LR /ds

Decision No. 77400

ORIGINAL

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 two new steam electric generating units, to be known as Units Nos. 6 and 7 at its HUNTINGTON BEACH GENERATING STATION, together with other appurtenances to be used in connection with said station.	Application No. 51294 (Filed August 1, 1969) (Amended August 18, 1969)
Investigation on the Commission's own motion into the need for additions, extensions, repairs or improvements to or changes in the existing plant, equipment, apparatus or other physical property of the SOUTHERN CALIFORNIA EDISON COMPANY and the need for other construction or facilities to meet public demand for electricity in the Southern California Edison Service Area.	Case No. 9007 (Filed December 30, 1969)

(Appearances are listed in Appendix A)

O P I N I O N

Application No. 51294 and Case No. 9007 were heard on a consolidated record covering 19 days of duly noticed public hearings held between December 17, 1969 and March 9, 1970. The consolidated proceedings concern the need for additional electric generating

capacity to meet public demand for electricity in the service area of Southern California Edison Company (Edison), the effect of Edison's power plants upon air quality in the South Coast Air Basin,[1/] and the paramount jurisdiction in case of conflict between the jurisdiction of this Commission and a local air pollution control district.

In Application No. 51294 Edison seeks a certificate of public convenience and necessity to construct and operate two new steam electric generating units, Units Nos. 6 and 7, having 790-megawatts capacity each, at its Huntington Beach Generating Station in the City of Huntington Beach, Orange County, California. In Case No. 9007, the Commission invokes explicit and broader statutory authority (Public Utilities Code Section 761 et seq) in examining the need for additional generating facilities or for changes in operations.

These matters were submitted subject to the receipt of concurrent briefs due April 15, 1970 which have been received and the matters are now ready for decision.

The Need For Additional Generating Capacity

In Exhibit No. 2 Edison has shown that its net system peak loads for the period 1950 - 1963 have closely followed a growth rate curve of 9.58 percent compounded annually, and that its

1/ The basin is so designated by the California Air Resources Board. It encompasses all of Ventura and Orange Counties and portions of Los Angeles, Santa Barbara, San Bernardino and Riverside Counties.

actual and projected peak demands for the 1963 - 1975 period are expected to approximate a compound rate of growth of 8.62 percent per year. The peak demands as recorded for years 1967 and 1968 and as estimated by Edison through year 1975 are set forth below.

NET SYSTEM PEAK DEMAND

Year	Megawatts	Increase Over Prior Year	
		Megawatts	Percent
1967	7,001	828	13.4
1968	7,425	424	6.1
1969	8,100	675	9.1
1970	8,850	750	9.3
1971	9,650	800	9.0
1972	10,460	810	8.4
1973	11,350	890	8.5
1974*	12,300	950	8.4
1975*	13,320	1,020	8.3

*Excludes formerly isolated Blythe load.

To meet the growth in power needs, including capacity margins to provide spinning and cold reserve requirements and to accommodate planned maintenance, net capacity additions totalling 7,898 megawatts during this 1967 through 1975 period are scheduled or planned, as shown in Exhibit No. 2. Edison has further shown therein reserve requirement deficits in the range of (a) 500 megawatts in December 1973 if the proposed Huntington Beach Unit No. 6, or a substitute of equivalent capacity, is not placed in service by that time, (b) 900 megawatts in August 1975 without the

proposed Huntington Beach Units Nos. 6 and 7 and (c) 100 megawatts in August 1975 with Huntington Beach Unit No. 6 or equivalent in service but without the proposed Huntington Beach Unit No. 7.

The Commission staff reviewed Edison's projections of system loads and evaluated its existing and planned resources, including capacity margins for contingencies, to meet these loads. On the basis of his analysis the staff witness concluded that: (1) the projections of system peak demands appear reasonable; (2) The probability of prolonged systemwide outages without the equivalent of Huntington Beach Unit No. 6 in 1974 and the equivalent of Unit No. 7 in 1975 is slight, but with a product as essential as electricity this risk should not be undertaken; (3) The installation of two 790-megawatt generating units in the 1974 and 1975 time period is necessary to fully insure the degree of reliability of electric service presently maintained by Edison.

The evidence presented by Edison and by the Commission staff establishes the need for 1,580 megawatts of additional electric generating capacity, the amount proposed in Application No. 51294, in the 1973 - 1975 time frame.

