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ORIGINAL

Decision No. 82763

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the matter of the application of SOUTHERN CALIFORNIA EDISON COMPANY for a Certificate that Present and Future Public Convenience and Necessity require or will require the construction and operation by Applicant of new gas turbine electric generating units, to be used in combination with Units 8R and 9 at its Long Beach Generating Station, together with other appurtenances to be used in connection with said units.	Application No. 53418 (Filed June 2, 1972)

Rollin E. Woodbury, Robert J. Cahall, William E. Marx, H. Robert Barnes, Hobart D. Belknap, by William E. Marx, Attorney at Law, for Southern California Edison Company, applicant.
Ruth Russell, for Long Beach Tuberculosis & Respiratory Disease Association; Louis Possner, for the City of Long Beach; Mrs. Traute Moore, for Los Angeles County League of Women Voters; C. William Simmons, Attorney at Law, for State Air Resources Board; interested parties.
Walter H. Kessenick, Attorney at Law, and Kenneth J. Kindblad, for the Commission staff.

O P I N I O N

On June 21, 1972 Southern California Edison Company (Edison) filed this application pursuant to Section 1001 of the Public Utilities Code, and General Order No. 131 of the Commission, for a certificate of public convenience and necessity to convert its Plant No. 2 at the Long Beach Generating Station to a combined cycle process and increase its generating capacity from 148 megawatts to 585 megawatts.

Generally, a combined cycle process is a gas turbine power cycle that uses heat recovery boilers and a steam turbine generator to recover some of the energy from gas turbine exhaust that would normally be lost. Under the authority sought, Plant No. 2 would be modernized and repowered by converting its existing steam turbine generator units 8R and 9 to combined cycle by installing seven 61 MW gas turbine generator sets and seven heat recovery boilers, which without supplementary firing will use the exhaust heat of the gas turbines to produce the steam supply for steam turbine generating units 8R and 9. The on-site construction includes extensive alterations to the existing boiler building, new and higher stacks, enclosures to house the new gas turbine generator sets, and an outdoor switchyard as well as two fuel storage tanks and other appurtenances. Off-site construction consists of new transmission lines on existing poles and towers in presently used rights-of-way.

An environmental report for this project was completed by Edison in August 1972. At that time the Commission staff arranged through the State Resources Agency for review of this report by the Departments of Conservation, Fish and Game, Navigation and Ocean Development, and Water Resources and by the State Air Resources Board, the State Lands Division of the State Lands Commission, and the State Water Resources Control Board. On September 25, 1972 the Commission issued its Notice of Hearing in this application which, among other things, called attention to the fact that applicant's environmental report was available for inspection at various locations by the general public. Public hearings were held before Examiner Main on October 31, and November 1, 1972 in Long Beach, and on December 4, 15, and 27, 1972 in Los Angeles. Concurrent briefs due January 26, 1973 and concurrent reply briefs due February 16, 1973 were filed and the matter was submitted as of the latter date.

On April 3, 1973 the Commission promulgated Rule 17.1, Special Procedure for Implementation of the California Environmental Quality Act of 1970 (CEQA). In this rule procedures for the preparation and submission of environmental documents in matters before the Commission were established in conformance with the principles, objectives, definitions, and criteria of CEQA and of the Guidelines for Implementation of the California Environmental Quality Act promulgated by the Office of the Secretary for Resources (Guidelines).

Although the substantive requirements of Rule 17.1 are to be met in this proceeding, it should be recognized that a comprehensive record on all environmental aspects of the proposed project already had been developed at public hearings by the time the new rule took effect. Pursuant to Paragraph E.1.e. (now Paragraph (e)(2)(E)) of Rule 17.1, Edison filed on May 24, 1973 a motion for a Negative Declaration based on its evaluation of the evidence on environmental matters in this proceeding. On June 6, 1973 the Air Resources Board filed its response in opposition to that motion.

At about this time Edison's application for a permit to construct the Long Beach Combined Cycle Project was before the South Coast Regional Coastal Zone Conservation Commission. By Section 27402(a) of the Public Resources Code the coastal zone conservation commissions are barred from issuing permits unless they find that projects will not have any substantial adverse environmental or ecological effect.

On May 31, 1973 by a ten to one vote the South Coast Regional Coastal Zone Conservation Commission approved this project after imposing certain conditions. Appeal was made to

the California Coastal Zone Conservation Commission. The latter commission on August 8, 1973 by a nine to one vote granted Permit No. 82-73 authorizing the project subject to the following terms and conditions:

> "1. Within one year of commencement of operation of the combined cycle plant, the applicant shall succeed in reducing the rate of NOx emissions from each gas turbine to at least the level of 113 lbs/hr per gas turbine (which is equivalent to 1.35 lbs/MWHr for the entire project), the level presently predicted for the turbines by the applicant. Thereafter, the applicant shall use its continued best efforts to attempt to achieve the lowest possible levels of NOx emissions for the plant. For the purposes of this condition, until the prescribed limit is attained, the applicant shall, at the end of each month, submit to the South Coast Regional Commission, the Public Utilities Commission, the Air Resources Board, and the LAAPCD, a report describing the NOx emission levels achieved. If at the end of the one-year period, the prescribed limit has not been met, the applicant may apply to the Regional Commission for an extension of reasonable length. The applicant may be granted such extension upon a showing of continued good faith efforts and substantial progress in reducing NOx emission levels.
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> "2. The applicant shall operate the proposed project at a maximum monthly average capacity factor of 34% unless
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> "a. The applicant is ordered by the PUC, the ARB, the LAAPCD, or the EPA to run the plant at a higher capacity factor for purposes of reducing total system NOx emissions for the South Coast Air Basin, or for any other legitimate public purpose; or
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> "b. The applicant is required by temporary emergency power demand requirements to operate the plant for a temporary period at a monthly average capacity factor in excess of 34%, in which event the applicant shall immediately file with the South Coast Regional Commission a report describing the nature of the emergency and the variant use of the plant.

"3. The applicant shall be required to use a closed cycle freshwater cooling tower(s) for the project unless, pursuant to procedures outlined hereinbelow, it can conclusively demonstrate in a future permit hearing before the South Coast Regional Commission that the existing cooling system and thermal waste discharge will have no substantial adverse environmental or ecological effect on the Back Channel or the Inner Harbor. The applicant shall begin immediately to design the cooling tower(s) for the plant, and at the earliest possible date shall begin to use its best efforts to obtain the necessary governmental approvals for construction and use of the cooling tower(s). The applicant shall be entitled in the meantime to proceed with construction of the combined cycle plant, and may commence operation of the plant utilizing the existing cooling system. The cooling tower(s) shall be put into use, equipped with the best available defogging equipment, within 26 months after operation of the complete combined cycle plant has begun. However, at any time after operation, but prior to the expiration of the 26 month period of the plant using the existing cooling system has begun, the applicant may apply to the South Coast Regional Commission for a permit to operate the plant permanently using the existing cooling system, instead of the cooling tower. Such permit should be granted by the South Coast Regional Commission only after the applicant, by a showing of data developed in cooperation with all interested governmental agencies including but not limited to the Regional Water Quality Control Board and the Department of Fish and Game, has clearly met its burden of proof under Section 27402 of the Act regarding potential harm to the marine life of the Back Channel and the Inner Harbor. This permit application will pertain only to the proposed use of the existing cooling system, and shall not involve consideration of other aspects of the combined cycle plant.

"If the applicant does not succeed in obtaining the requisite governmental agency approvals for a cooling tower, it must proceed to the South Coast Regional Commission with an application for a permit for its existing cooling system, or for whatever alternative

cooling system, it may propose. The permit application shall be limited to the proposed cooling system, and shall not involve other aspects of the combined cycle. The applicant's burden of proof shall be identical to that described in the immediately foregoing paragraph.

"Compliance with the conditions of this permit shall be monitored and enforced by the South Coast Regional Coastal Conservation Commission and the California Coastal Zone Conservation Commission, or by their successors; and if there are no successors, then by the Los Angeles Regional Water Quality Control Board and the State Water Quality Control Board."

On September 27, 1973 Examiner Main issued a Negative Declaration for this project pursuant to Rules 17.1 and 63 of the Commission's Rules of Procedure in conformance with CEQA and the Guidelines. At a later point in this decision in conjunction with the discussions on environmental matters we will have more to say about the foregoing developments which occurred subsequent to the public hearings held in this matter. At this juncture it appears appropriate to turn to a description of the project, the need for additional generating capacity, and the alternatives to the project.

Project Description

The site of the existing Long Beach Generating Station consists of approximately 43 acres of land situated in the northeast portion of Terminal Island, Long Beach, County of Los Angeles, California. Under Edison's proposal to modernize Plant No. 2 of this generating station into Long Beach Combined Cycle Units Nos. 8R and 9, the existing 15 steam boilers in Plant No. 2 would be replaced with seven new gas turbine generator sets and seven new waste heat recovery boilers. The existing Steam Turbine Generators Units Nos. 8R and 9 will be renovated and used in the new cycle. The existing 66 KV switch house will be demolished

and a new 66 KV switchyard constructed. No additional transmission structures will be required outside the station area.

Long Beach Combined Cycle Unit No. 8R will have a rated capacity of 335 MW and will include gas turbine and waste heat boiler units Nos. 1 through 4 to be used in conjunction with steam turbine generating unit No. 8R. Similarly Long Beach Combined Cycle Unit No. 9 will have a combined cycle rated capacity of 250 MW and will include gas turbine and waste heat boiler units Nos. 5 through 7 to be used in conjunction with steam turbine generating unit No. 9. The overall heat rate at rated plant output of 585 MW is estimated to be 8,886 Btu per KWHr on distillate fuel and 9,215 Btu per KWHr on natural gas.

