be drawn together. I leave again tomorrow morning for Colorado. Our GUARD president is on the east coast visiting an aged father. Our lead researcher Dorothy Boberg will be out of the state until July 23. What a bummer that after all these years, everything happens when we are on our vacations. What do we do now?

We have sent two sets of questions...information we need, but not all applicable to the licensing hearings, and are in midst of preparing another, information we need for our case.

If this letter of inquiry is a communication which should be duplicated and sent to all parties, I will do so. May I have a list of names and addresses you would like me to send it to? I used Larry Chandler's format for the addressing above.

Sincerely,

Lyn Harris Hicks
Lyn Harris Hicks, GUARD Advocate



Reg. Files

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

Docket No.(s) 50-361
50-362

(San Onofre Nuclear Generating)
Station, Unit Nos. 2 and 3))
)
)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this

18th day of July 1978.

Peggy T. Downing
Office of the Secretary of the Commission

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
SOUTHERN CALIFORNIA EDISON) Docket No.(s) 50-361
COMPANY, ET AL.) 50-362
)
(San Onofre, Units 1 and 2))
)

SERVICE LIST

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Director
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Richard J. Wharton, Esq.
Friends of the Earth
124 Stear Street
San Francisco, California 94105

April 13, 1978

Frederick J. Coufal, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

In the Matter of
SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

DISTRIBUTION:

L. Chandler
H. McGurren
S. Treby
H. Shapar
T. Engelhardt
M. Grossman
H. Rood
147-Phillips
K. Kniel
147-Phillips
O. Lynch - EP

Gentlemen:

During the course of the Staff's continuing studies of ECCS performance characteristics, the Staff has identified certain aspects of accumulator delivery which should be considered further. This matter is discussed in Attachment 1 to this letter.

Also enclosed for the information of the Board, as Attachment 2, is a memorandum which discusses certain information concerning behavior of iodine during postulated steam generator tube rupture accidents.

Each of the above will be considered by the Staff during its review of instant licensing application and will be addressed in its Safety Evaluation Report or a supplement thereto.

Sincerely,

Lawrence J. Chandler
Counsel for NRC Staff

W. Regan - EP
H. Smith
110-Phillips
NRC Central File
LPDR
ELD FF (2)
Chron.

Enclosures: As stated

cc w/enclosures:

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
Rollin E. Woodbury, Esq.
David N. Barry, III, Esq.
James A. Beoletto, Esq.

Alan R. Watts, Esq.
Richard J. Wharton, Esq.
Atomic Safety and Licensing
Board Panel
Atomic Safety and Licensing
Appeal Panel

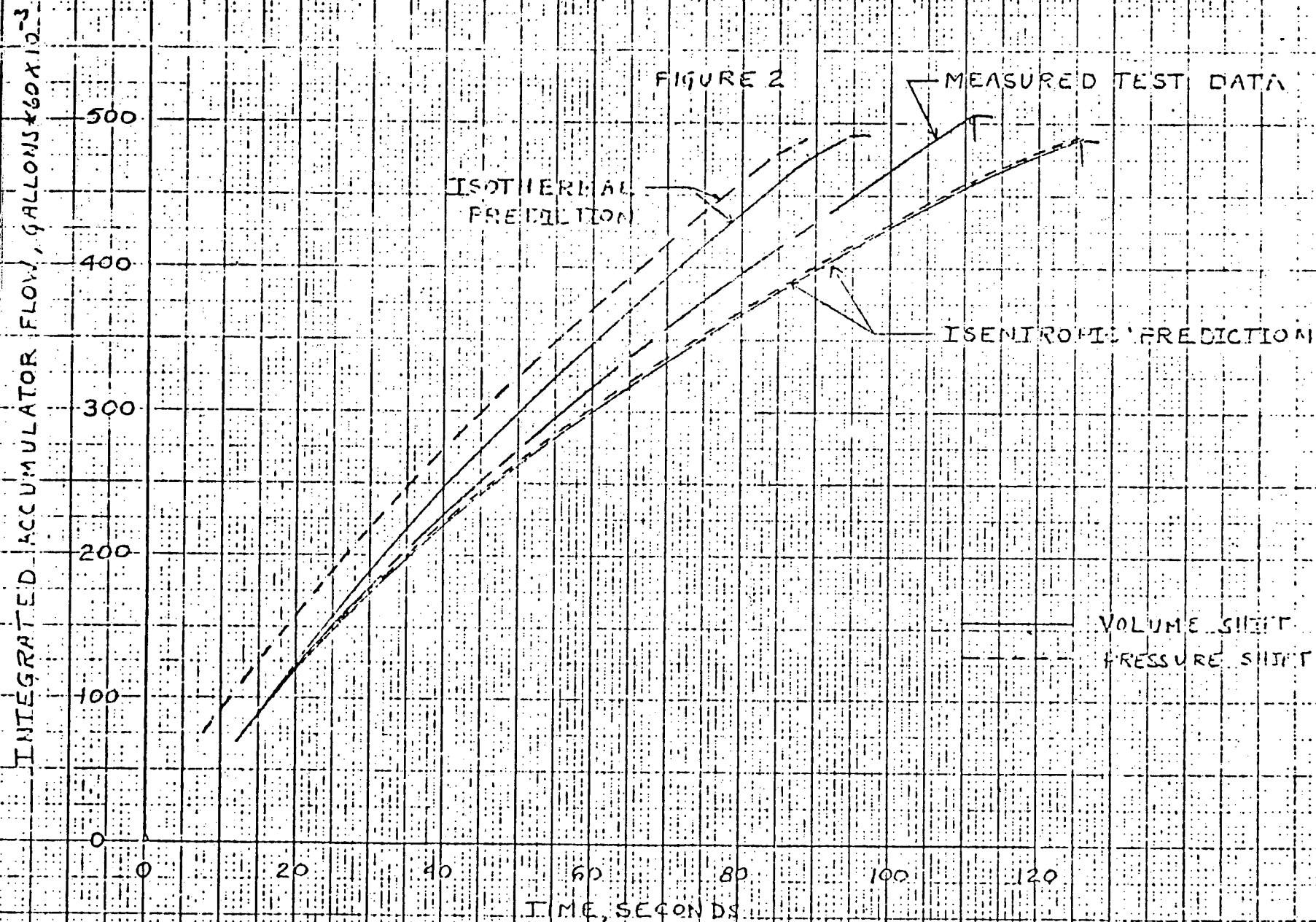
David R. Pigott, Esq.
Docketing and Service Section

