APPLICATION FOR CERTIFICATION
00-AFC-14

El Segundo Power Redevelopment Project

Response to Data Requests

Submitted to the

California Energy Commission

Submitted by

El Segundo Power II LLC

RESPONSE TO DATA REQUESTS
Formal Data Requests
Received March 8, 2001

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TECHNICAL AREA: AIR QUALITY
AUTHOR: JOSEPH M. LOYER

BACKGROUND

The identification and approval of appropriate emissions offsets is frequently a cause of project delays. The applicant identifies several sources of offsets for the air quality impacts associated with the project emissions (AFC page 5.2-70 to -77). In this section of the AFC, the applicant identifies the need for further ERCs to be developed or negotiated and the need to develop interpollutant offset trading ratios for NOx, SOx and VOC for PM10. Staff encourages the Applicant to expedite the process of identifying and securing sufficient verifiable emission offsets. Staff also encourages the applicant to seek combustion PM10 ERCs originating in the same area as the project PM10 emission impacts to mitigate any potential environmental justice impacts from the proposed project PM10 emissions.

DATA REQUEST

1. Please provide documentation of all proposed offsets. This documentation may be any one of the following:
   - A Letter of Intent,
   - An Options Contract, or
   - An actual certificate.

Response No. 1: Table 1-1 shows an update of the credits proposed for the project.

Documentation of the credits for the shutdown of Units 1 and 2 is currently under review by the SCAQMD. Based on recent discussions with SCAQMD staff, we anticipate that the calculation of credits available from the shutdown of Units 1 and 2 will be updated in early April based on recent operations of those units.

The applicant has previously provided the CEC with copies of the contracts for most of ERCs that have been purchased. These ERCs are listed in Table 1-2. The contracts were included in the AFC at Appendix I.

TABLE 1-1
SUMMARY OF TOTAL OFFSETS REQUIRED AND AVAILABLE

Source	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	ROG (lbs/day)	PM_{10} (lbs/day)
Offsets Required		823	94	304	813
Offsets Available:					
Shutdown of Units 1 and 2		1600	11	105	145
Purchase of ERCs			245	314	23
Interpollutant Transfers			(239)		119.5
Enhanced Street-Cleaning					1674
ERCs under development or negotiation		1391	77	442.4	1144.6
SCAQMD Priority Reserve					813
Total Offsets Available		2991	94	861.4	3919.1
Remaining Offset Balance	0	2168	0	557.4	3106.1

TABLE 1-2
CREDIT CONTRACTS ALREADY PROVIDED TO THE CEC

Source Cert. No.	Location	Status	CO (lbs/day)	SOx (lbs/day)	ROG (lbs/day)	PM_{10} (lbs/day)	NO_x (lbs/day)
Honeywell	Commerce	P			33		
National Offsets	Torrance	P			47		
National Offsets	Torrance	P			50		
National Offsets	Torrance	P			70		
ARCO	Commerce	P		245			
Aerochem		P				6	
Honeywell		P			114		
Mobil/Exxon		P					70
Total				245	314	6	70

Status codes:
P: ERCs have been acquired through a purchase agreement
O: ERCs have been acquired through an option agreement
N: ERC final purchase pending, binding contracts have been signed.

In addition, since the AFC filing the applicant has acquired the credits shown in Table 1-3 and the contracts for these credits are contained in Attachment 1.

TABLE 1-3
RECENTLY ACQUIRED CREDITS

Source Cert. No.	Location	Status	CO (lbs/day)	SOx (lbs/day)	VOC (lbs/day)	PM_{10} (lbs/day)	NO_X (lbs/day)
Kenny Sandblasting		P				7	
Multi Fuels Marketing Cc		P				2	
Multi Fuels Marketing Cc		P		2			
Multi Fuels Marketing Cc		P					4
US Tile		P				3	
Multi Fuels Marketing Cc		P				5	
Union Carbide		P					20
Total				2		17	24

The Memorandum of Understandings for enhanced street cleaning was previously provided to the CEC under a separate confidential filing.

ERCs under development or negotiation is confidential information. Documentation will be provided upon finalization of agreements.