Proposed Huntington Beach Expansion

Proposed Huntington Beach Units Nos. 6 and 7 would each consist of a tandem-compound, reheat, turbine-generator with a nameplate rating of 750,000 kilowatts and an expected maximum net capability of 790,000 kilowatts. Each unit would have a single boiler with a capacity of 5,690,000 pounds of steam per hour at a throttle pressure of 3,500 pounds per square inch gauge and 1,000

degrees Fahrenheit with reheat to 1,000 degrees. The proposed new units would be constructed as an outdoor-type station with centralized control facilities. Sea water obtained from the Pacific Ocean would be used for cooling purposes. Facilities would be provided to burn natural gas with equipment for conversion on short notice to alternate burning of fuel oils.

With the addition of proposed Units Nos. 6 and 7 the Huntington Beach Power Plant would be expected to have an effective operating capacity of 2,571,000 kilowatts, of which the existing steam electric generating Units Nos. 1 through 4 and gas turbine peaking Unit No. 5, account for 870,000 kilowatts and 121,000 kilowatts, respectively.

The power output of the proposed new units would be transmitted to Edison's interconnected system through four 220 kv transmission circuits located on Edison's existing rights of way between its Huntington Beach Generating Station and its Ellis and Barre Substations which are to be reinforced for greater transmission capabilities. The Ellis and Barre Substations are located four miles and 17 miles, respectively, north of the Huntington Beach Plant.

The costs of the project are estimated to be as follows:

Units Nos. 6 and 7 and appurtenances	$177,900,000
Offsite transmission and fuel oil facilities	20,000,000
Total	$197,900,000

Proposed Units Nos. 6 and 7 are estimated to have a maximum net output heat rate of 9,122 Btu/kwh on gas fuel and a maximum net output heat rate of 8,709 Btu/kwh on oil fuel. At a capacity factor of 62 percent the new units are expected to produce energy at an average cost of 5.68 mils per Kwh with fuel at present price levels.

Edison proposes to finance construction of Units Nos. 6 and 7 from available funds or funds to be obtained from sale of securities, application for the issuance of which would be filed with the Commission, or under a lease arrangement presently under consideration by Edison and potential lessors. Definitive evidence as to possible savings in a lease versus ownership consideration depends upon the values of the complex of variables involved at the time such transaction might be undertaken.

Alternatives to Proposed Huntington Beach Plant Additions

As an essential prerequisite for viable alternatives to the Huntington Beach expansion, the required additional generating capacity must be capable of being made available in the 1973 - 1975 time frame. The record herein shows that this prerequisite could not be met by capacity additions to the following types of resources: nuclear plants; oil and gas-fired conventional plants in the South Coast Air Basin, other than at the Ormond Beach location, or elsewhere in California; coal-fired plants in California, or elsewhere; geothermal plants; Pacific Intertie power importation; and pumped storage.

The viable alternatives are oil and gas-fired steam electric generating capacity additions at the Ormond Beach location, gas turbine generating capacity, gas turbine-combined cycle generating capacity, and a modified Huntington Beach Plant expansion. The Ormond Beach option poses an air quality consideration similar to the one for the proposed Huntington Beach expansion and also a less desirable relationship between the location of loads and generating resources; the Ormond Beach site is located at the opposite end of the system from the major load growth, a substantial portion of which is in Orange County, projected for this time period; also, by 1973, 1,580 megawatts of additional generating capacity will have been completed at the Ormond location. The remaining viable alternatives are evaluated hereinafter in conjunction with their potential contributions to emissions inputs into the South Coast Air Basin by Edison power plants.

Air Quality

The opposition to Edison's proposed Huntington Beach expansion is based upon concern that the additional generating units would aggravate the serious air pollution problem which exists in Orange County and in the South Coast Air Basin.

Inputs of nitrogen oxides (NO_X) emissions into the atmosphere are stressed by representatives of the Orange County Air Pollution Control District and of the State Air Resources Board as the appropriate measure of contributions to the air pollution problem. Significantly, even by this measure and with ground level NO_X concentrations attributable to high vertical velocity emissions from high stacks aside, the evidence in this record clearly indicates

a lesser contribution to the air pollution problem in the South Coast Air Basin by Edison power plants with the Huntington Beach expansion than without it.

The higher level of emissions results without the Huntington Beach expansion because existing older generating units in the basin would have to carry more base and intermediate loads. In general, these older, higher emitter units, which would be required to operate at increased capacity factors, have lower operating efficiencies and thus burn more fuel for the same generation compared to the proposed new Huntington Beach units. The pertinent comparison of emission levels, as shown in Exhibit No. 34, is summarized as follows:

Estimated Average Annual NO_x Emissions into South Coast Air Basin by Edison Steam Electric Generating Units at Alamitos, Redondo, Etiwanda, El Segundo, Huntington Beach, Mandalay, Highgrove, San Bernardino and Ormond Beach

Tons Per Day

Year	Without Hunt. Bch Units 6 & 7	With Hunt. Bch Unit 6 Only	With Hunt. Bch Units 6 & 7
1975	140	136	133
1976	140	135	131
1977	121	121	119
1978	130	132	127
1979	122	122	117
1980	105	101	95

The "Without Huntington Beach Units 6 & 7" emission levels are representative of the levels if the gas turbine or gas turbine-combined cycle generating alternatives mentioned earlier were to be carried out, since these alternatives provide primarily peaking capacity. Their peaking function and keeping of operation and

maintenance costs and unit reliability at reasonable levels would require the higher capacity factor operation of existing steam electric generating units in the basin which result in higher emission levels.