Mrs. Lynn Harris Hicks

OFFICE >		ELD	ELD	
SURNAME >		LChandler:am	STR	
DATE >		04/13/78	04/13/78	

1. **Concern:** Actual accumulators may deliver ECCS water to the reactor coolant system faster than is predicted by some computer programs used to predict ECCS performance. This could mean that sufficient accumulator water would not be available at the time it is needed. Attention was focused on this problem when comparisons of accumulator delivery calculations were made between RELAP4 (NRC) and SATAN VI (Westinghouse) as part of the Upper Head Injection (UHI) review. Comparisons to the LOFT experimental data indicated that the Westinghouse model might be underpredicting accumulator delivery flow water. The key factors influencing delivery rates are the gas expansion model and the effective delivery line resistance.
2. **Safety Significance:** There is no specific reference to our current licensing position. Each reactor vendor proposed a different model in 1974 for compliance with Appendix K. These models are described in the appropriate topical reports. We did not consider this an issue at that time so implicitly accepted each model for accumulator delivery. We do not believe that this issue poses a significant safety problem and can ultimately be handled within the scope of present ECCS design capability. An example of the influence that the gas model can make on integrated accumulator delivery is shown on Figure 2 enclosed. Test data are from full-scale accumulator discharge.
3. **Evaluation:** We are asking our consultants (Sandia Laboratories) to continue their analytical evaluation of this issue. We have requested Westinghouse to provide comparisons of their model with prototypic accumulator delivery data for UHI plants. As part of the Standard Problem Program we have requested all participants to provide analytic comparisons to available data (see memo Ross to Standard Problem Participants, enclosed).

It is conceivable that after our review of this issue is complete, changes in some vendor models for some plants may be required. The effect of these changes on calculated ECCS performance is not likely to be large for any plant except UHI plants. In any case, simple adjustments in accumulator water volume could most likely compensate for any model change. This issue should be completely resolved by August of this year.
4. **Interim Accounting:** It is recommended that no change is required until our evaluation is complete. Since we have notified reactor vendors by mail of the need to do additional calculations, we should consider informing sitting boards in the post-SER space. It is applicable to all such PWRs.



MEMORANDUM TO: U.S. Standard Problem Participants

FROM: Denwood F. Ross, Jr., Assistant Director for Reactor Safety.

SUBJECT: ACCUMULATOR DELIVERY COMPARISONS

RELAP-4 comparisons of LOFT tests L1-3A and L1-4 (U.S. Standard Problem #7) have highlighted certain aspects of accumulator delivery which should be considered in the standard problem program. The RELAP-4 program through version 2 of MOD-6 used an isothermal gas expansion model for nitrogen in the accumulators. Post test analysis of L1-3A by INEL indicated that the actual gas expansion is somewhere between isothermal and isentropic ($\gamma \approx 1.2$). L1-4 RELAP analysis used an intermediate value for γ and after correcting loss coefficients was able to match pressure and delivery driving the early portion of accumulator delivery. After 35 seconds of injection the data shows flow spikes which are not predicted by RELAP. It has been suggested that this is related to nitrogen in the delivery lines and may cause exhaustion of the accumulators sooner than predicted.

We believe that accumulator delivery behavior can have an important effect on ECCS performance. The U.S. Standard Problem suggested list of comparisons includes accumulator delivery. In the past this information has not been provided by all participants. Please provide pressure and flow comparisons for all past and future standard problems where applicable. For L1-4 discuss the comparisons, including the following:

- a.) Gas expansion model
- b.) Heat transfer
- c.) Loss coefficients
- d.) Nitrogen ingestion
- e.) LOFT typicality compared to large scale accumulator data

Participants having approved licensing models ^{are requested to} provide any additional comparison to experiment or other information pertinent to assessing the validity of accumulator delivery models.

Sincerely,

Denwood F. Ross, Jr., Assistant Director
for Reactor Safety
Division of Systems Safety
Office of Nuclear Reactor Regulation



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ATTACHMENT 2

FEB 22 1978

NOTE TO: Domenic B. Vassallo, Assistant Director for Light Water Reactors, DPM

FROM: Richard H. Vollmer, Assistant Director for Site Analysis, DSE

SUBJECT: CONSULTANT REPORT REGARDING NON-CONSERVATISM IN STAFF MODEL

As a result of a technical assistance contract with a staff consultant, a technical report (NUREG-0409) on "Iodine Behavior in a PWR Cooling System Following a Postulated Steam Generator Tube Rupture Accident," by A. K. Postma and P. S. Tam, was published in January 1978.

The report is a theoretical study of the iodine behavior in the primary and secondary coolant systems of a PWR following a postulated steam generator tube rupture. The report concludes that, as a result of such a rupture, primary coolant water containing iodine would be atomized by hydrodynamic forces as it flashed through the leak path into the steam system. The removal of iodine by the secondary water was predicted to be highly dependent upon the primary-to-secondary pressure difference and upon the water depth. Calculations made in the report, and which the report emphasized were designed to yield conservative predictions, indicated that in the early part of the accident less than 50% of the iodine might be removed by the secondary water, whereas in the later phases of the accident, about 99% of the iodine would be removed. Although the report attempted to assess the iodine removal by steam separators it did not examine possible iodine removal due to the proximity of neighboring tubes and other submerged structures in the steam generator.

The present staff model, as outlined in Standard Review Plan 15.6.3, assumes that a constant value of 90% of the iodine transferred to the secondary water is removed and retained in it. Therefore, NUREG-0409 implies that the present staff model may be non-conservative in the early phases of the accident, but may be overly conservative in the later phases.

The overall degree of conservatism or non-conservatism of the staff's present model cannot easily be assessed without a much more detailed examination. However, some perspective regarding the implications may

FEB 22 1978

be gained by observing that the present staff model predicts the radiological consequences of a steam generator tube rupture coincident with a large iodine spike to be about 75 rem to the thyroid for a typical PWR at a site with poor ($X/Q = 1 \times 10^{-3}$ sec/m³) meteorology. We can conclude from this that even if the staff's model was less conservative throughout the accident by as much as a factor of four, that our conclusions regarding the acceptability of this event would not likely change.

The staff is currently taking action in this matter in two ways. First, the staff is preparing and evaluating a more detailed model to be incorporated in its revised Standard Review Plan in this area which will allow for a time-dependent iodine retention fraction in the secondary water. Second, the staff is planning to have experiments performed, as suggested by NUREG-0409, that will confirm or refute the values indicated by the report.

We believe, in view of the possibility of a non-conservative staff model in this regard, that the licensing boards currently in progress for all PWR plants should be duly informed.