The cooling system for the Long Beach Combined Cycle Project will be the existing once-through salt water cooling system for existing units Nos. 8R and 9. Instrument monitoring of temperature of the water prior to discharge will be provided. The proposed combined cycle units running at 585 MW, including both the gas turbine and steam cycle generation, will use 141,000 gallons of cooling water per minute. This is the same amount of cooling water required by existing units 8R and 9 when generating 148 MW.

All of the output from the generators of combined cycle unit No. 8R and the output from the steam turbine generator of combined cycle unit No. 9 will be connected to the 66 KV system. One 66 KV circuit will be routed to Pico Substation. This will be accomplished by using an idle circuit part of the way and adding conductors on existing poles the rest of the way. The output from the generators of gas turbine units Nos. 5 through 7 of combined cycle unit No. 9 will be connected to the 220 KV transmission system via a new position on the 220 KV switch rack.

No new 220 KV transmission facilities are required. No additional transmission structures will be required outside the station area for either the 66 KV or 220 KV transmission systems.

The contemplated capacity factor of operation for the proposed Long Beach Combined Cycle Installation is a maximum of 34 percent during the years 1976 through 1980 and a lifetime capacity factor of 26 percent. The combined cycle has inherent flexibility particularly suitable for this semi-peaking mode of operations and, in addition, an outage of one of the principal components such as a gas turbine would still permit the combined cycle unit to be operated, but of course at reduced capacity.

In performing in a semi-peaking mode in meeting Edison's load requirements the combined cycle project offers important advantages over the present semi-peaking operation. At the present time the semi-peaking load requirements are being met by oil-and-gas-fired thermal generation. These stations, when operated at reduced loading necessary during off-peak periods, are significantly less efficient and, consequently, the production of atmospheric emissions is not reduced in proportion to the reduced loading. In contrast the proposed combined cycle installation can be shut down entirely during low load periods or can be reduced effectively to a nearly no-load condition. This is possible because the seven gas turbine units are quick-starting and can be brought on the system as required.

Commercial operation of the Long Beach Combined Cycle Unit No. 8R was originally scheduled for November 1, 1974 and Long Beach Combined Cycle Unit No. 9 for August 1, 1975. As a result of the delays which have been experienced the total project is not expected to be operational earlier than late 1976.

The capital cost of the proposed Long Beach Combined Cycle Project of $92,750,000, or $158.54 per KW of generating capacity, compares favorably with other potential combined cycle

plants and with recent designs of oil-and-gas-fired steam generating units designed for cycling or a semi-peaking mode of operations. Edison proposes to finance the construction of this project from available funds, or funds to be obtained from the sale of securities.

The Need for Additional Generating Capacity

It has been four years since Edison has been able to start construction on a new major generation project, that one being Ormond Beach Unit No. 2 (Decision No. 75909 dated July 8, 1969 in Application No. 50630). Since then the peak demand on Edison's system has increased by about 40 percent.

The load growth projections used by Edison in this proceeding indicate its net system peak demand will increase at a compound rate of about 7 percent per year over the next decade. This growth rate, which is lower than that experienced by Edison during rapid expansion of the past 15 years, reflects a decreased rate of population growth, caused primarily by decreased net in-migration, and an expected slowing in the rate of increase in usage per customer. The recorded net system peak demands during the 1966 through 1972 period and Edison's projections of these peak demands through the year 1982 are shown below. The Commission staff believes that these peak load projections made by Edison, while not infallible, were when prepared both reasonable and soundly based.

NET SYSTEM PEAK DEMAND

Year	Megawatts	Increase Over Prior Year Megawatts	Increase Over Prior Year Percent
1966 (*)	6,173	310	5.3
1967 (*)	7,001	828	13.4
1968 (*)	7,425	424	6.1
1969 (*)	7,804	379	5.1
1970 (*)	8,274	470	6.0
1971 (*)	9,350 (***)	1,076	13.0
1972 (*)	9,815	465	5.0
1973 (**)	10,390	575	5.9
1974 (**)	11,150	760	7.3
1975 (**)	11,970	820	7.4
1976 (**)	12,830	860	7.2
1977 (**)	13,740	910	7.1
1978 (**)	14,710	970	7.1
1979 (**)	15,740	1,030	7.0
1980 (**)	16,830	1,090	6.9
1981 (**)	17,990	1,160	6.9
1982 (**)	19,220	1,230	6.8

* Indicates recorded.
** Indicates estimated.
*** In late August 1971, an abnormal heat wave caused a peak power demand of 9,350 megawatts. This demand was 4.5% higher than had been forecast, illustrating a need for reserve generating capacity to cover this type of contingency which is not normally reflected in estimated reserve capacity margins.

Under its resources addition program Edison plans to increase its installed and purchased capacity of 12,568 MW as of the fall of 1972 to 16,351 MW by the late spring or early summer of 1977 by adding 966 MW (primarily Ormond Beach Unit No. 2 - 800 MW) in 1973, 1,105 MW in 1974 and 1975, 801 MW in 1976, and 911 MW in 1977. The 585 MW Long Beach Combined Cycle Project represents about one-half of the capacity addition planned for 1974 and 1975. Edison does not now have the approvals necessary to construct any of the major generating units that are planned for the mid-1970's.

Without completing the proposed Long Beach project in 1975 the adequacy of the resources addition program would become marginal if actual peak demand in that year equals or exceeds the projected level. In 1976 Edison's summer reserve margin would decrease to 13.8 percent before deducting maintenance which is below the 15 percent considered to be minimally acceptable and the reliability index would decrease to .864, an unacceptable level. Furthermore, there is no assurance that other resources scheduled for addition in 1974-1977 time period will be constructed and operating on schedule.

However, the peak load projections used in these determinations of future service reliability do not reflect electrical energy conservation measures which have been taken recently in response to the fuel shortage. It is to be expected that these measures which reduce electrical energy consumption would also tend to reduce the growth rate in system peak load occurring at the time of the maximum air-conditioning loads during the summer. While the reduction which is likely in the growth rate of system peak demand cannot be quantified at this time, it nevertheless seems probable that the delays experienced by Edison in obtaining the necessary approvals to construct the proposed Long Beach project, making its completion unlikely before the end of 1976, should offset the effects of that reduction.

The evidence presented by Edison and tested by the other parties in this proceeding supports a need for its planned resources additions. However, because of delays on the one hand and conservation measures on the other hand, the timing and need for 1100 MW of additional generating capacity planned by Edison for the 1974-1975 period has probably been extended to 1974-1976 time frame. The proposed Long Beach project represents about 50 percent of these planned capacity additions and is the

only one of the major projects planned which could in fact be completed in the 1974-1976 time frame.

Generating Capacity Alternatives

Overall resource planning is based on adequately meeting the requirements of load at the lowest cost consistent with environmental considerations and reliability of power supply. This dictates the generation resource mix should include base load or high load factor generation, generation suitable for operation in the intermediate load factor range, and generation suited for semi-peaking operation.

The proposed Long Beach Combined Cycle Project constitutes an important resource addition which can be made available in the years 1975 and 1976. Due to the short lead times available it is not possible to construct nuclear, coal, conventional oil and gas, or hydro units. Other than the proposed Long Beach Combined Cycle Project, the only types of generating units which could reasonably be constructed in this short time period are gas turbines. Since the Long Beach Project utilizes existing steam turbines, the implementation of a similar installation at another location would not be possible because of the short time remaining. If straight gas turbine peaking units were to replace the proposed Long Beach Combined Cycle Project in order to satisfy the reliability criterion from a capacity standpoint, the majority of the resulting energy deficiency would have to be made up by older oil- and gas-fired units. Most of these older units are located in the South Coast Air Basin. Because of the natural gas shortage, essentially all additional fuel would be in the form of low sulfur fuel, resulting in increased air emissions.

The possibility of importing additional power from generating facilities outside the South Coast Air Basin is not considered a viable alternative. Although large coal-fired generating stations

exist in the four corners area of Arizona and New Mexico and Utah, no excess capacity exists for importation to Southern California. The transmission interconnections between the Edison system and four corners region and other areas such as the Pacific Northwest are being utilized to bring in the available firm capacity from these areas. Neither the Pacific Gas & Electric Company nor the Department of Water & Power of the city of Los Angeles are expected to have surplus capacity available which Edison could count on in its resource planning.

In summary, the alternative to the proposed Long Beach project is equivalent capacity in peaking units consisting of straight gas turbines.

Environmental Report

As previously stated, Edison's environmental report for the Long Beach Combined Cycle Project (Exhibit 14) was completed in August 1972 at which time the Commission staff arranged through the State Resources Agency for its review by the Departments of Conservation, Fish and Game, Navigation and Ocean Development, and Water Resources; the Air Resources Board; the State Lands Division of the State Lands Commission; and the State Water Resources Control Board. Their comments and Edison's responses to the comments are included in Exhibits 15, 19, 20, and 22.

The impacts of the Long Beach Project on land usage, noise levels, and aesthetics are summarized below and appear minimal.

Land Usage: The project represents a continuation of a utility use of utility-owned property. At present the land in the Long Beach Harbor Complex within a one-mile radius of the Long Beach Generating Station is almost exclusively devoted to industrial usage. While future expansions of the harbor facilities are expected in the next 20 years, use of adjacent land is expected

to remain consistent with present land use surrounding the Long Beach Generating Station. The construction of the proposed project does not affect archaeological or historical resources.