Under the modified Huntington Beach expansion alternative also mentioned earlier, Huntington Beach Unit No. 6 and, in lieu of Unit No. 7, equivalent capacity in gas turbine generation within or outside of the South Coast Air Basin would be installed. The "With Huntington Beach Unit 6 Only" level of emissions is representative of this alternative, in which existing higher emitter generating units in the South Coast Air Basin also operate necessarily at an increased capacity factor. If, however, an extra base load unit, either of the fossil fuel-type, located outside the basin, or nuclear, could be completed and made operational in about 1978, a reduction in NO_x emissions on the order of eight tons per day from the "With Huntington Beach 6 Only" levels could be expected at that time through its displacing a portion of the generation by the existing higher emitter generating units in the South Coast Air Basin and also displacing the need for the gas turbine generating capacity installed instead of proposed Unit No. 7. Such reduction in emissions would come, however, not only at what would appear to be a less critical time, since the State Air Resources Board projects a substantial reduction in NO_x emissions by motor vehicles during the years 1975 through 1978, but at a considerable cost penalty to the utility and thus to the rate payers.

Beginning with 1971 model motor vehicles NO_x emission standards are to be applied. With such standards and their becoming progressively more stringent, the State Air Resources Board projects a reduction in estimated NO_x emissions in the South Coast Air Basin by motor vehicles from a peak value of 1,000 tons per day

in 1970 to 900 tons per day in 1975 and further reductions to 480 tons per day by 1980, and 340 tons per day by 1985. Edison also projects marked reductions in NO_x emissions from its power plants in the South Coast Air Basin. These projections range from reducing NO_x emissions from the 1968 level of 175 tons per day to a conservative estimate of 90 tons per day by 1985 or to 40-50 tons per day by 1985 based on calculated values depending to some extent on progress currently being made on NOx emissions control at Edison power plants.

The projected reductions are undoubtedly responsive to the emphasis now placed on effectively directing efforts toward reducing NO_x emissions. Such emphasis appears to be a very recent development. Indicative of this, under the California Motor Vehicle Control Program the reduction of hydrocarbon and carbon monoxide emissions on the 1966 and later model motor vehicles was accomplished at the expense of a substantial increase in oxides of nitrogen emissions.

Until recently, Edison has directed much of its air pollution control effort toward augmenting natural gas supplies, developing particulate matter removal equipment and obtaining supplies of low sulfur-low ash fuel oil. Earlier, in about 1957, however, Edison had pioneered NO_x emission reductions through the use of the so-called two-stage combustion. This enabled Edison to establish at that time a practical maximum level of 500 parts per million of NO_x emissions on its existing boilers.

In early 1969, Edison retained the services of Dynamic Science, Inc., to study combustion phenomena of utility boilers with emphasis directed toward minimizing the formation of oxides of nitrogen. Through this work and computer analysis techniques, an improved understanding of the NO_x production phenomena resulted which, along with an extensive testing program, has enabled Edison to make additional substantial reductions in NO_x emission rates. Improvements in combustion techniques under modified burner configurations now limit maximum NO_x emissions to approximately 200 parts per million for Edison's steam electric generating units other than its 320 MW class units. The latter units employ a different burning principle, tangential firing, and work is under way to reduce their emission rates.

These improvements have been reflected in the NO_x emission levels set forth in the preceding tabulation covering the 1975-1980 period and provide, along with reducing characteristically capacity factor operation with unit age, a marked reduction from the level of NO_x emissions of 175 tons per day experienced in 1968. In 1968 the NO_x emissions from the Huntington Beach power plant averaged 23.8 tons per day and had been as high as an average of 33.1 tons per day in the year 1961. In 1969 the NO_x emissions from the Huntington Beach power plant averaged 19.6 tons per day and under the proposed expansion the NO_x emissions from the entire plant are projected to reach an average of 27.3 tons per day in 1978 and decline to 19.3 tons per day in 1980.