Richard H. Vollmer, Assistant Director
for Site Analysis
Division of Site Safety and
Environmental Analysis

April 10, 1978

Note to Domenic Vassallo, Assistant Director for
Light Water Reactors

We agree that Mr. Volmer's memorandum should be forwarded to the Licensing Boards. However, we will forward it without comment in the cover letter as to significance. As you know, one of the more difficult questions we have to face concerning tube integrity is the potential for a steam line break in the super pipe outside containment, causing tube failure. The recent growth of knowledge as to integrity under actual operating conditions warrants reconsideration of our old positions in this matter. Any new information on iodine behavior under these circumstances can be important.

Moreover, a change of a factor of 2 to 4 in the consequences of the tube rupture (without steam line break) with loss of power accident is not small. Although it may be within Part 100, it may result in a new worst case DBA. This has significant effect on the licensing issues.

We will need to resolve a position to take before the Licensing Board on this matter soon. However, we do not believe the information should be held up.

Milton Grossman

Milton J. Grossman
Chief Hearing Counsel

TELEPHONE (415) 393-9000
WRITER'S DIRECT DIAL NUMBER

LAW OFFICES OF
CHICKERING & GREGORY
THREE EMBARCADERO CENTER
TWENTY-THIRD FLOOR
SAN FRANCISCO 94111



CODE ADDRESS
"CHICKGREG"

March 7, 1978

3/7/78

GUARD
c/o Ms. Lyn Harris Hicks
3980 Calle Ariana
San Clemente, CA 92672

NET NUMBER

REC'D & UTIL. FAC. 50-361,362

Dear Ms. Hicks:

On December 1, 1977, Ms. Dorothy Boberg hand-delivered a document entitled "Questions from GUARD to So Cal Edison." A copy of this document is enclosed. Ms. Boberg was advised that such inquiries were inappropriate at that time and that the request was outside the approved procedures. Nonetheless, Ms. Boberg insisted that the questions be considered and answered in writing.

The Prehearing Conference in this matter was held on December 6, 1977. The Nuclear Regulatory Commission (NRC) Rules of Practice provide that discovery can only begin after that prehearing conference. (10 CFR 2.470(b)(1).) The Rules of Practice further provide that discovery can "reduce only to those matters in controversy which have been identified by the Commission or the Presiding Officer in the prehearing order entered at the conclusion of that prehearing conference." (10 CFR 2.740(b)(1).) Such a discovery period is now open.

This is to advise you that applicants do not consider the questions contained in the enclosed document to be within the scope of the contested issues in which GUARD has an interest. It is suggested that you review your questions, and if you still consider them to be valid discovery requests, that you submit them to applicants pursuant to the NRC's discovery procedures.

Very truly yours,

David R. Pigott
Smauel B. Casey
CHICKERING & GREGORY

By

Attorneys for Applicants
Southern California Edison Co.
and San Diego Gas & Electric Co.

Ms. Lyn Harri Hicks

March 7, 1978

- 2 -

Carbon copies with enclosures to:

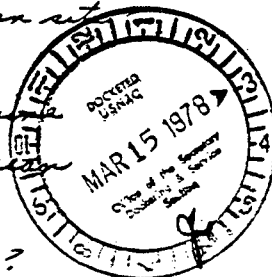
Dr. Cadet H. Hand, Jr.
~~Frederic J. Coufal~~, Esq.
Lester Kornblith, Jr.
Rollin E. Woodbury, Esq.
David N. Barry, III, Esq.
James A. Beoletto, Esq.
Alan R. Watts, Esq.
Janice E. Kerr, Esq.
Lawrence Q. Garcia, Esq.
Richard J. Wharton, Esq.
Atomic Safety and Licensing
Appeal Board
Atomic Safety and Licensing
Board Panel

Reply to Dorothy Roberg
15712 Nestle Ave
Northridge, Ca 91326

RELATED CORRESPONDENCE

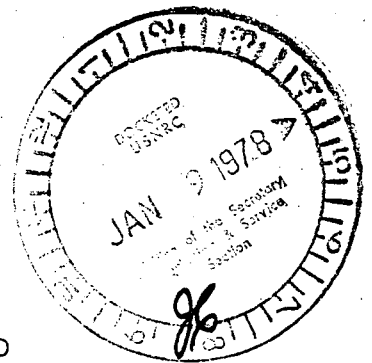
Questions from GUARD to Los Cal Edison

1. Has the unit I fuel pool been expanded beyond original design?
2. How much fuel is now in the fuel pools on site?
3. How is spent fuel on site protected in the event of an earthquake and loss of coolant?
4. How many fuel loads can be stored on site?
5. How long is fuel held in fuel pools?
6. What tests have you done to determine dispersion of radionuclides in the ocean (especially #3)?
7. Where can these tests results be seen?
8. What tests has Edison funded to determine the effects of radionuclides on sea life?
9. Where can these tests results be seen?
10. How much tritium was expected to be released in plans for San Onofre I?
11. How much has actually been released each year of operation?
12. In picocuries per liter, what was the range of concentrations released in each year of operation?
13. What is the process of tritium origination and release in San Onofre I?
14. What are the costs calculated for ^{spent} fuel storage and disposal of units I, II and III.
15. How does Edison calculate the costs of decommissioning units I, II and III?
16. What are these costs?
17. What changes have been made in plant design to justify the changes in the exclusion area and low population zone?



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

DOCKET NOS. 50-361 OL
50-362 OL

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the above captioned proceeding. In accordance with 10 CFR § 2.713, the following information is provided:

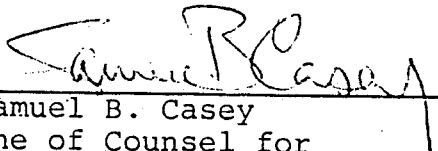
Name Samuel B. Casey

Address Chickering & Gregory
Three Embarcadero Center
23rd Floor
San Francisco, CA 94111

Telephone (415) 393-9234

Admissions All Courts of the State of California
District Court, Northern District of California

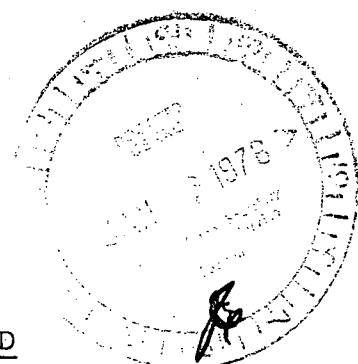
Name of Party San Diego Gas & Electric Company
Post Office Box 1831
San Diego, California 92112
and
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770