The applicant has also entered into discussions with the SCAQMD to access the PM_{10} Priority Reserve based on proposed revisions to SCAQMD Rule 1309.

2. Please provide full and detailed documentation of any proposed mitigation measures the applicant is pursuing to offset the potential project impacts.

Response No. 2: The proposed mitigation measures for the project were previously provided in the AFC. Mitigation measures for project operation will consist of acquisition of emission reduction credits as stipulated in the AFC with the revisions noted above. Mitigation measures for project construction will be as stipulated in the AFC Section 5.2.5.

3. Please provide full documentation for any interpollutant-trading ratio developed in conjunction with the South Coast Air Quality Management District.

Response No. 3: The South Coast Air Quality Management District is responsible for developing the interpollutant-trading ratios for the project. They will be making this determination based on previous analyses performed by the District for other projects in the area.

4. Please identify all viable combustion based PM10 ERCs available which originate in the same vicinity as the proposed project PM10 impacts.

Response No. 4: The only viable PM_{10} ERCs identified in the same vicinity of the project are street sweeping credits and credits generated from Units 1 and 2.

BACKGROUND

The applicant did not include the contribution of ammonia slip to the formation of secondary PM10. Ammonia slip can contribute to the formation of secondary PM10 by reacting with NOx and SOx to form nitrates and sulfates. This reaction can contribute to existing violations of the PM10 ambient air quality standards.

DATA REQUEST

5. Please evaluate the contribution of ammonia slip emissions from the proposed power plant on the formation of secondary PM10.

Response No. 5: Adding more ammonia to the ambient air will result in the immediate formation of ammonium nitrate particulate only if the area is ammonia-limited; that is, if there are excess acidic nitrates and sulfates available for reaction, the addition of ammonia to the atmosphere will result in the formation of ammonium nitrate and sulfate compounds. However, if the area is ammonia-rich, adding more ammonia to the air will not automatically result in more ammonium nitrate formation because the area is NO_x and SO_x limited. An examination of 1997 PM_{10}, PM_{10} nitrate, and PM_{10} sulfate concentrations for the Hawthorne monitoring station indicates that the El Segundo area probably can be characterized as mostly ammonia-rich, except during summer, when it becomes somewhat marginal with periods that are ammonia-poor.

Because data on ambient ammonia concentrations are not available, it is necessary to deduce ammonia concentrations indirectly based on available data regarding nitrate and sulfate concentrations. Ammonium nitrate concentrations are low to nonexistent under ammonia-poor conditions. In general, if no nitrates are present, the conditions are clearly ammonia-poor. Under ammonia-rich conditions, fairly large amounts of nitrates are found, since all available sulfuric acid has been neutralized. The 1997 Hawthorne data show occasional episodic nitrate events, during which the aerosol mass becomes predominantly composed of nitrates, such as occasionally occur in major urban areas of California.

The Hawthorne data described above suggest that the El Segundo project area is mainly NO_x/SO_2 limited, so that nitrate formation will be most effectively controlled by minimizing NO_x and SO_2 emissions from the turbines. The proposed 2 ppm NO_x emission limit (on an annual basis) and the use of natural gas fuel will achieve this objective. Therefore, we believe that ammonium nitrate formation as a result of ammonia slip from the turbines will not be significant. The proposed ammonia slip level of 5 ppm will mitigate any seasonal particulate nitrate formation.

BACKGROUND

There is a potential for visibility impairment due to vapor plumes produced by the project reaching ground level on adjacent roadways. This may affect traffic safety on the local roadways in the vicinity of the project site.

DATA REQUEST

29. Please provide an analysis of the traffic safety impacts resulting from the expected plumes from the project on adjacent roadways.

Response No. 29: Traffic safety impacts associated with plumes from the project stacks would present no safety impacts to traffic along Vista Del Mar Boulevard. Plumes have not historically been an issue to local roadways. The project would increase the height of the stacks, therefore elevating the anticipated height of the plume, and reducing potential impacts to Vista Del Mar Boulevard.