The quantity of NO_x emissions from Edison power plants in the South Coast Air Basin is thus trended downward and

substantial further reductions appear attainable. Specifically, reductions in NO_x emissions of 20 to 25 tons per day can be made if Edison switches, as advocated by the Commission staff, from economic load dispatching to load dispatching on the basis of least NO_x emissions into the South Coast Air Basin (NO_x emission load dispatching). The cost penalty associated therewith is about $1,000,000 per year. Such penalty, however, would be substantially mitigated through a reduction in NO_x emissions, projected in the range of 15-19 tons per day during forecast period 1975-1980, which can reasonably be expected through modifications being made to Edison's 320 MW class generating units consisting of Alamitos Units 3 and 4, Etiwanda Units 3 and 4, and El Segundo Units 3 and 4. Flue gas is to be recirculated through the combustion chamber and the modifications to accomplish this in the aforesaid 320 MW class generating units are expected to be operative in May or June of this year.

If further tests now under way on this principle of recirculating the products of combustion through the furnace prove out as expected, Edison proposes to modify the units for the Huntington Beach expansion and achieve thereby a 25-50 percent reduction in NO_x emissions. This would further reduce NO_x emissions in the basin and at the Huntington Beach plant by four to eight tons per day in the 1975-1980 period.

The substantial reductions in NO_x emissions from Edison power plants achieved just within recent months and prospective reductions under way are indicative of a remaining potential for realistically achievable reductions. In this regard, the Commission

staff has specified a number of areas for research activities which hold some promise of yielding additional reductions.

Before directing our attention to the evidence concerning concentrations of nitrogen oxides at ground level attributable to the Huntington Beach Power Plant, we should point out that the record herein indicates that emissions of sulphur dioxide and particulates from power plants into the atmosphere have not been a problem in the South Coast Air Basin since the conversion of such power plants to low sulphur-low ash oil for supplemental fuel in late 1968.

In assessing the contribution of emissions from its power plants to the air pollution problem, Edison correctly observes that ground level concentrations of pollutants, not gross emissions, measure ambient air quality, the standards for which are, of course, in terms of concentration. This is borne out by the following policy statement in Exhibit No. 24, State Air Resources Board, Summary of Ambient Air Quality Standards: "In determining compliance with the standards through air monitoring, the sites and conditions of air sampling should be so chosen as to realistically represent the exposures of people, animals, vegetation and materials."

Edison presented comprehensive evidence concerning the ground level effects on air quality of the emissions from its Huntington Beach power plant. Studies comparable in scope were not undertaken by the State Air Resources Board or Orange County, although the Orange County Air Pollution Control District Officer had requested the Air Resources Board to make an estimate of ground level concentrations of pollutants from the Huntington Beach Power Plant.

The ambient air quality standard for NO_2 is 0.25 ppm for one hour. This standard was exceeded on 17 days in 1968 and 10 days in 1969 in Orange County and is frequently exceeded at diverse locations in the Los Angeles County portion of the South Coast Air Basin.

In Exhibit No. 10, Evaluation of Ambient Air Contributions From Existing and Planned Units of the Huntington Beach Plant - Summary Report, the conclusion is reached, considering the ambient air quality standard for NO_2 and assuming a conversion of NO_x to NO_2 of 50 percent, that the Huntington Beach plant can be operated with two additional 790 mw units without contributing more than 0.04 ppm of NO_2, leaving a residual of 0.21 ppm NO_2 for other sources before ambient air quality standards are violated. It is also concluded that, with improvements in the combustion process and the use of low sulphur fuel oil, the one hour maximum ground level concentrations in 1975 with both the 220 mw and 790 mw units in operation will be less than the equivalent maximum concentrations in 1968 from the existing 220 mw units.

Said Exhibit No. 10 summarizes the results of an analytical study to determine the ground level concentrations of NO_x and SO_2 from the operation of the Huntington Beach power plant. With the aid of a computer program the maximum ground level concentrations were determined for a wide range of meteorological conditions over the entire area of interest surrounding the Huntington Beach plant. Parameters used in the calculations included the source data (amount of pollutants emitted per unit time, plant power level, stack dimensions, stack gas exit characteristics, plume rise), receptor

point locations, wind direction, wind speed, atmospheric stability conditions, and height of the inversion base (mixing depth). The study utilized methods and procedures advocated by the Atomic Energy Commission, the National Air Pollution Control Administration and the United States Public Health Service.

The principal results of the study concerning ground level concentrations of NO_x were as follows:

1. The maximum one hour ground level concentration of NO_x for the two 790 MW units with 500-foot stacks at 102.5 percent load was calculated to be 0.033 ppm occurring during daytime in the spring. The location of the highest concentrations was found to be about 13 miles east of the plant. The frequency of occurrence for the maximum concentration was less than 1.0 percent of the time (88 hours) on an annual basis.