Samuel B. Casey
One of Counsel for
Southern California Edison Company
and
San Diego Gas & Electric Company

Dated: January 4, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

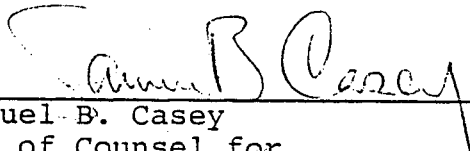
DOCKET NOS. 50-361 OL
50-362 OL

DESIGNATION FOR SERVICE

Pursuant to 10 CFR § 2.708(e), the following persons
are designated as those on whom service may be made on behalf
of San Diego Gas & Electric Company:

David R. Pigott
Allan J. Thompson
Samuel B. Casey
Chickering & Gregory
Three Embarcadero Center
23rd Floor
San Francisco, California 94111

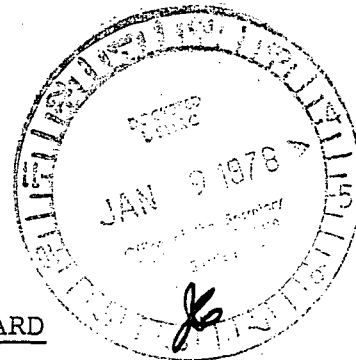
Executed at San Francisco, California, this 4th day of
January, 1978.



Samuel B. Casey
One of Counsel for
San Diego Gas & Electric Company

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

DOCKET NOS. 50-361 OL
50-362 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "Designation for Service" and "Notice of Appearance" for Samuel B. Casey in the above captioned proceeding have been served on the following by deposit in the United States mail, first class mail, this 4th day of January, 1978:

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P.O. Box 247
Bodega Bay, CA 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
5066 State Building
San Francisco, CA 94102

Alan R. Watts, Esq.
Assistant City Attorney
City Hall
Anaheim, CA 92805

Richard J. Wharton, Esq.
4655 Cass Street
San Diego, CA 92109

Lawrence J. Chandler, Esq.
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

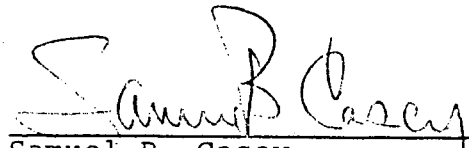
Mrs. Lyn Harris Hicks
GUARD
3908 Calle Ariana
San Clemente, CA 92672

Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety and Licensing Appeal Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, CA 92083

Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Samuel B. Casey
One of Counsel for Applicants

Reg Files

DOCKET NUMBER

PROD. & UTIL. EAC. 50-361,362

6029 Oakdale Avenue
Woodland Hills, Calif. 91367

Jan. 4, 1978

Secretary of the Commission
Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Sir;

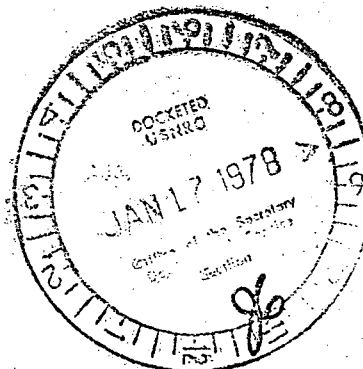
I have the impression that the NRC will be having a hearing in Los Angeles in regard to the new units at San Onofre. Could you tell me when this might be, and if I might make a statement at the hearing as an interested citizen?

Thank you,

Edith Roth
Ms. Edith Roth

Acknowledged by conl

1/17/78 JL



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket No.(s) 50-361
COMPANY, ET AL.	)	50-362
)	
(San Onofre Nuclear Generating)	
Station, Unit Nos. 2 and 3))	
)	
)	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this
17th day of Jan 1978.

Peggy T. Downing
Office of the Secretary of the Commission

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

(San Onofre, Units 1 and 2))
)

Docket No.(s) 50-361
50-362

SERVICE LIST

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Director
Bodega Marine Laboratory
University of California
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Bodega Bay, California 94923

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Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Office of the Executive Legal Director
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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James A. Beoletto, Esq.
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Rosemead, California 91770

David R. Pigott, Esq.
Allan J. Thompson, Esq.
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Three Embarcadero Center - 23rd Fl.
San Francisco, California 94111

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, California 92083

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California First Bank Building
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Santa Ana, California 92701

Richard J. Wharton, Esq.
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San Diego, California 92109

San Clemente Public Library
233 Granada Street
San Clemente, California 92672

Lyn Harris Hicks
Advocate for Guard
3908 Calle Ariana
San Clemente, California 92672

Hal Thomas
Director
Environmental Coalition of
Orange County
206 W. 4th Street
Santa Ana, California 92701

Richard J. Wharton, Esq.
Friends of the Earth
124 Stear Street
San Francisco, California 94105

12/29/77

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL.</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

MEMORANDUM OF NRC STAFF RE STATUS
OF CITIES OF ANAHEIM AND RIVERSIDE

By memorandum filed on December 16, 1977, the Applicants, Southern California Edison Company and San Diego Gas and Electric Company, expanded upon their argument to this Atomic Safety and Licensing Board at the December 6, 1977 prehearing conference, objecting to consolidation of the Cities of Anaheim and Riverside (Cities) with Applicants. Such consolidation 1/ was ordered by the Board in its Order of October 26, 1977 pursuant to 10 CFR § 2.715a.

The thrust of Applicant's position appears to be that 10 CFR § 2.715a provides for consolidation of parties only and, since the Board dismissed the Cities' petition for leave to intervene in its Order of October 26, 1977, they are not parties, hence, they cannot be consolidated. Without

1/ The Applicants acknowledge that this action was consistent with the Cities' status at the construction permit stage of this proceeding.

elaboration, however, the Applicants do suggest that at such time as the Cities become parties, they may be consolidated. The Applicants concede that when the Cities are formally co-owners, they would become parties and would be consolidated with Applicants. (Tr. 575).

The Board's action in consolidating the Cities with the Applicants was based on its finding, in its Memoranda and Orders of July 22, 1977 and October 26, 1977, that the interest of the Cities is essentially the same as the Applicants'. This similarity is based on the Cities' prospective co-ownership of the facilities as a result of its formal notice of intent to accept the Applicants' offer pursuant to the terms and conditions of a settlement agreement; formal consummation of the agreement apparently has not yet materialized (Tr. 531). As represented at the prehearing conference by counsel for the Cities, only the question of investment tax credit remains; the agreements themselves have been negotiated and will likely be executed early in 1978 (Tr. 532). The investment tax credit matter involves a ruling by the U.S. Internal Revenue Service (IRS) which is expected by mid-1978 at latest (Tr. 533).