Note to the Reader: Responses to Data Requests 48 through 51 are provided below. These Data Requests originated from the City of El Segundo, and address air quality issues.

48. The Air Quality section of the AFC should clarify why weather data from the Lennox air monitoring station was used instead of data from the Hawthorne air station which is geographically closer to the project site (page 5.2-6).

Response No. 48: Data collected at the Lennox weather station were used to perform the air quality impact modeling for the proposed project because it is the closest weather station to the project site with a South Coast Air Quality Management District- approved meteorological data set. The

Lennox weather station is sometimes referred to as the Hawthorne weather station. Consequently, when the commentor refers to a Hawthorne monitoring station, the commentor may actually be referring to the Lennox weather station. Other than the Lennox/Hawthorne weather station, there is no other Hawthorne weather station where a South Coast Air Quality Management District-approved data set has been collected.

49. It is not clear if the baseline emission for each unit represents the maximum annual operation under full load conditions or if the plant has been operating under partial load conditions. The AFC should indicate the existing operating load related to the maximum potential load.

Response No. 49: As discussed in the AFC (page 5.2-45), the baseline emissions for the existing Units 1-4 are based on actual historical emission levels. The detailed baseline emissions for the existing units are included in the AFC as Appendix I, Table I.3.1. These detailed emission calculations show the actual heat input rates for each existing unit during the baseline period. For reference purposes, the detailed baseline emission calculations also show the maximum rated capacity of each existing unit.

50. The Air Quality section of the AFC should provide a discussion of why the future emissions of units 3 and 4 appear to be significantly higher than the baseline emissions (page 5.2-46). For instance, the current carbon monoxide (CO) emission level is 9 tons per year (Table 5.2-24) but the future level is expected to be 2,465 tons per year (Table 5.2-25). Does this mean the current units do not operate at full capacity? Would the increase in emissions violate any permit requirements or air quality standards? What mitigation measures are proposed for this increase?

Response No. 50: As discussed in the AFC (page 5.2-45), the calculations of future emissions for existing Units 3 and 4 are based on maximum possible daily and annual emission levels. The detailed emission calculations for the future emissions for Units 3 and 4 are included in the AFC as Appendix I, Table I.3.2. These detailed calculations show that the future emissions for Units 3 and 4 are based on operating at maximum hourly operating loads, 24 hrs/day, 365 days per year. There are no existing permit conditions prohibiting this level of operation. In addition, as shown in the AFC (page 5.2-61), there is no expected violation of any air quality standard associated with the future operation of Units 3 and 4 at maximum emission levels. The expected future emissions for Units 3 and 4 were included in the AFC for

purposes of full disclosure. Since Units 3 and 4 are existing equipment and not part of the proposed project, there is no need to propose mitigation measures for the future emissions for Units 3 and 4.

51. Table 5.2-32 describes the proposed emissions from the new equipment. The discussion related to this table should explain why the calculations for the maximum daily emission (lbs/day) do not seem to equate to the maximum annual emissions (tons per year) when the daily emissions are multiplied by 365 days per year and divided by 2000 pounds per ton.

Response No. 51: The AFC does explain the assumptions used to calculate the hourly, daily, and annual emissions (see page 5.2-49). As discussed in the AFC, there are several operating modes assumed for each emission averaging period (i.e., hourly, daily, and annual). Consequently, the emission calculations for the proposed project are not simply the maximum daily emissions multiplied by 365 days per year. The detailed emission calculations included in the AFC (Appendix I, Tables I.3.5a and I.3.5b) show all of the operating modes and emission rates used to calculate maximum hourly, daily, and annual emission levels for the proposed project.

TECHNICAL AREA: BIOLOGICAL RESOURCES
AUTHOR: NOEL DAVIS

BACKGROUND

In the Application for Certification, the applicant has provided an assessment of the biological impacts due to entrainment and impingement at the cooling water intakes. However, the analysis of entrainment impacts was based on studies done in 1981 at the Scattergood Generating Station. CEC staff is concerned that studies done over 20 years ago may no longer be valid. The Application for Certification provides recent information on ichthyoplankton from King Harbor in Redondo Beach and states that validating studies have just been completed to determine whether the King Harbor ichthyoplankton assemblage is representative of ichthyoplankton near the El Segundo Generating Station intakes. However, these recent plankton data are not used in the impact assessment.