2. The maximum one hour ground level concentration of NO_x for combined operation of the 220 MW and 790 MW units at 102.5 percent load with 500-foot stacks for the 790 MW units was calculated to be 0.073 ppm, occurring during a spring day and located about 6 miles east of the plant. The frequency of occurrence for the maximum concentration was less than 1.0 percent of the time on an annual basis.

In addition to the witness sponsoring Exhibit No. 10, Edison presented two other outside consultants expert in the field of air pollution and meteorology. They have concluded that any increases in ground level concentrations of NO_2 resulting from the Huntington Beach plant will be "minimal". The Edison witnesses stress that the use of 500-foot stacks on the new units will

facilitate the emissions to penetrate or pierce the inversion barrier. On those days when atmospheric conditions are stagnant the emissions are most likely to pierce the inversion and not mix with the pollutants from other sources. With a stagnant atmospheric condition, smog is at its peak. Edison witnesses concluded that the emissions from Huntington Beach Units 6 and 7 will not exacerbate air pollution conditions in Orange County. An added factor emphasized by Edison is that the automobile is the principle source of pollutants in the atmosphere. By 1975, when Edison's proposed Huntington Beach Plant expansion would be completed, the Air Resources Board's motor vehicle NO_x reduction program should achieve significant results.

Participation in this proceeding by the Orange County Air Pollution Control District and the California Air Resources Board, for which the Commission is appreciative, clearly established on this record the serious nature of the air pollution problem in the South Coast Air Basin including the Orange County portion thereof, but it failed to establish that either the results of Exhibit No. 10 or the conclusions reached by Edison's three consultants are unreasonable or incorrect. On the other hand, the possibility has not been ruled out that Exhibit No. 10, as a conservative analytical study, conceivably could be subject to substantial error, since the results obtained through its methodology are unconfirmed by actual measurements in the South Coast Air Basin. Background concentrations complicate such measurements and require that some means, statistical or otherwise, be devised to isolate them from concentrations attributable to the power plant source.

More importantly, however, the preponderance of evidence points clearly to the salient fact that, to the extent the Edison power plants, expecially as a source of NO_x emissions, contribute to air quality problems in the South Coast Air Basin, the Huntington Beach power plant expansion would reduce, not increase, such contribution. It thus appears that public health would be better served from both air quality and reliability of electric service standpoints with the proposed Huntington Beach power plant expansion than without it. This outcome and the other NO_x reductions discussed are not incompatible with the conclusion reached by representatives of the Air Resources Board that achievement of satisfactory air quality in the basin will require stringent control of both vehicular and stationary sources of oxides of nitrogen. Their conclusion is based upon the ambient air quality standards being exceeded, at times by wide margins, and upon inputs of emissions into the atmosphere by vehicular and stationary sources.

The Orange County Air Pollution Control District and representatives of the California Air Resources Board oppose the proposed Huntington Beach power plant expansion. The Commission staff recommends that Edison be authorized and ordered to immediately commence construction of Huntington Beach Unit No. 6 and that the construction of Huntington Beach Unit No. 7 be authorized.

We should point out again that electric generating capacity additions through nuclear plants or fossil-fuel fired plants outside the South Coast Air Basin will not fit the required

1973-1975 time frame. The present predicament is to be avoided in the future.

It is, in part, toward this end that we have recently issued our General Order No. 131, Rules relating to the Planning and Construction of Facilities for the Generation of Electricity and Certain Electric Transmission Facilities. The general order will assure coordinated long range planning of generating unit additions compatible with the environment and with ten- and twenty-year forecasts of electric loads, resources and margins.

The Jurisdictional Issue

The Orange County Air Pollution Control District Officer has denied Edison's applications, filed with the District, for Authority to Construct and Permit to Operate the proposed Huntington Beach Units Nos. 6 and 7. If the denials are upheld upon appeal, our order herein will be in direct conflict with the action taken by the District. Thus, the specter of an important legal question: Can an Air Pollution Control District prevent a public utility from building facilities authorized or ordered by this Commission to meet the public need for electricity?

Briefs on this jurisdictional issue have been filed by the Orange County Air Pollution Control District, Edison and the Commission staff.

In essence, the briefs of Edison and the Staff assert that the Commission unquestionably has jurisdiction to authorize or order the construction and operation of Units Nos. 6 and 7 at

Edison's Huntington Beach generating station upon an adequate evidentiary basis; that the Commission has exclusive powers in the exercise of its jurisdiction; that local ordinances, rules and regulations, to the extent that they conflict with Commission authority, have been held to be void; and that air pollution is a factor which the Commission must consider in determining public convenience and necessity and public health and safety.