It is the Staff's recommendation, based on its review of the argument presented at the prehearing conference and the Applicants' memorandum, that, in view of the cloud which has been placed on the co-ownership question - viz. a necessary ruling from the IRS - and the presently unknown significance thereof on this matter, the Board should stay the effectiveness of its ruling consolidating the Cities with the Applicants' pending

advice from the Applicants regarding the status of the formal agreement at such time as a ruling from the IRS is issued on the investment tax credit question, and further submission of the views of any of the other parties on this matter. 2/

Respectfully submitted,



Lawrence J. Chandler
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 29th day of December, 1977

2/ In light of the Staff's position, we will defer responding to Applicants' argument that since the Cities' petition was dismissed by the Board, they are not parties who may be consolidated under 10 CFR § 2.715a. If appropriate, we will address this question in our response filed upon advice from the Applicants upon receipt of a ruling from the IRS.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
SOUTHERN CALIFORNIA EDISON	)	Docket Nos. 50-361 OL
COMPANY, <u>ET AL.</u>	)	50-362 OL
)	
(San Onofre Nuclear Generating)	
Station, Units 2 and 3))	

CERTIFICATE OF SERVICE

I hereby certify that copies of "MEMORANDUM OF NRC STAFF RE STATUS OF CITIES OF ANAHEIM AND RIVERSIDE" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or air mail, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 29th day of December, 1977:

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr., Member*
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
5066 State Building
San Francisco, California 94102

Rollin E. Woodbury, General Counsel
David N. Barry III, Esq.
James A. Beoletto, Esq.
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

David R. Pigott, Esq.
Chickering & Gregory
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San Francisco, California 94104

Alan R. Watts, Esq.
Rourke & Woodruff
1055 North Main Street
Suite 1020
Santa Ana, California 92701


Richard J. Wharton, Esq.
4655 Cass Street
San Diego, California 92109

Mrs. Lyn Harris Hicks
GUARD
3908 Calle Ariana
San Clemente, California 92672

Atomic Safety and Licensing
Board Panel*
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Atomic Safety and Licensing
Appeal Panel*
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555


Lawrence J. Chandler
Counsel for NRC Staff

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

12/16/77

In the Matter of)

SOUTHERN CALIFORNIA EDISON COMPANY)

SAN DIEGO GAS & ELECTRIC COMPANY)

(San Onofre Nuclear Generating)
Station, Units Nos. 2 and 3))

Docket Nos. 50-361 OL
and 50-362 OL

MEMORANDUM RE STATUS OF THE CITIES OF
ANAHEIM AND RIVERSIDE

DAVID R. PIGOTT
CHICKERING & GREGORY
Three Embarcadero Center
San Francisco, CA 94111
Attorneys for Applicants
Southern California Edison Company and
San Diego Gas & Electric Company

ROLLIN E. WOODBURY
DAVID N. BARRY, III
JAMES A. BEOLETT
2244 Walnut Grove Avenue
Rosemead, CA 91770
Attorneys for Applicant
Southern California Edison Company

December 16, 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
SOUTHERN CALIFORNIA EDISON COMPANY) Docket Nos. 50-361 OL
SAN DIEGO GAS & ELECTRIC COMPANY) and 50-362 OL
)
(San Onofre Nuclear Generating)
Station, Units Nos. 2 and 3))
_____)

MEMORANDUM RE STATUS OF THE CITIES OF
ANAHEIM AND RIVERSIDE

At the prehearing conference held in the above dockets December 6, 1977, Applicants objected to the consolidation with Applicants of the cities of Anaheim and Riverside (TR 531-537). Pursuant to discussion at that time, Applicants hereby submit this Memorandum for the Board's consideration.

At the construction permit stage, the cities of Anaheim, Riverside and Banning petitioned to intervene, and such intervention was granted (TR 61). Said intervenors were then consolidated with Applicants pursuant to 10 CFR § 2.715(a).

In the present operating license proceeding, the cities of Anaheim and Riverside petitioned to intervene. Said petition was challenged by the NRC Staff and was ultimately dismissed in this Board's Memorandum and Order of October 26, 1977. It is Applicants' position that as a result of the denial of the Anaheim and Riverside

petition, they are not parties to this proceeding.

The cities cannot be consolidated with Applicants under 10 CFR § 2.715(a) because that section only allows consolidation of "parties." The level of participation of persons not a party to the proceeding is governed by 10 CFR § 2.715. Until such time as the cities become parties, they cannot be consolidated with Applicants.

Anaheim and Riverside are not co-owners of the facilities (TR 531-532). Until such time as they become co-owners, it is inappropriate to accord them the position of co-owners. It is possible they will ultimately become co-owners, but it was believed at the time of the construction permit proceedings that the city of Banning would also become a co-owner. That did not occur.

For the above reasons, it is submitted that the cities of Anaheim and Riverside cannot be consolidated with Applicants, at least until such time as they become parties to this proceeding, and should not be consolidated with Applicants until such time as they are co-owners of the facilities.


Dated: December 16, 1977.

Respectfully submitted,

DAVID R. PIGOTT
CHICKERING & GREGORY

ROLLIN E. WOODBURY
DAVID N. BARRY, III
JAMES A. BEOLETT

By


David R. Pigott
Attorneys for Applicants

CERTIFICATE OF SERVICE

I hereby certify that on the 16th day of December, 1977, copies of the foregoing "Memorandum Re Status of the Cities of Anaheim and Riverside" were served upon each of the following by deposit in the United States mail, postage prepaid, addressed as follows:

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, CA 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
5066 State Building
San Francisco, CA 94102

Alan R. Watts, Esq.
Rourke & Woodruff
Suite 1020
California First Bank Building
1055 North Main Street
Santa Ana, CA 92701

Richard J. Wharton, Esq.
4655 Cass Street
San Diego, CA 92109

Lawrence J. Chandler, Esq.
Office of the Executive Legal Director
U. S. Nuclear Regulatory Commission
Washington, DC 20555

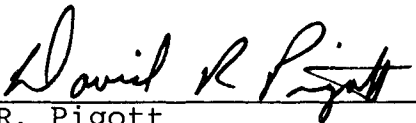
Mrs. Lyn Harris Hicks
GUARD
3908 Calle Ariana
San Clemente, CA 92672

Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Atomic Safety and Licensing Appeal Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, CA 92083

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555



David R. Pigott
Counsel for Applicants

LAW OFFICES OF

Rourke & Woodruff

SUITE 1020

CALIFORNIA FIRST BANK BUILDING

1055 NORTH MAIN STREET

SANTA ANA, CALIFORNIA 92701

JAMES G. ROURKE
THOMAS L. WOODRUFF
ALAN R. WATTS
ALAN R. BURNS

AREA CODE 714

835-G212

OF COUNSEL

KENNARD ROEMERT, JR.