APPLICANT'S CLARIFICATION OF BACKGROUND

Attachment 2 provides revised copies of Tables 5.6-8 through 5.6-13. These tables present abundance and biomass data for 1997 – 1999 for Units 1, 2, 3, and 4. A typographical error is corrected in the footnote to accurately restate the biomass units in kilograms.

DATA REQUESTS

6. Please provide an assessment of the impacts of entrainment and impingement on nearshore fish and invertebrate populations using the recent plankton data as well as recent information on impingement and the size of fish populations in Santa Monica Bay.

Response No. 6: **Impingement**. Table 5.6-13 was constructed by averaging the impingement data over the last three years, then listing in rank order the seven most abundant species impinged. These numbers were then compared to all known current data (1999) related to standing crop in Santa Monica Bay, or Commercial and Sport Fishing take per year. This data shows that impingement is not a significant impact related to the current operation of Units 1 and 2. The number of fish impinged is insignificant and no state or federally listed endangered or threatened fish have been impinged during the period of record reviewed. In addition, there are no geographical ranges for any state or federally listed endangered or threatened marine fish or invertebrates that come within 15 miles of the project site. Therefore, it is unlikely that such species will be impinged in the future. Fish impinged are primarily those living in the cooling system forebay as the impingement of fish from

Santa Monica Bay is almost non-existent. This monitoring data is current and directly applicable to the ESPR Project as the once-through cooling system will not be modified.

Entrainment. The determination that entrainment is and will not be a significant impact is based on a "worst case" assumption that all plankton entrained will be killed – i.e., the plankton killed will be directly proportional to the volume of water circulated. Nevertheless, although the relative concentration of ichthyoplankton may vary over time, it is assumed that the proportion of the ichthyoplankton in the receiving water affected will remain constant. Comparison of the volume of water circulated by Units 1 and 2 and the ESPR Project with the volume of the receiving water leads to the conclusion of no impact.

In order to further validate this conclusion, the Applicant contacted VanTuna Research Group (VRG) to provide ichthyoplankton data that has been collected over several years at King Harbor in Redondo Beach, approximately five miles to the south of ESGS. After a review of the conditions at the two sites, VRG was then tasked with conducting a validation study to assess applicability of the King Harbor ichthyoplankton data to the ESPR project. This study entailed collection of ichthyoplankton at both sites at the same time during the Fall of 2000, using the same methods as used in their ongoing King Harbor data collection program. The study includes a statistical analysis of similarities of ichthyoplankton communities (abundance and diversity) at the two sites.

As of press time (late December 2000) prior to filing the AFC, the King Harbor validation study was ongoing. Since then, the final report has been completed, and it concludes that there is no statistical difference between the concentrations and communities of ichthyoplankton at King Harbor and the point of intake for Units 1 and 2.

In an effort to provide the most current analysis for the ESPR project, the Applicant has asked VRG to provide King Harbor ichthyoplankton data, which will then be used for analysis of entrainment impacts at El Segundo. A report of this analysis will be forwarded to CEC when it is completed, no later than April 18, 2001.

VanTuna Research Group is a consulting firm established at Occidental College, and founded by Dr. John Stephens, Ph.D. Since the mid-1970s, VRG has concentrated its efforts on marine monitoring and freshwater ecology in the Southern California region. VRG's monitoring programs

are funded by various clients, and much of their funding is provided by grant research work. Principal investigators of the ichthyoplankton at King Harbor are Dr. John Stephens and Dan Pondella. All identification work has been completed by Gary Jordan, a well-known ichthyologist, specializing in the taxonomy of fish larvae/eggs.

Additional detail on the assessment of biological consequences of the cooling water supply can be found in Section 5.6.2.1.3 of the AFC.