Noise Abatement: Noise attenuation will be achieved by installing the gas turbine generator sets in properly designed enclosures complete with inlet and outlet silencers. The sound level within the existing building of Plant No. 2 containing the heat recovery boilers and the new building with the gas turbine generator sets will be less than 85 dbA with all units in operation. Because of the sound attenuation treatment the proposed gas turbine generator units should not add to the ambient noise levels in the area.

Aesthetics: Although not incompatible with its industrial surroundings, the existing Long Beach Generating Station is unattractive. To render the station and grounds more visually acceptable the design objectives of the proposed project include (a) organization of the various site components such as structures, equipment, and parking lots in a neat, functional manner with a minimum of visual clutter, (b) integration and enhancement of the appearance of Plant No. 2 through the application of appropriate textural and color treatments, and (c) utilization of appropriate landscaping treatments and decorative walls to reduce adverse visual impacts from points of public view. A detrimental effect of the proposed project on local visual environment could be the stacks for Plant 2, which would be reduced in number but increased in height, and the tanks for expanded fuel storage serving this and other Edison generating stations. Otherwise the visual appearance of the station would be improved by the proposed project.

With respect to growth inducement the Long Beach project as an integrated system generating resource can affect growth in the Edison service territory to the extent reliable electric service

exercises such an influence. The project's purpose, however, is to maintain reliable electric service to customers served by the integrated system by responding to growth rather than to cause growth. Growth causation involves a multitude of factors including such attractions as climate and economic opportunity. In the no-projects alternative, reliable electric service could not be maintained for either presently existing customers or new customers on the Edison system as sufficient load growth occurs.

The Project and Its Effect on Air Quality

On numerous occasions ambient air quality at diverse locations in the South Coast Air Basin (Basin) fails to meet the standards established by California and the federal government. The location of the sources of air pollution emissions, both mobile and stationary, in combination with the movement of air masses within the Basin tend to make the air quality problem basinwide in extent. The severity of this air quality problem is well-known, continues to mandate measures to reduce emissions, and clearly militates against approving projects which would increase air pollution emissions in the Basin.

Several million motor vehicles continue to be the predominant source of these emissions. They are also by far the major source of hydrocarbons and nitric oxide which are the primary contaminants leading to photochemical smog, a photochemical reaction in the atmosphere between reactive hydrocarbons and nitrogen oxides in the presence of sunlight and oxygen.

Power plants in contrast to motor vehicles emit only nominal quantities of hydrocarbons. An inventory of emissions of oxides of nitrogen (NO_x) by sources for the year 1970 together

with the projected levels for the year 1980 provided by the staff of the Air Resources Board (ARB) follows:

Average NO_x Emissions in Tons Per Day in South Coast Air Basin

Sources	Year 1970	Year 1980
Mobile	1210	320
Stationary		
Power Plants	135	135
Other	225	257
Total	1570	712

From this tabulation it appears that power plants have accounted for a comparatively small share of total NO_x emissions, i.e., about 9 percent versus 77 percent for mobile sources, in 1970. Nevertheless, power plants represent a substantial source of NO_x emissions and because they do this Commission has been taking appropriate actions.

In this regard by Decision No. 77400 (71 CPUC 211) dated June 23, 1970 in Application No. 51294 and Case No. 9007 Edison was required to convert its load dispatch system from the most economical basis to a basis of least NO_x emissions into the Basin, to modify its existing power plants within the Basin, other than those on cold-standby, so as to reduce NO_x emissions per kilowatt-hour generated, and to monitor NO_x emissions. It should be emphasized that these actions may not result in a reduction in total emissions from Edison's Basin power plants from one year to a subsequent year but do result in less emissions into the Basin than otherwise would occur for the total generation of electric energy by Edison required in a given year. In its

essence the decision in that proceeding was directed toward achieving less emissions into the Basin than otherwise would occur while still meeting the electric energy loads in Edison's service territory.

The ARB and its staff want to hold Basin power plant NO_x emissions at the present level or reduce them. The situation over the next several years, however, is such that emissions by Edison's power plants in the Basin will increase if electrical energy requirements are met and will do so either with or without the Long Beach combined cycle units. In the longer range the ARB objective can become achievable. Planned additions of nuclear plants, remote coal plants and out-of-Basin plants will, if made, act to reduce Basin emissions even though system demand is increasing.

Significantly, the fact that the Long Beach Combined Cycle Project would increase Edison's generating capacity in the Basin by 440 MW and maintain reliability of service does not mean that there will be more energy generated by Edison in a given year within the Basin if the project is carried out than if it is not. This is the case because the least NO_x dispatch system requires the extensive use of generating resources outside the Basin and because the presently existing Basin generating units would have to be operated at a higher capacity factor in the aggregate than that required with the Long Beach project built and operating. As an outcome of these factors the total energy generated in the Basin by Edison during a given year with or without the Long Beach combined cycle units in operation tends not to vary so long as sufficient generating capacity remains available, after deducting units down either for scheduled maintenance or

because of unscheduled outages, to meet the system load requirements. Thus operation of the Long Beach combined cycle units will cause less use of 585 MW of capacity in older, less efficient, and higher NO_x emitting Basin units than otherwise would be required, while maintaining reliability of service, fulfilling a need for generating units suitable to intermediate load or semi-peaking operation, and not increasing energy generation in the Basin.

In addition, it should be made clear at this point that the proposed Long Beach Combined Cycle Project is compatible with the objective of reducing emissions in the Basin in the sense that without this project there will be slightly more Basin emissions than with it. Thus, any opposition to this project on the grounds of its increasing Basin emissions in the short run is misplaced. It is also misplaced in the longer run unless Edison is not permitted to build more nuclear plants and out-of-Basin plants.

Similarly, if neither the Long Beach combined cycle units nor Edison's other proposed project are built, i.e., only presently authorized generating resources are available as load growth occurs, there will be a larger increase in emissions into the Basin from Edison's power plants accompanied by markedly decreasing reliability of electric service. The larger increase in emissions would be attributable in part to a further increase in use of older, less efficient, higher NO_x emitting Basin units, including the existing units at the Long Beach Generating Station now on cold-standby. While the operation of the existing Long Beach units could be required either currently or in the near future in emergency situations involving sufficient simultaneous unscheduled outages of generating resources, later on their operation would be required on a scheduled basis, which would increase as load growth occurs, if generating resources are not added.

From the standpoint of air emissions this increased dependence on the existing generation facilities at the Long Beach Station is inadvisable. A before-and-after comparison of emission characteristics of Plant 2 - Units Nos. 8R and 9 -- of this station, as part of the proposed modernization and conversion to combined cycle, depicts this. The existing plant, when operated at its rated 148 MW capacity on low sulfur, low ash oil fuel (little, if any, natural gas is expected to be available), emits one-fourth more NO_x and twice as much SO_2 and particulates from 120-foot stacks than would be emitted by the 585 MW combined cycle units, under full load operation on distillate fuel, from 220-foot stacks.

Furthermore, this is not a comparison of equivalents. Considering equal generating capabilities, it seems clear the construction and operation of the Long Beach Combined Cycle Project would reduce NO_x emissions into the Basin during peak load periods, when the older units would likely be operating (in absence of the Long Beach Combined Cycle Project), by amounts ranging up to several times the rate of 12 tons per day at continuous full load for the Long Beach Combined Cycle Project. The extent of this reduction in total NO_x and other emissions in the Basin by Edison's power plants during such peak periods is not revealed when only daily averages are considered on an annual basis.

Operation of the Long Beach combined cycle units would, as has been repeatedly brought out, cause less operation of older, less efficient, and higher NO_x emitting Basin units, thereby working toward decreasing the Basin NO_x emissions by Edison's power plants. More specifically, operation of the Long Beach combined cycle units at a 34 percent capacity factor[1/] would

[1/] Edison's planned operation of this project reflects a lifetime capacity factor of 26 percent and calls for the plant being operated at a higher factor, on the order of 34 percent, during the early years and somewhat less than 26 percent during later years.

result, for the same total system energy generation, in a small reduction in average NO_x emissions into the Basin, which according to Exhibit 22 would be on the order of one to two tons per day in year 1976. This would be accompanied by a larger reduction in emissions of SO_2.

This small difference in average NO_x emissions into the Basin is not significant. Similarly, the resultant shift in emissions to the Long Beach location from Edison's other coastal plants would not be significant, since the other locations involved are upwind of heavily populated areas of Los Angeles and Orange Counties. What is significant is that reliable electric service can be maintained with the Long Beach Combined Cycle Project while actually achieving a slight reduction in Basin NO_x emissions. Moreover, if the Long Beach combined cycle units are not installed, retirements of older, less efficient, higher NO_x emitting Basin units, although dependent on careful consideration of a number of factors, could only be delayed because the capacity from these units would be required to supply system load requirements.

In this context and perspective a further small reduction in Basin NO_x emissions, also on the order of one to two tons per day, would result if the Long Beach combined cycle units were operated at a capacity factor substantially higher than 34 percent or if these units could achieve the same specific NO_x emissions rate (mass of NO_x emissions per unit of electric energy generated) as that expected from Edison's proposed Huntington Beach combined cycle units. A higher capacity factor operation would probably be accompanied by substantially higher fuel costs relative to that for the displaced generating capacity and by less system operational flexibility with attendant exposure to a lessening of reliability of service. A specific NO_x emissions rate comparable to Huntington Beach can be approached but not reached under the Long Beach design.