In its answering brief the Orange County Air Pollution Control District maintains that the powers of the District are within the police power, that the police power over public utilities has not been abrogated by the constitutional status of the Public Utilities Commission, and that this Commission's jurisdiction over regulated utilities is not exclusive but concurrent with the jurisdiction of the Air Pollution Control District over air pollution matters.

The District's contention as to its police power over air pollution matters being paramount to the authority of this Commission to regulate utilities to require that the public be furnished adequate electric service is not compatible with the constitutional, statutory and case law on the subject. Article XII, Section 23 of the California Constitution confers authority on the State Legislature to vest police powers in this Commission. Such powers have been so vested by various provisions of the California Public Utilities Code, including Sections 451, 584, 701, 761, 768, 770 and 1001. The cases are clear that in matters involving more than strictly local interest the broader

regulatory authority, in this case the State through its Public Utilities Commission, should prevail. (California Water and Telephone Co. v. Los Angeles County, 253 Cal. App, 2nd 16; Los Angeles Railway Corp. v. Los Angeles, 16 Cal. 2nd 779.)

As to concurrent jurisdiction, it may well exist as to some matters but the fact remains that if the local air pollution control district attempts to exercise whatever jurisdiction it may claim to have in a way which literally prevents the construction of proposed new generating units there is a direct confrontation with the jurisdiction exercised by this Commission once it has issued its certificate that the public convenience and necessity requires the construction and operation of the proposed units. Under those circumstances, the only resolution of that conflict compatible with the requirements of the California Constitution (Article XII, Section 23), and the California Public Utilities Code provisions enacted pursuant thereto, is a determination that the jurisdiction of this Commission in the matter is either exclusive or paramount. That was essentially the determination made in the California Water and Telephone Company and the Los Angeles Railway Corp. cases.

If utility regulation is to continue to be effective this Commission must deal both with overall environmental considerations and utility service requirements. Our General Order No. 131 supra was promulgated expressly to protect the environment and to better carry out this Commission's responsibilities to promote the safety, health, comfort, and convenience of the public and to regulate electric public utilities in the public interest.

To decide the question of public convenience and necessity in this proceeding the Commission has before it a comprehensive record developed at public hearing. This permits us to consider all aspects of the public interest, including the need for the additional generating resources and the environmental effects of the proposed additional generating facilities. Clearly the issues presented call for the exercise of regulatory jurisdiction by regulatory authority representing an interest broader than just one county, since neither the adequacy of electric service nor the effects of air pollution bear a functional relationship to a county boundary; the indicated functional relationship is to an integrated electric system or to an air basin. The public interest requires, and applicable law and legal precedent declare, that this Commission should have the necessary jurisdiction to confront and deal with the whole problem.

The provision of utility service is too vital to be subject to protracted litigation and jurisdictional squabbles. The regulation of utility service is of such importance that the Constitution and the Public Utilities Code permit no interference with the Commission. Only the Supreme Court can review the Commission's action. Jurisdiction over California utilities is vested in a single body, the California Public Utilities Commission.

The Commission has exclusive jurisdiction to authorize or deny authorization or order construction of public utility facilities. Local pollution control boards cannot prevent utilities from acting in compliance with Commission orders.

Further Research and Control Measures

The need for continuing NO_x research is recognized by all of the participants in this proceeding. Consonant therewith, all avenues of such research which hold reasonable prospects of success in further reducing power plant emissions should be pursued with dispatch. The Commission staff recommends in this connection that Edison institute or continue research programs in the following areas: (1) the effects of the removal of nitrogen from the fuel; (2) modification in the combustion process; and (3) collection of emissions after formation.

The importance of controlling power plant NO_x emissions requires their continuous monitoring by Edison at its steam electric generating plants in the South Coast Air Basin. Similarly, the importance of quantifying by actual measurement at receptor points the ground level contributions to NO_2 concentrations by such emissions requires that Edison undertake, in consultation with the State Air Resources Board and local air pollution control districts, to determine how, if at all, such measurements can be made.

Adoption of the least NO_x emissions load dispatch system discussed hereinabove is desirable at this time. It will reduce NO_x emissions into the basin and provide incentive for reducing NO_x emissions from higher efficiency generating units. Also, most of the cost penalty (about $3,000 per day) under this method of load dispatch is expected to be eliminated upon modification of the 320 MW class generating units. While other measures such as least NO_x emissions load dispatch modified to become operative only under

adverse meterological conditions and raising stack gas exit temperatures at such times appear, in concept, to be more selective and effective in mitigating air pollution, agreement as to proper implementation of the concept may be difficult and so time consuming as to cause inordinate delay in its use.