The ESGS participated in pilot regional monitoring programs for the Southern California Bight in 1994 and 1998. The results of the pilot programs are being evaluated and will be used to design future pilot monitoring programs and to develop a comprehensive regional monitoring program for the Southern California Bight. Provision IV, Receiving Water Monitoring, of the Monitoring and Reporting Program associated with the NPDES Permit No. CA0001147, issued by the Los Angeles Regional Water Quality Control Board on June 29, 2000, provides for continued participation in the future regional monitoring programs for the Southern California Bight. The NPDES permit can be found in Appendix H-10 in Volume III of the AFC.

BACKGROUND

CEC staff is concerned that several species of commercial and sportfishing importance may be affected by operations of the El Segundo Generating Station. These species include white seabass (*Atractoscion nobilis*), black seabass (*Stereolepis gigas*), California halibut (*Paralichthys californicus*), spiny lobster (*Panulirus interruptus*), and bocaccio (*Sebastes paucispinus*)(petitioned for listing under the federal Endangered Species Act). Even though impingement and entrainment of these species may be low, the populations of these species in Santa Monica Bay may also be low or declining.

DATA REQUESTS

7. Please provide an analysis of the impacts of impingement and entrainment by the El Segundo Generating Station cooling water intake on the populations of white seabass (*Atractoscion nobilis*), black seabass (*Stereolepis gigas*), California halibut (*Paralichthys californicus*), spiny lobster (*Panulirus interruptus*), and bocaccio (*Sebastes paucispinus*). Please base this analysis on recent data and consider that the impacts of the El Segundo Generating Station is in addition to whatever fishing pressure there may currently be on each population.

Response No. 7: As reflected in Table 7-1, the total numbers of the identified species of interest impinged at the ESGS (including Units 3 and 4) during 1997, 1998 and 1999 were insignificant. In the last three years, only one species (*Panulirus interruptus*) listed in the above question was impinged at the Unit 1 and 2 forebay. Most of the fish were impinged during heat treatment and originated from populations living in the intake forebay. Additional detail regarding the biological consequences of cooling water supply can be found in Section 5.6.2.1.3 of the AFC.

TABLE 7-1
NUMBER OF INDIVIDUALS OF SELECTED SPECIES IMPINGED - 1997 – 1999

Species (Latin Name)	Unit 1 & 2		Unit 3 & 4		Combined Total 1997-1999	Commercial[3] (lbs) 1999	Sport[4] 1999
	Heat[1]	Normal[2]	Heat[1]	Normal[2]			
Atractoscion nobilis	0	0	36	0	36	246,871	11,512
Stereolepis gigas	0	0	1	0	1	0	0
Paralichthys californicus	0	0	7	0	7	1,327,233	9,285
Panulirus interruptus	14	0	61	55	130	489,254	N.A.
Sebastes paucispinus[5]	0	0	0	0	0	6,456,012	495,873

1 Species impinged during heat treatment.
2 Extrapolated annual impingement during normal operations.
3 Source: 1999 State of California marine fish commercial landings. Data extracted from the PacSIN database.
4 1999 sport fishing take in Santa Monica Bay. Numbers represent number of fish taken in Santa Monica Bay from the sport fishing fleet; however, these numbers of fish taken do not include individual recreational take.
5 Includes all Rockfish.
N.A. Data not available.

BACKGROUND

CEC staff is concerned that populations of fishes and invertebrates in Santa Monica Bay are being impacted by at least three cooling water intake systems, the El Segundo Generating Station, the Scattergood Generating Station, and the Redondo Generating Station. The cumulative impacts analysis in the Application for Certification merely states that the proposed El Segundo Generating Station Power Redevelopment Project will not increase impacts therefore cumulative impacts are negligible. The conclusion of minimal cumulative impact is based on the fact that significant adverse effects from power plant cooling water intakes have not been demonstrated in California. However, CEC staff is not aware that an analysis has been done to specifically determine potential cumulative impacts of power plant cooling water systems on the marine resources of Santa Monica Bay.