In relation to the Long Beach Combined Cycle Project the proposed Huntington Beach facility will produce a greater fraction of its generation from the steam turbines and do so through employing new steam turbines and supplementary firing in the waste heat boilers to provide higher energy steam. This supplementary firing which takes place in the flue gas from the combustive turbines' exhaust produces only a nominal additional quantity of NO_x. A specific NO_x emission rate of 1.19 pounds per MWHr is expected to be achieved by the proposed Huntington Beach facility.

For operation of the 585 MW of capacity of the proposed Long Beach facility at an annual capacity factor of 34 percent, the average NO_x emissions would be 2.8 tons per day on the basis of the Huntington Beach specific emissions rate of 1.19 pounds per MWHr and 4.0 tons per day on the basis of the specific emissions rate of 1.68 pounds per MWHr initially indicated for Long Beach. It appears, however, that a specific NO_x emissions rate of 1.35 pounds per MWHr, equivalent to 3.2 tons per day at a 34 percent capacity factor operation, can now be expected for the Long Beach combined cycle units consonant with one of the conditions imposed by the California Coastal Zone Conservation Commission in issuing its permit for construction of these units.

If this improvement in the specific emissions rate can in fact be achieved, the rate expected from the proposed Huntington Beach facility will be lower by only 0.16 pounds of NO_x per MWHr generated. In any event the proposed Long Beach project, by having the steam turbine portion of the plant already in place and the new combustive turbines and waste heat boilers selected expressly to be operated with these older steam turbines, cannot be modified to fit the Huntington Beach design. To make this fit requires a whole new project causing a delay of one to two years in making needed generating capacity available and a comparative

increase in project costs of $24,000,000 or about 25 percent, as well as a substantial increase in the thermal discharge for the same generating capacity. Actually, the capacity would be different because each Huntington Beach-type combined cycle module has a capacity of 236 MW.

A change to the Huntington Beach combined cycle concept for Long Beach is unacceptable because the needed additional generating capacity could not be made available in time. In addition, the reduction of as little as 0.16 pounds per MWHr in the specific NO_x emissions rate would come at the price of substantially higher plant costs while substantially increasing the thermal discharge.

From the time standpoint as pointed out previously, the only type of generating facilities, other than the Long Beach combined cycle units, which could be constructed for 1974-1976 operation are straight combustive turbines. These, without the combined cycle feature available at Long Beach, would result in more emissions per MWHr generated.

Thus far the project and its effect on air quality has been examined from the standpoint of emissions into the Basin. The focus will now turn to an examination of the contribution of such emissions to concentrations of NO_x in the ambient air, especially at ground level where desired air quality is prescribed by standards. The California ambient air quality standard for NO_2 is 0.25 ppm as an hourly average.

To predict the contribution from the proposed Long Beach Combined Cycle Project to ground level concentrations of NO_2 mathematical modeling must be used. Given the flue gas flowrate and temperature and the meteorological parameters of wind speed, wind direction, and atmospheric stability, the models determine the rise and trajectory of a plume. With the plume trajectory established, the models then determine the vertical and horizontal diffusion of the plume as it is carried downwind of the proposed plant.

From the plume rise and dispersion computations, the maximum ground level concentrations of NO_x due to the project was found to be 0.05 ppm (hourly basis) at a distance of two miles from the project and occurs under the infrequent conditions of an unstable atmosphere, light wind speed, and the plume rise being coincident with the inversion base. Under a more typical set of meteorological conditions, which are considered to be adverse and occur about 15 percent of the time, a maximum contribution of 0.02 ppm to NO_x ground level concentrations is predicted also at a downwind distance of about two miles from the project. Contributions drop off markedly from such levels through greater diffusion as distances increase beyond two miles.

The air quality standard for NO_2 of 0.25 ppm as an hourly average was equalled or exceeded on 33 occasions during 1971 at the Long Beach Air Monitoring Station. This station is located about seven miles northeasterly of the proposed project. The high pollutant levels measured there appear attributable to emissions from motor vehicles.

Further control of this predominant source of air pollution is expected to result in much improved air quality by the mid- or late 1970's. In addition, with few exceptions the increment in ground level concentrations attributable to the proposed project would not be expected to be more than a small fraction of the predicted maximums of 0.05 and 0.02 ppm of NO_x specified above during the meteorological conditions associated with the highest ground level concentrations of primary pollutants (oxides of nitrogen, reactive hydrocarbons, and carbon monoxide) from mobile sources. In light of this tendency toward noncoincidence and the anticipated improvement in air quality by the mid- or late 1970's, the small contributions by emissions from the proposed project to ground level NO_x concentrations should have little impact on air quality in the Long Beach area.

Furthermore, the ground level NO_x concentrations attributable to the proposed project would be reduced by about 15 to 20 percent if the expected improvement in the specific NO_x emissions rate is achieved, i.e., 1.35 pounds per MWHr instead of 1.68 pounds per MWHr. Also, although it appears unneeded, the maximum contributions to ground level concentrations could be further reduced by increasing stack height to increase plume rise.

The increase in contributions by Edison's Basin power plants to ground level NO_x concentrations under the alternative of no project is also pertinent. The specific emissions rate of the Long Beach combined cycle units will be lower than any of Edison's existing oil-fired power plants. Moreover, at times of peak loads some 585 MW's more of existing capacity in relatively high NO_x emitters, including possibly the existing units at the Long Beach generating station, would have to be placed in operation than would occur if the proposed project were built and operating.

Another aspect requiring comment concerns the role of NO_x concentrations which are attributable to power plant emissions in the mixing layer above ground level. Although this matter has been under intensive study by both the government and industry for some time, thus far there has not been a definitive determination as to whether NO_x emissions from elevated sources, such as the plume rise from power plant stacks, affect the formation of photochemical oxidant to any appreciable extent. To whatever extent such emissions are a factor in this respect, it is once again important to draw a distinction between power plants in general as being a substantial source of NO_x emissions and this particular proposed project which tends to reduce Basin emissions.

In summary the evidence clearly supports a conclusion that the proposed project will have neither a substantial beneficial nor substantial adverse impact on air quality.

The Project and Its Effect on Harbor Waters

The existing Plants 2 and 3, which presently constitute the Long Beach Generating Station, can use up to 471,000 gpm of seawater to cool the condensers of the steam turbine generators. This use is designated by the Los Angeles Regional Water Quality Control Board as an existing thermal waste discharge to an enclosed bay. This designation extends to the cooling system for the proposed Long Beach Combined Cycle Project, since it will be the existing once-through seawater cooling system for Plant 2 having a flowrate of 141,000 gpm.

At full-load operation the proposed Long Beach Combined Cycle Units Nos. 8R and 9 would raise the cooling water temperature 20 degrees Fahrenheit before discharge. Small concentrations of chemicals and other materials are present from time to time in the waste water discharge. During heat treatment cycling the discharged water will not exceed 110 degrees Fahrenheit nor will cycling exceed four hours in duration.

The Interim Waste Water Discharge Requirements for the entire Long Beach Generating Station was issued and adopted by the Los Angeles Regional Water Quality Control Board on October 30, 1972. In addition to the many specific and detailed requirements imposed, this discharge is subject to the basic and continuing prerequisites of meeting whatever limitations are necessary to assure protection of the beneficial uses established for the Long Beach Harbor and assuring that the temperature of the receiving waters shall not be changed by the discharge to the extent that an adverse ecological effect is caused. Compliance with the comprehensive waste discharge requirements and conditions will preclude an adverse impact on the marine environment.

Moreover, unless Edison conclusively demonstrates in a future hearing before the South Coast Regional Coastal Zone Conservation Commission that the existing cooling system and thermal

waste discharge have no substantial adverse environmental or ecological effect on the Back Channel or the Inner Harbor, it shall be required to use a closed cycle freshwater cooling tower system for the project pursuant to one of the conditions imposed by the California Coastal Zone Conservation Commission in granting the permit for this project.

Negative Declaration

A Negative Declaration is the practicable and indicated environmental document for this project because there will be no significant environmental effect from the project.

Under the transition to Rule 17.1 for this proceeding, a Draft EIR and Final EIR are not needed to examine either environmental impacts or mitigation measures to further assure that such impacts will not be substantial. The environmental effects have been examined thoroughly by means of an environmental report prepared by Edison and reviewed by pertinent state agencies with appropriate expertise and by means of a comprehensive evidentiary hearing which was completed before Rule 17.1 took effect. In addition, all discretionary authorizations necessary to construct the project other than the one from this Commission have been obtained by Edison. Such approvals include the conditional permit obtained from the California Coastal Zone Conservation Commission which, as brought out earlier, would not have been issued if the project would cause any substantial adverse environmental or ecological effect.

After determining that the proposed project will not have a significant effect on the environment because of circumstances peculiar to the project as demonstrated by the hearing record herein and by the conditions imposed by the California

Coastal Zone Conservation Commission, to further assure the minimal nature of any environmental effects of the project, Examiner Main issued on September 27, 1973 a Negative Declaration for this project. None of the parties filed exceptions to the Negative Declaration pursuant to Paragraph (f)(3) of Rule 17.1. However, comments were received from the Air Resources Board staff, the Department of Fish and Game, and the Los Angeles County Air Pollution Control District through the circulation and review procedures of the Guidelines.

The ARB staff challenge the Negative Declaration. They contend the project has a significant effect on air quality in the South Coast Air Basin and hence requires the EIR procedures under the provisions of CEQA and the Guidelines. However, both the record in this proceeding and the action by the California Coastal Zone Conservation Commission establish that contrary to the ARB staff's view the project will not have a substantial adverse environmental impact.