Among other reasons for so doing, Case No. 9007 should be kept open to give appropriate disposition to further developments affecting research programs and control measures.

Findings

The Commission finds that:

1. With the continuing growth in electrical demand and energy requirements in Southern California and particularly in Orange County, Edison will need additional generating capacity equivalent to the proposed new Huntington Beach units (1580 MW) in the 1973 - 1975 time frame to provide adequate, reliable electric service to the public.

2. The proposed Huntington Beach Units Nos. 6 and 7 are an economical, efficient and appropriate means of providing the required additional generating capacity for the 1973 - 1975 time frame.

3. The power output of the proposed new units can be connected into Edison's main transmission system and load center by way of transmission lines located on existing transmission rights-of-way thus minimizing construction of new transmission capacity into the area at this time.

4. Edison has the ability to finance and construct the generating capacity additions needed for the 1973 - 1975 time frame.

5. Within the 1973 - 1975 time frame, the principal viable alternatives to Huntington Beach Units Nos. 6 and 7 are gas turbine units, gas turbine-combination cycle units and other fossil fuel burning plants in the South Coast Air Basin.

6. Air pollution is a serious problem in the South Coast Air Basin.

7. With the addition of the proposed Huntington Beach units, Edison power plants will emit less oxides of nitrogen into the South Coast Air Basin than with gas turbines or combination cycle units which could be used in place of Huntington Beach Units Nos. 6 and 7. Without the proposed Huntington Beach units, emissions would substantially increase from existing generating units in the basin with lower boiler stacks, thus probably producing far greater ground level effects than emissions from the proposed 500-foot stacks of Huntington Beach Units Nos. 6 and 7. Such increased emissions from existing plants would be at locations upwind from the heavily populated areas of Los Angeles and Orange Counties.

8. Emissions of sulfur dioxide and particulates from power plants into the atmosphere have not been a problem in the South Coast Air Basin since the conversion of such power plants to low sulfur, low ash oil for supplemental fuel in late 1968.

9. The certification of Huntington Beach Units Nos. 6 and 7 will not produce an unreasonable burden on public health and safety or air and water quality. Actually, public health would appear to be better served from both air quality and reliability of electric service standpoints with the proposed Huntington Beach Power Plant expansion than without it.

10. Present and future public convenience and necessity will require the construction by Edison of Huntington Beach Generating Station Units Nos. 6 and 7 together with appurtenances and offsite fuel and transmission facilities as described by Edison in this proceeding. Edison will be directed to immediately commence construction of Huntington Beach Unit No. 6.

11. Within 90 days after Huntington Beach Unit No. 6 is placed in commercial operation, Edison should demonstrate that modifications to its plants and methods of operation have resulted in reductions in the emission of air pollutants consistent with the evidence Edison introduced in this proceeding.

12. Prior to the commercial operation of Huntington Beach Unit No. 7, Edison should show that all reasonable measures then known have been taken to achieve operations resulting in the least adverse impact on air quality.

13. Adoption of the least NO_x emissions load dispatch system by Edison is a reasonable emission control measure and will be required.

14. Continuous monitoring of nitrogen oxides in the stacks of all Edison conventional steam electric generating plants, other than those on cold standby, in the South Coast Air Basin would permit accurate calculations of NO_x emissions and serve to verify the improvements made by control measures. Such monitoring will be required.

15. A means of actual measurement at receptor points of the ground level contributions to NO_2 concentrations by NO_x emissions from Edison power plants should be sought. Edison should undertake,

in consultation with the State Air Resources Board and local air pollution districts, to determine how, if at all, such measurements can be made.

16. Research which holds reasonable prospects of success in further reducing NO_x emissions from Edison power plants must be pursued. Formulation of an Edison program or additional programs for further research consonant therewith will be required. The principal areas of research to be considered are:

a. Further modification in the combustion process.

b. The effect and feasibility of removing nitrogen from the fuel.

c. The collection of NO_x emissions after formation.

Further hearings may be necessary to assure that the research program which Edison formulates conforms to the stated objective.

17. The quantity of emissions from Edison power plants in the South Coast Air Basin is trended downward and substantial further reductions can be expected in the future.

18. In event of conflict in the exercise of jurisdiction of this Commission over a regulated utility and a local air pollution control district, particularly when that conflict involves a matter of more than strictly local interest and with respect to which this Commission has made a full inquiry, as a conclusion of law the jurisdiction of this Commission is paramount.

19. A substantial savings in accounting costs would be realized if applicant is permitted to file a combined cost report for Huntington Beach Units Nos. 6 and 7 one year after Unit No. 7 is placed in commercial operation.