December 8, 1977

December 8, 1977

Lawrence J. Chandler, Esq.
Office of the Executive Legal
Director
U. S. Nuclear Regulatory Commission
Washington, D C 20555

Re: San Onofre Units 2 and 3
Docket Nos. 50-361 OL and 50-362 OL



Dear Mr. Chandler:

With reference to the above-mentioned matter, it has recently come to my attention that some parties to the current proceeding are serving documents upon me at the City Hall in Anaheim. I am no longer located at that address. I represent Anaheim and Riverside in this proceeding.

The purpose of this letter is to inform everyone who is a party to this proceeding that proper service upon the cities of Anaheim and Riverside, California whose interests the Board has consolidated with that of the applicants can be accomplished by serving me as follows:

Alan R. Watts, Esq.
Rourke & Woodruff
1055 North Main Street
Suite 1020
Santa Ana, California 92701

Very truly yours,

A handwritten signature of Alan R. Watts in cursive script.

ALAN R. WATTS

ARW:jlm

cc: John M. Frysiak, Esq.
Dr. Cadet H. Hand, Jr.
Mr. Lester Kornblith, Jr.
Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
Mr. Lloyd von Haden
Mrs. Lyn Harris Hicks

David R. Pigott, Esq.
Richard J. Wharton, Esq.
Atomic Safety and Licensing
Board Panel
Atomic Safety and Licensing
Appeal Panel
Docketing and Service Section

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION



In the Matter of the Application of the Applicant
by SOUTHERN CALIFORNIA EDISON COMPANY and SAN DIEGO GAS AND
ELECTRIC COMPANY for facility)
operating licenses for SAN ONOFE) Docket Nos. 50-361
NUCLEAR GENERATING STATION, Unit) 50-362
Nos. 2 and 3, in San Diego County,)
California.)
_____)

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney
herewith enters an appearance in the above-entitled matter.
In accordance with 10 CFR §2.713 the following information
is provided:

Name: Alan R. Watts
Address: 1055 North Main Street
Suite 1020
Santa Ana, California 92701
Telephone: (714) 835-6212
Admission: State of California Bar

Mr. Watts is appearing on behalf of the City of Anaheim
and the City of Riverside of the State of California.

December 09, 1977

Alan R. Watts

Alan R. Watts

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

TO:

FROM: SECRETARY, NRC
WASHINGTON, D.C.

DATE OF DOCUMENT

12/6/77

DATE RECEIVED

12/12/77

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HEARING TRANSCRIPT DATED

12/6/77

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THRU

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PLANT NAME:

SAN Onofre

FOR ACTION/INFORMATION

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PROJECT MANAGER

Rood

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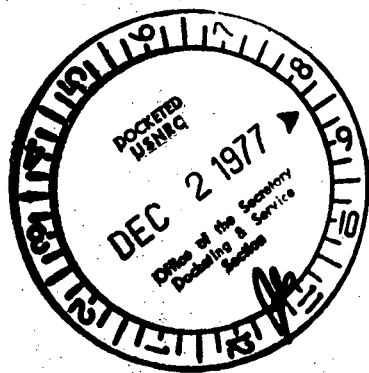
EXTERNAL DISTRIBUTION

CONTROL NUMBER

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KEG files



12/2/77

50-361362

Dorothy Drummond
25412 Charro Drive
San Juan Capistrano, Ca. 92675

November 27, 1977

Secretary of the Commission
Nuclear Regulatory Commission
Washington, D. C., 20555

Secretary of the Commission:

I respectfully request a limited appearance
at the hearing [date to be announced] on San-
Onofre units two and three. I understand
the hearing will be open to the public.

Sincerely,

Dorothy Drummond
member of Guard

Acknowledged by card

12/2/77
amw

2701 1110 Main
Laguna Beach, Ca.



Secretary of the Commission
U.S. Nuclear Regulatory Commission

U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20545
50-361,362

Dear Secretary,

I Debbie Farrell, desire to make a limited appearance at the hearing date concerning San Onofre I and II for the purpose of entering into a record my position on said proposed nuclear power plants in so far as the questions I raise are with-in the scope of the hearing.

Thank You.

Sincerely,
Debbie Farrell

Acknowledged by card 12/2/77
Crew

11/21/77

To: Secretary of the Commission
USNRC

DOCKET NUMBER

PROD. & UTIL. FAC.

50-361,362

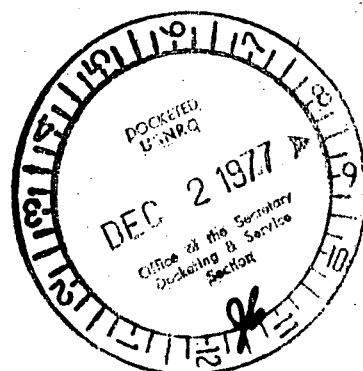
From: D. H. Appel

Sir/Madam: I would like to make a limited
appearance at the hearing on proposed reactors
San Onofre 2 & 3

Douglas H. Appel

4341 Raffel

Irvine, Ca. 92714



Acknowledged by card 12/2/77
cmw

Secy of the Commission
U SNR C



Dear Secy.

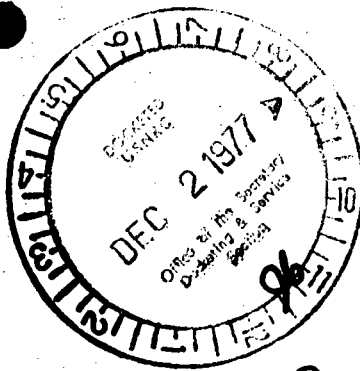
50-361,362

I wish to make a limited
appearance at the hearing
of San Enofre 2 + 3.

Thank you

Peter Carr
30832 Driftwood
S. Laguna, CA
92677

Acknowledged by card 12/2/77
Craw



11/21/77

To: Secretary of the Commission:
U.S.N. R.C.