The Department of Fish and Game urges the Commission to issue an EIR which fully describes the environmental issues involved and which can be used to substantiate claims of no significant environmental effect from the project. Either this decision or the Negative Declaration treats of the environmental issues in sufficient depth to determine there will be no substantial adverse effect from the project. The EIR procedures would cause substantial further delays, would be duplicative in large measure, and are unnecessary in the circumstances of this case because the record in this proceeding and the action of the coastal commission support a Negative Declaration.

The Los Angeles County Air Pollution Control District agrees with the conclusion on air pollution contained in the Negative Declaration but contends the purposes of CEQA would be better served by following the EIR procedures rather than preparing a Negative Declaration for this project.

These comments by the Air Resources Board staff, the Department of Fish and Game, and the Los Angeles County Air Pollution Control District do not raise any new substantive issues or arguments in favor of the alternative procedure of preparing an environmental impact report. The Negative Declaration as issued is appropriate in the circumstances of this case, is adequately supported, and does not require modification.

Staff Recommendations

The Commission staff considers the project to be in the public interest and recommends that the Commission grant a certificate of public convenience and necessity authorizing the construction and operation of the project. If the application is granted, the staff further recommends that Edison be required to: (1) undertake studies to demonstrate the most effective means of operating the combined cycle units to minimize emissions in the South Coast Air Basin; (2) undertake studies that would result in plans for establishing a reasonable and flexible program of earlier retirement of older existing units in the South Coast Air Basin; and (3) demonstrate, after commercial operation of the Long Beach Combined Cycle Project, the predicted reductions in NO_x emissions in the South Coast Air Basin.

Findings

1. Increasing load on applicant's system in the 1974-1976 time frame and beyond will require additional generating capacity far in excess of that represented by the proposed Combined Cycle

Units Nos. 8R and 9 at the Long Beach Generating Station Plant No. 2.

2. The proposed Combined Cycle Units Nos. 8R and 9 are an economic, efficient, and appropriate means of providing a portion of applicant's increased generating requirements in the period 1974-1976 and beyond.

3.a. The alternative for providing the increased generating capacity represented by Combined Cycle Units Nos. 8R and 9 in the 1974-1976 time frame would be by straight gas turbine capacity which would be less efficient and less desirable from an environmental point of view.

b. The use of the type of combined cycle equipment proposed for Edison's Huntington Beach Generating Station is unacceptable as an alternative because of substantial disadvantages in its use at the Long Beach site including up to a two-year delay, during which there would be greater emissions from older, less efficient equipment, a substantial increase in thermal discharges to harbor waters, and an increased cost of approximately $24 million. These disadvantages are considered to far outweigh a nominal improvement in average NO_x emissions of one-half ton per day.

4. The proposed Combined Cycle Units Nos. 8R and 9 will increase the generating capability of Plant No. 2 at the Long Beach Generating Station from approximately 148 MW to approximately 585 MW, utilizing the existing circulating ocean water condenser cooling system of Plant No. 2, and yet emit less air contaminants for comparable capacity factor operations. (Although existing Plant No. 2 is outmoded and seldom operated, even its capacity will eventually be required on a scheduled basis if generation resources are not added.)

5. The additional power which will be produced by the proposed Combined Cycle Units Nos. 8R and 9 can be transmitted to the load centers on applicant's system without additional transmission line rights-of-way and without additional transmission

line facilities except for the addition of conductors to existing double circuit structures for a portion of a 66 KV circuit.

6. In conformance with General Order No. 131 the construction and operation of Long Beach Combined Cycle Units Nos. 8R and 9:

a. Is reasonably required to meet area demands for present and/or future reliable and economic electric service; and

b. Will not produce an unreasonable burden on natural resources, aesthetics of the area in which the proposed facilities are to be located, community values, public health and safety, air and water quality in the vicinity, or parks, recreational and scenic areas, or historic sites and buildings or archaeological sites.

7. Present and future public convenience and necessity require the construction and operation of Long Beach Combined Cycle Units Nos. 8R and 9, together with appurtenances.

8. The Commission has carefully considered the evidence on environmental matters and the contents of the Negative Declaration in rendering the decision on this project and finds that:

a. The project is of a type that would ordinarily be expected to have a significant effect on the environment.

b. The environmental impacts involve principally a shift in the air contaminant emissions and thermal (waste water) discharges among applicant's power plants in the South Coast Air Basin.

c. The project will not have a significant effect upon the environment because of circumstances peculiar to the project, i.e., because of its characteristics in relation to those of

applicant's existing electric generation facilities in the South Coast Air Basin primarily, but also because of certain other circumstances:

Air Quality Aspects

(1) Construction permits for the proposed generating units have been issued by the Los Angeles County Air Pollution Control District upon assurance that the units will operate within the limitations of all existing regulations and standards for air contaminant emissions.

(2) The emissions of air contaminants (NO_x SO_2 and particulates) by the combined cycle units will be less than the lowest of Edison's existing lower emitter units on oil fuel in the South Coast Air Basin for equivalent electric generation.

(a) There will be somewhat less daily average emissions on an annual basis into the South Coast Air Basin by Edison's power plants with the combined cycle units built and placed in commercial operation than without them.

(b) During system emergencies and other times when the older, less efficient, higher emitting generating units including possibly those at Long Beach would need to be operated, the emissions from Edison's power plants will be substantially less with the proposed project than without it.

(3) The predicted contribution to ground level concentrations of air contaminants by the combined cycle units is minimal for most meteorological conditions and is not significant at other times.

(4) Neither a substantial beneficial nor substantial adverse impact on air quality will result from this project.

Thermal Discharge Aspects

(1) The project will utilize the existing circulating seawater condenser cooling system of Plant No. 2.

(2) Studies conducted thus far on the receiving waters for the thermal waste discharge indicate minimal effects on the marine environment.

(3) The interim waste water discharge requirements for the entire Long Beach Generating Station were issued and adopted by the Los Angeles Water Quality Control Board on October 30, 1972.

(4) Compliance with the comprehensive waste discharge requirements and conditions imposed by that Board should preclude an adverse impact on the marine environment. These requirements include a basic and continuing obligation to implement whatever limitations are necessary on this discharge to assure protection of the beneficial uses established for the Long Beach Harbor and to accomplish the condition that the temperature of the receiving waters shall not be changed by the discharge to the extent that an adverse ecological effect is caused.

(5) As a further safeguard the California Coastal Zone Conservation Commission will require a closed cycle fresh water cooling tower system for the project in the event Edison after operating the project cannot conclusively demonstrate that the existing cooling water system and thermal waste discharge have no substantial adverse environmental or ecological effect.

Other Environmental Aspects

(1) The project does not involve any new commitment of land for the generating station nor for the transmission lines. In fact the project modernizes an outmoded facility and improves the aesthetic appearance of the harbor area.

(2) The new turbines will be housed in a permanent building and equipped with sound-absorbing devices to assure that there will be no impact upon ambient sound levels.

(3) The site is not known to possess any historical, cultural, or archaeological significance.

Coastal Commission Action

(1) The California Coastal Zone Conservation Commission has issued a conditional permit for this project.

(2) The California Coastal Zone Conservation Commission is barred by statute from issuing the permit unless it finds that the development will not have a substantial adverse environmental or ecological effect. (Public Resources Code Section 27402(a).)

d. The project will help maintain reliable electric service from an integrated system serving a substantial part of California.

e. The benefits of the project outweigh any minor environmental impact possible.

f. The planned construction is the most feasible and economical in the time frame required to minimize environmental impact.

g. There are no known irreversible environmental changes involved in this project.

h. The Negative Declaration for this project attached as part of Appendix A to this decision is adopted by the Commission.

9. Edison should be required to undertake the studies recommended by the staff concerning emissions by Edison's power plants in the South Coast Air Basin and the retirement of older existing Edison generating units in the South Coast Air Basin.

10. A substantial savings in accounting costs would be realized if applicant is permitted to file a combined cost report for Long Beach Combined Cycle Units Nos. 8R and 9 eighteen months after Combined Cycle Unit No. 9 is placed in commercial operation.

The certificate hereinafter granted shall be subject to the following provision of law:

> The Commission shall have no power to authorize the capitalization of this certificate of public convenience and necessity or the right to own, operate or enjoy such certificate of public convenience and necessity in excess of the amount (exclusive of any tax or annual charge) actually paid to the State as the consideration for the issuance of such certificate of public convenience and necessity or right.

The action taken herein is not to be considered as indicative of amounts to be included in future proceedings for the purpose of determining just and reasonable rates.

Based on the foregoing findings the Commission concludes that the Long Beach Combined Cycle Project should be authorized and that other actions as prescribed in the following order should be taken by Edison.

O R D E R

IT IS ORDERED that:

1. A certificate of public convenience and necessity is granted to Southern California Edison Company to construct and operate Long Beach Combined Cycle Units Nos. 8R and 9 at its Long Beach Generating Station together with appurtenances generally as described by Edison in this proceeding.

2. Within one hundred eighty days after the effective date of this order Southern California Edison Company shall file detailed studies of utilization of their generation resources together with appropriate summaries and/or supplementary studies to:

a. Show what reductions in emissions in the South Coast Air Basin are currently being accomplished by the least NO_x emission dispatch method;

b. Demonstrate the most effective means of operating Long Beach Combined Cycle Units Nos. 8R and 9 during the first two anticipated years of operation to minimize emissions in the South Coast Air Basin while not significantly affecting system reliability; and

c. Serve in formulating a reasonable and flexible program of earlier retirement of older existing generating units in the South Coast Air Basin.