20. In event of Edison's electing to finance its proposed Huntington Beach plant expansion through a lease arrangement, an adequate showing that such an arrangement would be in the public interest should be made. Our order hereinafter requires that such a lease arrangement not become effective until authorization of this Commission is obtained.

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 Huntington Beach power plant expansion should be authorized; that the construction of Huntington Beach Unit No. 6 should be started forthwith; that other actions, as prescribed in the following order, should be taken by Edison and that Case No. 9007 should be kept open.

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 Units Nos. 6 and 7 at its Huntington Beach Generating Station, together with appurtenances and offsite fuel and transmission facilities generally as described by Edison in this proceeding.

2. Southern California Edison Company shall commence construction of Huntington Beach Unit No. 6 immediately.

3. Within 90 days after Huntington Beach Unit No. 6 is placed in commercial operation, Southern California Edison Company shall file by affidavit with this Commission the following data and summary statements:

a. Actual and then currently projected NO_x emissions in terms of concentration (ppm) at full load and in terms of annual average tons per day by units of its generating stations in the South Coast Air Basin by years for the 1968 - 1980 period.

b. A summary statement of the specific measures taken with pertinent dates to reduce NO_x emissions from such plants.

c. A summary statement of further measures to be taken including the scheduling thereof to achieve additional reductions in NO_x emissions.

4. Upon completion but prior to commercial operation of Huntington Beach Unit No. 7, Southern California Edison Company shall file by affidavit with this Commission a summary statement

of measures taken to assure the least adverse impact on air quality in the operation of its power plants in the South Coast Air Basin together with a then current version of the data required under part a of the preceding ordering paragraph.

5. As much earlier as feasible but within 60 days after the effective date of this order Southern California Edison shall convert its load dispatch system from the most economical basis to the least NO_x emissions into the South Coast Air Basin basis.

6. As much earlier as feasible but within one year after the effective date of this order, Southern California Edison Company shall, through the installation of suitable equipment, institute continuous monitoring of nitrogen oxides in the stacks of its conventional steam electric generating plants, other than those on cold standby, in the South Coast Air Basin.

7. As much earlier as feasible but all within one year after the effective date of this order, Southern California Edison Company shall undertake, in consultation with the California Air Resources Board and local air pollution districts, to determine how, if at all, actual measurements, or correlations to actual measurements, can be made of ground level contributions to NO_2 concentrations by NO_x emissions from its power plants and shall file with this Commission a report on the outcome of this undertaking.

8. Within 120 days after the effective date of this order, Southern California Edison Company shall formulate plans for a

research program consistent with Finding 16 in the Opinion portion of this decision and file a comprehensive outline of such plans with this Commission.

9. In event of its electing to finance the Huntington Beach plant expansion, or portions thereof, through a lease arrangement, Southern California Edison Company shall seek authorization of this Commission for such a lease arrangement to become effective.

10. Within one year after Huntington Beach Unit No. 7 is placed in commercial operation, Southern California Edison Company shall file a combined cost report for Huntington Beach Units Nos. 6 and 7.

The effective date of this order shall be twenty days after the date hereof and Case No. 9007 shall remain open.

Dated at Los Angeles, California, this 23rd day of JUNE, 1970.

William Symons, Jr.
President

Commissioners

A-51294
C-9007

APPENDIX A
LIST OF APPEARANCES

FOR APPLICANT

Rollin E. Woodbury, Harry W. Sturges, Jr., William E. Marx, for Southern California Edison Company.

PROTESTANTS

John S. Wright, for Orange County Property Owners Association; Mrs. Ruth Duemler, for Stamp Out Smog, Woman's Auxilliary to Los Angeles County Medical Association; James V. Urban, Deputy County Counsel, for Orange County Air Pollution Control District; David A. Kirchner, for himself; Jim Somers, for Stamp Out Smog; Paul Ryckoff, for himself; Douglas F. Jeffrey, for Orange County Air Pollution Control District; Robert W. Battin, Supervisor 1st District, for Orange County Board of Supervisors; William Fitchen, for Orange County Air Pollution Control District; Edward Camarena, for Orange County Air Pollution Control District.

INTERESTED PARTIES

John S. Nevitt, for Louis J. Fuller, Air Pollution Control Officer, Los Angeles County; Jan S. Stevens, for State Air Resources Board; James L. Markman and Paul J. Richmond, Deputy Attorney Generals, for State Air Resources Board; Jack R. Rogoway, Planning and Zoning Administrator, for City of Westminster.

FOR THE COMMISSION STAFF

Leonard L. Snaider, Counsel, N. R. Johnson and Raymond E. Heytens.