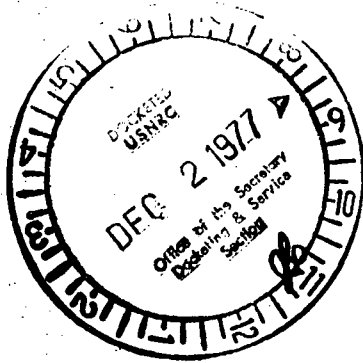
DO NOT RECORD
PRIV. & UTIL. TAG 50-361,362

Sir/Madam: I would like to
make a limited appearance at
the hearing on proposed
reactors at San Onofre #2 + #3,
to enter my opinion which would
fall within the scope of the hearing.

Thank You,
Maureen E. Schrock

MAURINE E. SCHROCK
525 EL BOSQUE
LAGUNA BEACH, CA.
92651

Acknowledged by card 12/2/77
orw



30832 Driftwood Dr.
So. Laguna, Ca 9267
Nov. 21, 1977

Secretary of the Commission
U.S. Nuclear Regulatory Commission

DOCKET NUMBER
PROD. & UTIL. EAC 50-361362

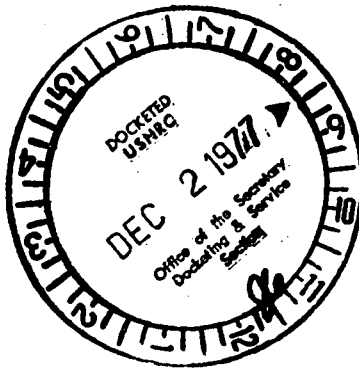
Dear Sir:

I wish to appear at the hearing concerning San Onofre II and III to enter my opinions regarding those nuclear power plants. The questions I will raise will fall within the scope of the hearing.

Sincerely,

Jean Bernstein

Acknowledged by card 12/2/77
crw



1011 Buena Vista # B
San Clemente, California
92672

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington D.C. 20555

DOCKET NUMBER

PROD. & UTIL. EAL 50-361,562

Dear Secretary,

According to the provisions of 10 CFR 2.715 of the commission's Rules of Practice, I, Mrs Wendy Ann Poirier, desire to make a limited appearance at the hearing date concerning San Onofre II and III for the purpose of entering into the record my position on said proposed nuclear power plants in so far as the questions I raise are within the scope of the hearing.

Thank you.

Sincerely,

Wendy Ann Poirier

Mrs Wendy Ann Poirier

U.S. NUCLEAR REGULATORY COMMISSION
DOCKETING & SERVICE
OFFICE OF THE SECRETARY
12/2/77
ms
1011 Buena Vista # B
San Clemente, California
92672

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

Docket No.(s) 50-361
50-362

(San Onofre Nuclear Generating)
Station, Unit Nos. 2 and 3))
)
)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this

2nd day of DEC. 1977.

C. M. Williams
Office of the Secretary of the Commission

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

SOUTHERN CALIFORNIA EDISON)
COMPANY, ET AL.)

(San Onofre, Units 1 and 2))
)

Docket No.(s) 50-361
50-362

SERVICE LIST

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Cadet H. Hand, Jr., Director
Bodega Marine Laboratory
University of California
P.O. Box 247
Bodega Bay, California 94923

Mr. Lester Kornblith, Jr.
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Office of the Executive Legal Director
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Rollin E. Woodbury, Esq.
General Counsel
Southern California Edison Company
22 Walnut Grove Avenue
Rosemead, California 91770

Chickering & Gregory
San Diego Gas & Electric Company
111 Sutter Street
San Francisco, California 94104

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, California 92083

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
California Public Utilities Commission
5066 State Building
San Francisco, California 94102

Alan R. Watts, Esq.
California First Bank Building
1055 North Main Street - Suite 1020
Santa Ana, California 92701

Richard J. Wharton, Esq.
4655 Cass Street, Suite 304
San Diego, California 92109

San Clemente Public Library
233 Granada Street
San Clemente, California 92672

Lyn Harris Hicks
Advocate for Guard
3908 Calle Ariana
San Clemente, California 92672

Hal Thomas
Director
Environmental Coalition of
Orange County
206 W. 4th Street
Santa Ana, California 92701

Board & Parties cont'd

50-361/362

Richard J. Wharton, Esq.
Friends of the Earth
124 Stear Street
San Francisco, California 94105

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,
et al.,)

(San Onofre Nuclear Generating
Station, Units 2 and 3))

) DOCKET NOS. 50-361 OL
) ~~50-362 OL~~
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)
)
)

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the above captioned proceeding. In accordance with 10 CFR & 2.713, the following information is provided:

Name	Rollin E. Woodbury
Address	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770
Telephone	(213) 572-2289
Admissions	Before the Supreme Court of the State of California
Name of Party	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770

ROLLIN E. WOODBURY

Rollin E. Woodbury
One of Counsel for
Southern California Edison Company

Dated: December 2, 1977

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DOCKET NOS. 50-361 OL
50-362 OL

Rollin E. Woodbury
One of Counsel for
Southern California Edison Company

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of)

SOUTHERN CALIFORNIA EDISON COMAPNY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

DOCKET NOS. 50-361 OL
50-362 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "Designation for Service" and "Notice of Appearance" for Rollin E. Woodbury in the above captioned proceeding have been served on the following by deposit in the United States mail, first class mail, this 2nd day of December, 1977:

John M. Frysiak, Esq , Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, CA 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
5066 State Building
San Francisco, CA 94102

Alan R. Watts, Esq.
Assistant City Attorney
City Hall
Anaheim, CA 92805

Richard J. Wharton, Esq.
4655 Cass Street
San Diego, CA 92109

Lawrence J. Chandler, Esq.
Office of the Executive Legal Director
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mrs. Lyn Harris Hicks
GUARD
3908 Calle Ariana
San Clemente, CA 92672

Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Atomic Safety and Licensing Appeal Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, CA 92083

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555

ROLLIN E. WOODBURY

Rollin E. Woodbury
Counsel for Applicants

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,
et al.,)

(San Onofre Nuclear Generating
Station, Units 2 and 3))

) DOCKET NOS. 50-361 OL
) ~~50-362 OL~~
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NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the above captioned proceeding. In accordance with 10 CFR § 2.713, the following information is provided:

Name	David N. Barry, III
Address	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770
Telephone	(213) 572-1920
Admissions	Before the Supreme Court of the State of California
Name of Party	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770

DAVID N. BARRY, III

David N. Barry, III
One of Counsel for
Southern California Edison Company

Dated: December 2, 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of

SOUTHERN CALIFORNIA EDISON COMPANY,
et al.,

(San Onofre Nuclear Generating
Station, Units 2 and 3)

) DOCKET NOS. 50-361 OL
) 50-362 OL
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DESIGNATION FOR SERVICE

Pursuant to 10 CFR § 2.708(d), the following persons are
designated as those on whom service may be made on behalf of
Southern California Edison Company:

David N. Barry, III
James A. Beoletto
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

Executed at Rosemead, California, this 2nd day of
December, 1977.