3. Within ninety days after Long Beach Combined Cycle Unit No. 9 is placed in commercial operation, Southern California Edison Company shall file reports demonstrating that methods of operation of the Long Beach Combined Cycle Project, together with other generating plants in the South Coast Air Basin, have resulted in reductions in the total emissions of NO_x consistent with the evidence Edison introduced in this proceeding.

4. Within eighteen months after Long Beach Combined Cycle Unit No. 9 is placed in commercial operation, Southern California

Edison Company shall file a combined cost report for Long Beach Combined Cycle Units Nos. 8R and 9.

The effective date of this order shall be twenty days after the date hereof.

Dated at San Francisco, California, this 23rd day of APRIL, 1974.

President

Commissioners

APPENDIX A

Notice of Completion

Examiner's Ruling

Negative Declaration

THE NEXT

DOCUMENTS ARE

POOR ORIGINALS

MICROFILMING SERVICES

will not assume responsibility

for the image quality

NOTICE OF INTENT

THIS FORM SERVES AS THE NOTICE OF COMPLETION UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT IF A REVIEW IS REQUIRED AT THE STATE LEVEL ON THE ENVIRONMENTAL IMPACT REPORT OR NEGATIVE DECLARATION.

(NOTIFY BOTH)

[X] STATE CLEARINGHOUSE
OFFICE OF THE GOVERNOR
OFFICE OF INTERGOVERNMENTAL MANAGEMENT
1400 10TH STREET - ROOM 121
SACRAMENTO, CALIFORNIA 95814
(916) 445-0613

[X] METROPOLITAN CLEARINGHOUSE

STATE OF CALIFORNIA

STATE CLEARINGHOUSE NUMBER (SCH. NO.) (1-8) | TRANSACTION (9)

SEE INSTRUCTIONS ON REVERSE SIDE

1 SPONSOR OR AGENCY RESPONSIBLE FOR REPORT (12-45): Calif. Public Utilities Comm. — DIVISION (46-74): Examiners — DATE THIS FORM SUBMITTED: MO. Sept. DAY 26 YEAR 197

2 PROJECT TITLE (12-71): 585 megawatt electric generating plant — AGENCY ACTION DATE: MO. DAY YEAR

3 ADDRESS (12-45): 107 S. Broadway — CITY (46-60): Los Angeles — COUNTY (61-75): Los Angeles — ZIP CODE: 90012

4 CONTACT PERSON (12-36): A. E. Main — TITLE (37-65): Examiner — AREA CODE: 213 — PHONE: 620-2575

PROJECT DESCRIPTION OF NATURE, PURPOSE, BENEFICIARIES

5 (12-71) Application of Southern California Edison Company for
6 (12-71) a certificate to convert Plant No. 2 at the Long Beach
7 (12-71) Generating Station to combined-cycle and increase its gen-
8 (12-71) erating capacity from 148 megawatts to 585 megawatts.
9 (12-71)
10 (12-71)

ON THESE 6 LINES CAPSULIZE THE PROJECT DESCRIPTION. YOU ARE ENCOURAGED TO ATTACH ADDITIONAL INFORMATION ON THE PROJECT FOR THE BENEFIT OF THE REVIEWER. IF YOU DO, THE STATE CLEARINGHOUSE WILL NEED 25 COPIES OF ANY ATTACHMENTS. PLEASE CHECK WITH THE METROPOLITAN CLEARINGHOUSE FOR THEIR SUBMISSION REQUIREMENTS.

11 PROJECT LOCATION CITY (12-45): Long Beach — PROJECT LOCATION COUNTY (46-79): Los Angeles

12

FEDERAL FUNDS		MATCHING FUNDS		OTHER NON-FEDERAL FUNDS	TOTAL FUNDS
GRANT (12-20)	OTHER (21-29)	STATE (30-38)	LOCAL (39-47)	(48-56)	(57-66)

13 SOURCE OF OTHER FEDERAL FUNDS (12-24) | FED. CATALOG NO. | SOURCE OF STATE MATCH (25-57) | SOURCE OF OTHER NON-FED. FUNDS

14 FUNDING AGENCY PROGRAM TITLE (12-80) | FEDERAL CATALOG NUMBER

15 FUNDING AGENCY NAME (12-45) | SUB-AGENCY (46-79)

16 CONGRESSIONAL DISTRICT | SENATE DISTRICT | ASSEMBLY DISTRICT | STATE-WIDE | COUNTY-WIDE | CITY-WIDE

17

TYPE OF ACTION:
- [ ] 12 NEW
- [ ] 13 MODIFICATION IN CURRENT GRANT - CUR. SCH. NO. ______ (14-21)
- [ ] 22 CONTINUATION GRANT SCH. NO. FROM PRE. YR. ______ (23-30)
- [ ] 31 RESUBMITTAL OF A PRE APPLICATION - PRE. SCH. NO. ______ (32-39)

REQUESTED FUND START ______ (40-45) MON - DAY - YEAR
FUNDS DURATION ______ (46-48) MOS.
EST. PROJECT START ______ (49-54) MON - DAY - YEAR
EST. PROJECT DURATION ______ (55-57) MOS.

PROJECT SUBJECT TO REVIEW UNDER: (CHECK AS MANY AS APPROPRIATE)
- [ ] 58 U.S. OFFICE OF MANAGEMENT AND BUDGET CIRCULAR A-95
- [ ] 59 MODEL CITIES PLANNED VARIATION
- [ ] 60 NATIONAL ENVIRONMENTAL POLICY ACT
- [X] 61 CALIFORNIA ENVIRONMENTAL QUALITY ACT
- [ ] 62 SUBDIVISION REVIEW (SECTION 11550 OF BUSINESS & PROFESSIONS CODE)
- [ ] 63 STATE ADMINISTRATIVE MANUAL (SEC. 0911)
- [ ] 64 HEALTH RELATED (SEC. 437.5 OF HEALTH AND SAFETY CODE)
- [ ] 65 LEASE OF STATE LANDS
- [X] 66 OTHER: Public Util. Code

IF PROJECT IS PHYSICAL IN NATURE OR REQUIRES AN ENVIRONMENTAL DOCUMENT, LIST THE U.S. GEOLOGICAL SURVEY QUADRANGLE MAP IN WHICH THE PROJECT IS LOCATED.
1. ______
2. ______
3. ______
4. ______
5. ______

DOES YOUR AGENCY HAVE A CIVIL RIGHTS AFFIRMATIVE ACTION POLICY AND PLAN?
YES [X] 67 NO [ ] 68

WILL THE PROJECT REQUIRE RELOCATION?
YES [ ] 69 NO [X] 70

[illegible] YES [illegible]

AP

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the matter of the application of SOUTHERN CALIFORNIA EDISON COMPANY for a Certificate that Present and Future Public Convenience and Necessity require or will require the construction and operation by Applicant of new gas turbine electric generating units, to be used in combination with Units 8R and 9 at its Long Beach Generating Station, together with other appurtenances to be used in connection with said units.	Application No. 53418 (Filed June 21, 1972)

SEP 27 1973

SAN FRANCISCO OFFICE

EXAMINER'S RULING.

In accordance with the Commission's Rule of Procedure 17.1 entitled "Special Procedure for Implementation of the California Environmental Quality Act of 1970" and on motion of applicant for a Negative Declaration, it is ruled that:

1. The project for which Application No. 53418 is filed is an electric generation project covered by General Order 131 and the Public Utilities Commission is the lead agency.

2. A grant of the authority sought in Application No. 53418 will not have a significant effect on the environment due to circumstances peculiar to the specific project.

3. A Negative Declaration will be prepared by the Examiner pursuant to Rule of Procedure 63 and in conformance with CEQA and the applicable guidelines, and filed by the Secretary of the Commission with the Secretary for Resources.

Dated at San Francisco, California, this 27th day of September, 1973.

A. E. Main
Examiner

CM

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the application of SOUTHERN CALIFORNIA EDISON COMPANY for a Certificate that Present and Future Public Convenience and Necessity require or will require the construction and operation by Applicant of new gas turbine electric generating units, to be used in combination with Units 8R and 9 at its Long Beach Generating Station, together with other appurtenances to be used in connection with said units.	Application No. 53418 (Filed June 21, 1972)

NEGATIVE DECLARATION

Southern California Edison Company (SCE) seeks authority under provisions of General Order No. 131 to modernize Units 8R and 9 of its Long Beach Generating Station, located on Terminal Island in the City of Long Beach, by replacing 15 existing gas/oil fired boilers serving these units with seven gas turbine generators, the exhaust from which will be used to generate steam for Units 8R and 9. On-site construction will include extensive alterations to an existing building, new and higher stacks, a housing for the new turbines, fuel storage tanks and appurtenances. Off-site construction will consist of new transmission wires on existing towers and poles in present rights-of-way.

At public hearings held on October 31, November 1, December 4, 15, and 27, 1972 the following evidence was adduced on issues of environmental concern:

(1) Air Quality

SCE has obtained construction permits from the Los Angeles County Air Pollution Control District upon assurances that the turbines will operate within the limits of all existing regulations and standards for air emissions. Despite the fact that the

modernized plant will be capable of generating 585 megawatts of power compared to the 148 megawatt capacity of the existing units, the level of emissions from the modernized plant will actually be less than those from the existing plant similarly operated. This is possible because the gas turbines burn a cleaner, distillate type fuel and operate in combination with steam units which do not require any additional combustion process.