DATA REQUEST

8. Please analyze the cumulative impact on the marine resources of Santa Monica Bay of the cooling water intakes of three power plants, the El Segundo Generating Station, the Scattergood Generating Station and the Redondo Generating Station, operating simultaneously. Please consider that these impacts are in addition to the fishing pressure on certain species. Please specifically address the cumulative impacts to white seabass (*Atractoscion nobilis*), black seabass (*Stereolepis gigas*), California halibut (*Paralichthys californicus*), spiny lobster (*Panulirus interruptus*), and bocaccio (*Sebastes paucispinus*).

Response No. 8: As reflected in Table 8-1, the total numbers of individuals of the identified species of interest impinged at the ESGS during 1997, 1998 and 1999 were insignificant. Most of the fish impinged at the ESGS were impinged during heat treatment and originated from populations living in the intake forebay. Therefore it is concluded that the ESGS does not provide a significant contribution to the cumulative impacts, if any, on the identified species of concern. Additional detail regarding the biological consequences of cooling water supply at the ESGS can be found in Section 5.6.2.1.3 of the AFC.

TABLE 8-1
NUMBER OF INDIVIDUALS OF SELECTED SPECIES IMPINGED - 1997 – 1999

Species (Latin Name)	Unit 1 & 2		Unit 3 & 4		Combined Total 1997-1999	Commercial[3] (lbs) 1999	Sport[4] 1999
	Heat[1]	Normal[2]	Heat[1]	Normal[2]			
Atractoscion nobilis	0	0	36	0	36	246,871	11,512
Stereolepis gigas	0	0	1	0	1	0	0
Paralichthys californicus	0	0	7	0	7	1,327,233	9,285
Panulirus interruptus	14	0	61	55	130	489,254	N.A.
Sebastes paucispinus[5]	0	0	0	0	0	6,456,012	495,873

1 Species impinged during heat treatment.
2 Extrapolated annual impingement during normal operations.
3 Source: 1999 State of California marine fish commercial landings. Data extracted from the PacSIN database.
4 1999 sport fishing take in Santa Monica Bay. Numbers represent number of fish taken in Santa Monica Bay from the sport fishing fleet; however, these numbers of fish taken do not include individual recreational take.
5 Includes all Rockfish.
N.A. Data not available.

DATA REQUEST

9. Please discuss whether there may be technologies available and feasible that would reduce the impacts of the cooling water intake on marine resources.

Response No. 9: Impingement consists of holding marine resources by pressure differential across screen grids that protect the cooling water system from entraining marine resources. The El Segundo Generating Station (ESGS) currently utilizes a velocity cap intake system to reduce entrainment. Ongoing compliance monitoring demonstrates that the velocity cap is very effective in preventing entrainment resulting in impingement at the ESGS. Impingement prior to installation of the velocity cap at Units 1 and 2 was 272.2 tons of fish per year. This was reduced to 14.95 tons immediately after installation of the velocity cap in the mid-1950s. Impingement monitoring during 1999 indicates that 0.045 tons (about 90.2 pounds) of fish were impinged at Units 1 and 2.

Most of the fish were impinged during heat treatment and originated from populations living in the intake forebay. Details regarding the biological consequences of cooling water supply at the ESGS can be found in Section 5.6.2.1.3 of the AFC.

The velocity cap intake system used at the ESGS would be considered for implementation today on a coastal once-through power generation facility. Alternatives to the velocity cap include the Gunderboom Marine Life Exclusion System (MLES^{TM}). The MLES is an engineered system of screens that encloses an intake structure on a once-through facility. Since the screen area is large, water velocities across the screen are small, and the pressure difference that would induce impingement of marine life is small. However, the feasibility of applying this technology on a project of this magnitude in a coastal intake is improbable.

Previous installations of the MLES have been for flow rates that are significantly less than for the ESGS once-through cooling system. The intake is located away from the shoreline and underground tunnels feed water from the ocean. Installation of the MLES is typically along a shoreline or river bank directly surrounding an intake structure. The placement of the ESGS intake away from the shoreline makes the installation of the MLES logistically difficult, if not impossible.

Another technology to reduce impingement is the wedgewire screen. The wedgewire screen operates in a manner similar to the velocity cap, but differs from the velocity cap in that the velocities across the screen

are much more uniform than a conventional passive screen. The uniform velocities across the screen would serve to limit the impingement of marine resources when compared to the velocity cap.