DAVID N. BARRY, III

David N. Barry, III
One of Counsel for
Southern California Edison Company

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

DOCKET NOS. 50-361 OL
50-362 OL

CERTIFICATE OF SERVICE

I hereby certify that copies of "Designation for Service" and "Notice of Appearance" for David N. Barry, III in the above captioned proceeding have been served on the following by deposit in the United States mail, first class mail, this 2nd day of December, 1977, as follows:

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, CA 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
5066 State Building
San Francisco, CA 94102

Alan R. Watts, Esq.
Assistant City Attorney
City Hall
Anaheim, CA 92805

Richard J. Wharton, Esq.
4655 Cass Street
San Diego, CA 92109

Lawrence J. Chandler, Esq.
Office of the Executive Legal Director
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mrs. Lyn Harris Hicks
GUARD
3908 Calle Ariana
San Clemente, CA 92672

Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Atomic Safety and Licensing Appeal Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, CA 92083

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555

DAVID N. BARRY, III

David N. Barry, III
Counsel for Applicants

12/2/77

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))

DOCKET NOS. 50-361 OL
50-362 OL

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the above captioned proceeding. In accordance with 10 CFR § 2.713, the following information is provided:

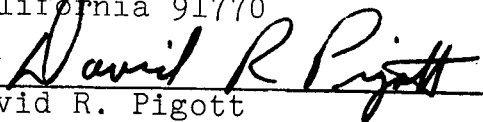
Name David R. Pigott

Address Chickering & Gregory
Three Embarcadero Center
23rd Floor
San Francisco, CA 94111

Telephone (415) 393-9274

Admissions All Courts of the State of California
Supreme Court of the United States
Court of Appeals, Ninth Circuit and District
of Columbia Circuit
District Court, Northern and Eastern
Districts of California

Name of Party San Diego Gas & Electric Company
Post Office Box 1831
San Diego, California 92112
and
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770



David R. Pigott
Counsel for
Southern California Edison Company
and
San Diego Gas & Electric Company

Dated: December 2, 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of

SOUTHERN CALIFORNIA EDISON COMPANY,
et al.,

(San Onofre Nuclear Generating
Station, Units 2 and 3)

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) DOCKET NOS. 50-361 OL
) 50-362 OL
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DESIGNATION FOR SERVICE

Pursuant to 10 CFR § 2.708(e), the following persons are designated
as those on whom service may be made on behalf of San Diego Gas &
Electric Company:

David R. Pigott
Allan J. Thompson
Chickering & Gregory
Three Embarcadero Center
23rd Floor
San Francisco, California 94111

Executed at San Francisco, California, this 2ND day of
December, 1977.

David R. Pigott
David R. Pigott
One of Counsel for
San Diego Gas & Electric Company

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of

SOUTHERN CALIFORNIA EDISON COMPANY,
et al.

(San Onofre Nuclear Generating
Station, Units 2 and 3)

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) DOCKET NOS. 50-361 OL
) 50-362 OL
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CERTIFICATE OF SERVICE

I hereby certify that copies of "Designation for Service" and
"Notice of Appearance" for David R. Pigott in the above
captioned proceeding have been served on the following by
deposit in the United States mail, first class mail, this
2nd day of December, 1977:

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Cadet H. Hand, Jr., Member
Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, CA 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Janice E. Kerr, Esq.
J. Calvin Simpson, Esq.
Lawrence Q. Garcia, Esq.
5066 State Building
San Francisco, CA 94102

Alan R. Watts, Esq.
Assistant City Attorney
City Hall
Anaheim, CA 92805

Richard J. Wharton, Esq.
4655 Cass Street
San Diego, CA 92109

Lawrence J. Chandler, Esq.
Office of the Executive Legal Director
U. S. Nuclear Regulatory Commission
Washington, DC 20555


Mrs. Lyn Harris Hicks
GUARD
3908 Calle Ariana
San Clemente, CA 92672

Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Atomic Safety and Licensing Appeal Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, CA 92083

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555



David R. Pigott
Counsel for Applicants

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of

SOUTHERN CALIFORNIA EDISON COMPANY,
et al.,

(San Onofre Nuclear Generating
Station, Units 2 and 3)

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) DOCKET NOS. 50-361 OL
) 50-362 OL
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NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney herewith enters an appearance in the above captioned proceeding. In accordance with 10 CFR § 2.713, the following information is provided:

Name	James A. Beoletto
Address	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770
Telephone	(213) 572-1900
Admissions	Before the Supreme Court of the State of California
Name of Party	Southern California Edison Company 2244 Walnut Grove Avenue Rosemead, California 91770

JAMES A. BEOLETTO

James A. Beoletto
One of Counsel for
Southern California Edison Company

Dated: December 2, 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of)

SOUTHERN CALIFORNIA EDISON COMPANY,)
et al.,)

(San Onofre Nuclear Generating)
Station, Units 2 and 3))
_____)

DOCKET NOS. 50-361 OL
50-362 OL

DESIGNATION FOR SERVICE

Pursuant to 10 CFR § 2.708(d), the following persons are
designated as those on whom service may be made on behalf of
Southern California Edison Company:

David N. Barry, III
James A. Beoletto
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

Executed at Rosemead, California this 2nd day of December,
1977.

JAMES A. BEOLETTO

James A. Beoletto
One of Counsel for
Southern California Edison Company

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of

SOUTHERN CALIFORNIA EDISON COMPANY,
et al.,

(San Onofre Nuclear Generating
Station, Units 2 and 3)

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) 50-362 OL
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CERTIFICATE OF SERVICE

I hereby certify that copies of "Designation for Service" and "Notice of Appearance" for James A. Beoletto in the above captioned proceeding have been served on the following by deposit in the United States mail, first class mail, this 2nd day of December, 1977:

John M. Frysiak, Esq., Chairman
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, DC 20555

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Director, Bodega Marine Laboratory
University of California
P. O. Box 247
Bodega Bay, CA 94923

Mr. Lester Kornblith, Jr., Member
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
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4655 Cass Street
San Diego, CA 92109

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Office of the Executive Legal Director
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Washington, DC 20555

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San Clemente, CA 92672

Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, DC 20555

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U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Lloyd von Haden
2089 Foothill Drive
Vista, CA 92083

Docketing and Service Section
Office of the Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555

JAMES A. BEOLETTO

James A. Beoletto
Counsel for Applicants