Although the existing plant has been used only infrequently during the recent past, projected increases in demand for electric energy will make it necessary for SCE to increase such operation in the future even if this project is not authorized.

Because the modernized plant will be a cleaner facility, from an air quality standpoint, than some of the other plants which SCE now operates in the South Coast Air Basin and represents an increase in generating capacity over the existing units at Long Beach, the total level of oxides of nitrogen (an element of photochemical smog) emitted by SCE's plants in that basin in 1976 will be less if this project is consummated than if it is not.

(2) Water Quality

SCE plans to continue to use the existing salt water cooling system and does not anticipate any increase in the volume of thermal discharge. Permission to continue the use of this system has been granted by the Regional Water Quality Control Board under conditions which are acceptable to SCE.

(3) Noise Pollution

The new turbines will be housed in a permanent building and equipped with sound absorbing devices to assure that there will be no impact upon ambient sound levels.

(4) Aesthetic, Cultural, Archeological, and Other Ecological Values

The site has been used as a steam generating plant for almost 50 years and is located in an area zoned and used for heavy industry. No substantial effect on wildlife or flora is expected.

The new construction will be designed and painted to blend with the existing buildings and facilities on the site.

No additional transmission towers, poles, or rights-of-way will be needed.

The site is not known to possess any historic, cultural or archeological significance.

In addition to the above evidence, official notice is taken of two recent actions by other public agencies. The Planning Commission of the City of Long Beach has approved the Environmental Report furnished them by SCE, and the California Coastal Zone Conservation Commission has granted SCE a permit for the project. A copy of the latter's conditional permit is attached. The California Coastal Zone Conservation Commission is barred by statute from issuing such a permit unless it finds that the development will not have a substantial adverse environmental or ecological effect. (Public Res. Code Sec. 27402(a)).

Findings

1. The proposed project is of a type that would ordinarily be expected to have a significant effect on the environment.

2. The California Public Utilities Commission is the lead agency for the proposed project.

3. The proposed project will not have a significant effect upon the environment because of circumstances peculiar to the project as discussed herein.

Dated at San Francisco, California, this 27th day of September, 1973.

Archibald E. Main
Examiner

STATE OF CALIFORNIA — RONALD REAGAN, Governor

CALIFORNIA COASTAL ZONE CONSERVATION COMMISSION

1540 MARKET STREET, 2nd FLOOR
SAN FRANCISCO, CALIFORNIA 94102
(415) 557-1001

September 13, 1973

Mr. David J. Fogarty, Vice-President
Southern California Edison Company
P. O. Box 800
Rosemead, California 91770

RE: Appeal No. 82-73

Dear Mr. Fogarty:

On August 8, 1973, by a vote of 9 in favor, 1 against, the California Coastal Zone Conservation Commission granted your application for a permit to construct the development described in the attached staff recommendation.

The reasons for this action are contained in the staff recommendation, as amended and adopted by the Commission at the time of the vote. The permit is limited to the development described in the staff recommendation, and is subject to the terms and conditions contained therein.

Before any activity authorized by the permit shall take place, you must return to this office and to the South Coast Regional Commission office copies of this statement with your signature acknowledging that you have received it and understood its contents.

Please note that upon completion of the activities authorized, you must promptly complete the Notice of Completion and file it with the Executive Director of the South Coast Regional Commission.

Yours very truly,

JOSEPH E. BODOVITZ
Executive Director

Attachment
cc: South Coast Regional Commission

The undersigned permittee acknowledges receipt of the California Coastal Zone Conservation Commission Permit No. 82-73, and fully understands its contents, including all conditions imposed.

September 17, 1973
Date

SOUTHERN CALIFORNIA EDISON COMPANY
Permittee

By _____
DAVID J. FOGARTY
Vice President

CALIFORNIA COASTAL ZONE CONSERVATION COMMISSION

1540 Market Street, San Francisco 94102 — (415) 557-1001

STAFF RECOMMENDATION

Appeal No. 82-73
60th Day: 8/12/73

DECISION OF REGIONAL COMMISSION: Permit approved by South Coast Regional Commission, subject to conditions pertaining to air quality and water quality

PERMIT APPLICANT: Southern California Edison Company

DEVELOPMENT LOCATION: Northeastern portion (43 acres) of Terminal Island in Long Beach Harbor at 2665 West Seaside Blvd., City of Long Beach, County of Los Angeles

DEVELOPMENT DESCRIPTION: Increase power generation at existing power plant by modification of two fossil fuel steam boiler power plant units into a combined cycle plant that will utilize seven new gas turbines and heat recovery boilers in combination with existing steam turbines and steam generators. Existing once-through salt water cooling system to be used.

APPELLANTS: Friends of South Bay

PUBLIC HEARING: Held July 18, 1973, in Long Beach

STAFF RECOMMENDATION:

The staff recommends that the Commission modify the permit granted by the South Coast Regional Commission to approve the proposed Long Beach combined cycle project subject to the following conditions:

1. Within one year of commencement of operation of the combined cycle plant, the applicant shall succeed in reducing the rate of NOx emissions from each gas turbine to at least the level of 113 lbs/hr per gas turbine (which is equivalent to 1.35 lbs/MWHr for the entire project), the level presently predicted for the turbines by the applicant. Thereafter, the applicant shall use its continued best efforts to attempt to achieve the lowest possible levels of NOx emissions for the plant. For the purposes of this condition, until the prescribed limit is attained, the applicant shall, at the end of each month, submit to the South Coast Regional Commission, the Public Utilities Commission, the Air Resources Board, and the LAAPCD, a report describing the NOx emission levels achieved. If at the end of the one-year period, the prescribed limit has not been met, the applicant may apply to the Regional Commission for an extension of reasonable length. The applicant may be granted such extension upon a showing of continued good faith efforts and substantial progress in reducing NOx emission levels.

2. The applicant shall operate the proposed project at a maximum monthly average capacity factor of 34% unless

a. The applicant is ordered by the PUC, the ARB, the LAAPCD, or the EPA to run the plant at a higher capacity factor for purposes of reducing total system NOx emissions for the South Coast Air Basin, or for any other legitimate public purpose; or

b. The applicant is required by temporary emergency power demand requirements to operate the plant for a temporary period at a monthly average capacity factor in excess of 34%, in which event the applicant shall immediately file with the South Coast Regional Commission a report describing the nature of the emergency and the variant use of the plant.

3. The applicant shall be required to use a closed cycle freshwater cooling tower(s) for the project unless, pursuant to procedures outlined hereinbelow, it can conclusively demonstrate in a future permit hearing before the South Coast Regional Commission that the existing cooling system and thermal waste discharge will have no substantial adverse environmental or ecological effect on the Back Channel or the Inner Harbor. The applicant shall begin immediately to design the cooling tower(s) for the plant, and at the earliest possible date shall begin to use its best efforts to obtain the necessary governmental approvals for construction and use of the cooling tower(s). The applicant shall be entitled in the meantime to proceed with construction of the combined cycle plant, and may commence operation of the plant utilizing the existing cooling system. The cooling tower(s) shall be put into use, equipped with the best available defogging equipment, within 26 months after operation of the complete combined cycle plant has begun. However, at any time after operation, but prior to the expiration of the 26 month period of the plant using the existing cooling system has begun, the applicant may apply to the South Coast Regional Commission for a permit to operate the plant permanently using the existing cooling system, instead of the cooling tower. Such permit should be granted by the South Coast Regional Commission only after the applicant, by a showing of data developed in cooperation with all interested governmental agencies including but not limited to the Regional Water Quality Control Board and the Department of Fish and Game, has clearly met its burden of proof under Section 27402 of the Act regarding potential harm to the marine life of the Back Channel and the Inner Harbor. This permit application will pertain only to the proposed use of the existing cooling system, and shall not involve consideration of other aspects of the combined cycle plant.

If the applicant does not succeed in obtaining the requisite governmental agency approval for a cooling tower, it must proceed to the South Coast Regional Commission with an applicatic for a permit for its existing cooling system, or for whatever alternative cooling system it may propose. The permit application shall be limited to the proposed cooling system, and shall not involve other aspects of the combined cycle. The applicant's burden of proof shall be identical to that described in the immediately foregoing paragraph.

Compliance with the conditions of this permit shall be monitored and enforced by the South Coast Regional Coastal Conservation Commission and the California Coastal Zone Conservation Commission, or by their successors; and if there are no successors, then by the Los Angeles Regional Water Quality Control Board and the State Water Quality Control Board.

The proposed project, as modified by the foregoing conditions, will not have a substantia adverse environmental or ecological effect, and will be consistent with the findings and purposes of the Act. The reasons for this recommendation are as follows:

1. <u>The Need for Electrical Power</u>. The applicant has not succeeded in obtaining the necessary regulatory approvals for any major new power generating facility since 1968. Since 1968, peak power demand has increased from 7,425 MW to 10,390 MW—an increase of almost 40%. Projects planned and approved prior to 1968, and put on line since then, have met the demand growth to date, and will continue to do so through 1974. By early 1975, however, assuming demand growth continues as projected and no additional power increments are brought on line, the margin between projected peak load and maximum available power supply (installed capacity margin), will shrink below 15%. Utilities typically attempt to maintain a margin of 20% or

greater. When the installed capacity margin is less than 15%, substantial outages occurring at times of peak demand may result in power supply shortages necessitating service interruptions. In the SCE service area, such power interruptions would probably take the form of "rolling blackouts."

The combined cycle technology proposed for this project is well-suited for meeting the increased power demands that normally occur during weekday daytime hours. A combined cycle operation would not be suitable for operation on a 24-hour basis, as a base load resource, because the required fuel is expensive. However, the combined cycle can be started up and shut down quickly and easily, making it ideal for semi-peaking use as proposed, 8-10 hours per week day.

In short, the unique circumstances and timing of this application are justification for its approval, but the staff strongly recommends that such approval be clearly designated as relating only to this application and in no way establishing a precedent for other approvals. The environmental aspects of increased power projection are too well known to need elaboration here, but will be an important element of the Commission's planning program.

2. Land Use. The proposed project is wholly within the area of an existing power plant owned and operated by the applicant. The site is in a heavily industrialized area. The plant will utilize existing fuel storage tanks, fuel pipelines, and transmission lines. Thus, there is no significant land use issue in this application.

3. Air Quality. The combined cycle technology represents a significant improvement in power generation from the standpoint of air emissions. Combined cycle plants are fueled with either natural gas or a kerosene-type distillate of oil. Therefore they emit relatively insignificant amounts of sulfur dioxide and particulates. The combined cycle also emits substantially reduced levels of oxides of nitrogen (NOx), but even after such substantial improvement, a combined cycle plant still represents a significant source of NOx emissions.

From the point of view of air quality and human health, there is a serious question as to the wisdom of continued dependence on fossil-fuel, NOx-emitting power plants in the South Coast Air Basin, and particularly in the Long Beach area. In the past two years nitrogen dioxide and oxidant levels in Long Beach and in cities downwind of Long Beach have frequently exceeded State and Federal ambient air quality standards. However, taking into consideration the immediate and acute need for a new power resource, the availability of the existing site, and the approval or acquiescence of other local and State agencies concerned solely with air quality matters, the staff believes the project should be approved, subject to conditions that at least mitigate the potential adverse impact of the project on air quality.

The staff has thoroughly investigated the proposal that, to further reduce NOx emissions, the applicant be required to use at Long Beach the same equipment and configuration planned for the Huntington Beach combined cycle operation. SCE estimates that the "Huntington Beach alternative" would add $25 million to the cost of the project, and would add as much as two years to the construction schedule. The potential reductions in total NOx emissions per day (just under ½ ton/day) and in the specific rate of NOx emissions (0.16 to 0.49 lbs./MWHr) represented by the Huntington Beach alternative are significant, and represent legitimate goals that SCE should be urged to attempt to meet.

SCE has reported to the staff that the most recent NOx emission projections for the Long Beach project indicate that the emission rate will be reduced from the originally guaranteed 140 lbs/hr. to 113 lbs/hr. per turbine; and that the specific NOx emission rate for the entire plant will be reduced from the originally guaranteed 1.68 lbs/MWH to 1.35 lbs/MWHr. The comparable figures for the Huntington Beach plant are 140 lbs/hr. and 1.19 lbs/MWHr. With such reductions the Long Beach project begins to approach the Huntington Beach project in NOx emission levels. This substantially weakens the case for requiring the Huntington Beach alternative, with its attendant delays and additional costs. Results generally comparable to those achievabl

by the Huntington Beach alternative can be realized by requiring as a condition of approval that SCE actually achieve the reduced NOx emission levels it has recently projected, and that SCE continue beyond achievement of such levels its good faith efforts to further reduce NOx emissions from the Long Beach turbines. The staff recognizes that achievement of such reductions may require operational experiments and adjustments, and recommends that SCE be given one year to achieve the prescribed levels, with an opportunity to obtain further reasonable extensions.

Of great importance to the air quality situation is that the Long Beach combined cycle may enable SCE to make less use of dirtier plants elsewhere in the South Coast Air Basin, thereby reducing net NOx emissions for the Basin as a whole. This is because of the Least NOx Emission Dispatch System which, in accordance with a PUC directive, SCE uses to determine at what load each plant already brought on line may be operated. Because of prevailing atmospheric conditions and high emission sources in the immediate area, Long Beach is a particularly bad location for any project that will produced increased actual NOx emissions. SCE has consistently declared its intention to use the plant at an annual capacity factor of 34%. Therefore, the staff recommend Condition 2 as being reasonable under the circumstances.

4. Water Quality. SCE proposes to use the existing plant's once-through seawater cooling system for its combined cycle plant. In this system, seawater enters from the Back Channel through a concrete conduit, and passes first through wooden "skimming" gates, then through a ba screen. The water is then pumped to condensers, where its temperature is raised to 20°F above ambient temperatures before being returned through a concrete outfall conduit to the Back Channel. The system presents the possibility of two types of adverse impact on marine life: (1) entrainment of marine life in the cooling system and (2) the heat from the water returned to th channel.

Over the past few years the Back Channel and Inner Harbor waters have been significantly cleaned up through curtailment of industrial waste discharges. There is substantial evidence that as a consequence of this clean-up, marine life has begun to reassert itself in the Back Channel and Inner Harbor. The declarations of the Coastal Zone Conservation Act of 1972 make clear that this should be encouraged.

There is substantially conflicting and ultimately inconclusive evidence as to the effect on Back Channel and Inner Harbor marine life of both the projected thermal plume and the entrainment of marine organisms in the cooling system. SCE makes a strong case on the question of the potential impact of the thermal waste discharge, particularly in its projections as to the limited area and intensity of the thermal plume. But if a thermal waste discharge will have an adverse effect on marine life in any body of water, the greatest effect would be in an enclosed bay such as the Back Channel, where flushing action is weak and sporadic, and where there are periods of relative stagnancy.

There is even less certainty as to the possible effects of entrainment on various forms of marine life, and particularly on zooplankton. The SCE Environmental Report represents no hard data or significant discussion concerning types of organisms susceptible to entrainment, mortality rates for entrained organisms, or the cumulative effect of such mortality rates upon the return of marine life to the Back Channel and Inner Harbor.

The staff believes that the goal of encouraging continued improvement of marine life, together with the conflicting evidence of the effects of the proposed thermal waste discharge and the lack of sufficient data concerning the effects of entrainment on the prospects for reassertion of marine life, amply support the requirements in Condition 3.

Available cooling tower technology can completely eliminate the threat of substantial adverse ecological effect on the Back Channel and Inner Harbor, though at a significant cost in dollars. Use of a closed cycle freshwater cooling tower would eliminate the thermal plume and the entrainment of marine organisms and other marine life mortality associated with intake mechanisms.

At any time after operation of the plant has begun, the applicant may apply to the Regional Commission for a rehearing on the cooling tower requirement. If at that time the applicant can conclusively demonstrate by data collected in cooperation with all other concerned State and local agencies, including, but not limited to, the Regional Water Quality Control Board and the Department of Fish and Game, that utilization of the existing cooling system will result in no substantial adverse environmental or ecological effect, the cooling tower requirement may be revoked by the Regional Commission.

The staff recognizes that SCE can only use its best efforts to secure the necessary approvals for the cooling tower from the requisite public agencies. If after a vigorous effort, SCE fails to gain such approval, it shall apply to the South Coast Regional Commission for a separate permit for whatever cooling system it proposes at that time to use as an alternative to the cooling tower.

The Regional Commission shall consider only the proposed cooling system, and related aspects of plant operation. It shall not reconsider the entire combined cycle project. Again SCE will have to carry the burden of showing that no substantial adverse environmental or ecological effect will result from its proposed alternative system.

The suggested type of cooling tower, when outfitted with defogging equipment, would cost SCE an estimated $7.5 million over costs previously projected for the project. In addition to increased costs, there are, of course, other problems raised by the cooling towers, including, in particular, a freshwater supply; disposal of the cooling tower blowdown; and the plume, or localized fog, that can occur in the vicinity of a cooling tower under some atmospheric conditions. The water supply and blowdown disposal problems are readily soluble. SCE has stated that the atmospheric conditions most conducive to the plume effect occur in Long Beach primarily during the winter months, and then only 25% of the time. The staff believes that available defogging technology can further reduce the incidence of fogging, and that more often than not, wind directions at the plant site will be such as to blow any existing plume away from the speedway and overpass on the south side of the plant site.

SCE has indicated that a cooling tower requirement would add from 1½ to 2 years to construction time of the plant. The staff believes that such a delay in putting the plant on line would nullify one of the strongest arguments for approval of the project, namely the acute electric power needs which can be timely met by this project. Therefore, the staff has recommended that SCE be permitted to proceed with construction of the project as scheduled, utilizing the existing cooling system for up to 2 years after commencement of the completed combined cycle plant operation, while governmental approvals are sought and design and construction of the cooling tower is carried out.

A. 53418

DECLARATION OF SERVICE BY MAIL

I declare under penalty of perjury that the following is true and correct:

I am a citizen of the United States, over the age of eighteen years, employed by the Public Utilities Commission of the State of California, at Room 5035, State Building, 350 McAllister Street, San Francisco, California.

That on the 27th day of September, 1973, I deposited in the United States Mail in the City and County of San Francisco, California, a true and correct copy of a Negative Declaration, an Examiner's Ruling, and a Notice of Intent, all issued in Application No. 53418, enclosed in sealed envelopes with postage thereon fully prepaid, one such envelope having been addressed to the last known address of each of the addressees as set forth in the attached Appendix.

That there is a regular delivery service by United States Mail in and between said City and County of San Francisco and each of the addressees as set forth in the aforementioned Appendix.

Dated at San Francisco, California, this 27th day of September, 1973.

Elsie A. Kimball

A. 53418 ck

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