Wedgewire screens are not designed for flow rates as high as required for the ESGS once-through cooling system. For a proper installation, multiple screens would need to be installed at the ocean water intake. The use of wedgewire screens would also require a means for clearing the screens to maintain an acceptable intake velocity. This is generally accomplished with an air purge, which essentially dislodges any marine growth and debris that accumulates on the wedgewire screens by backflowing air through the screens. Maintenance of an air purge system would be impossible given the location of the intake in the ocean. Therefore this technology is not feasible for this application.

ESGS's use of a velocity cap can be expected to perform well when compared to the MLES and wedgewire screens. Marine resource impingement at the El Segundo site is currently extremely low, and the incorporation of the MLES or wedgewire screens into the cooling water intake system would not be expected to reduce the impingement rate from its current rate. In addition, installation would require disruption of the ocean floor and modification to the existing discharge line.

Impingement results during normal operations are so low and infrequent, that a statistical analysis to compare differences of alternative technology would be based on a data set with a mean impingement number for most species ranging from 0 to <1, and very high variance. As a result, it would be very unlikely that any type of analysis, such as a Student "T" test or ANOVA would result in a significant difference between technologies that provided additional benefits. Furthermore, when mean numbers of individuals per species impinged is generally less then 1, and in most cases 0, any incremental improvement would not justify the costs or disruptions to the ocean floor or modification of the existing discharge line associated with the installation of the new technology.

To further address fish impingement, the ESPR Project proposes to initiate a pilot project to investigate the feasibility for a fish removal method prior to heat treatment. This pilot project is described under Applicant's proposed Mitigation Measure BIO-11, in Section 5.6.4 of the AFC. The method to be evaluated in this pilot project will be the deployment of a modified beach seine net in an attempt to scoop fish out of the forebay and return them to the ocean. Evaluation of the success of

this program will be based on comparisons from present and historical fish and invertebrate impingement data during heat treatments. If a significant decrease in impingement can be quantified, the method and technique will be incorporated in the appropriate heat treatment protocols.

BACKGROUND

The Application for Certification states that impingement deaths are related to heat treatments done to clear the cooling water system of fouling organisms. CEC staff is concerned that heat treatment may have a greater impact on biological resources than alternative methods to remove fouling organisms.

DATA REQUESTS

10. Please provide justification that heat treatment is the least environmentally damaging practical alternative for the control of fouling organisms in the cooling water system.

Response No. 10: The heat treat process is considered to be the BTA to keep the cooling water system free from fouling. The heat treat process is used to remove fouling organisms from the El Segundo Generating Station (ESGS) cooling water system. The heat treat process consists of recycling heated cooling water from the steam surface condenser outlet back to the cooling water intake and sending it through the cooling water system again. This serves to heat the cooling water to a level that removes biological growth that has accumulated on the cooling water system piping and the tube side of the steam surface condenser. The heat treat process currently is only performed once every six weeks to remove fouling organisms.

Chlorination is used in conjunction with heat treatment to remove biological growth from the condensers under a variance issued by the Los Angeles Regional Water Quality Control Board. This variance was approved by the State Water Resources Control Board and USEPA Region IX. A copy of the variance is included as Attachment H-16, in Volume III of the AFC. Chlorination is discussed in more detail in Section 5.5.1.1.3. One alternative to heat treatment is a more intense chlorination treatment. This alternative was not considered as it would not be consistent with the requirements of the variance.

As reflected in Table 10-1, the total numbers of the identified species of interest impinged during heat treatment at the ESGS during 1997, 1998 and 1999 were not significant. Most of the fish impinged at the ESGS were impinged during heat treatment and originated from populations living in the intake forebay. Therefore it is concluded that the ESGS does not provide a significant contribution to the cumulative impacts, if any, on the identified species of concern. Additional detail regarding the biological consequences of heat treatment of the cooling water system at the ESGS can be found in Section 5.6.2.1.3 of the AFC.

TABLE 10-1
NUMBER OF INDIVIDUALS OF SELECTED SPECIES IMPINGED DURING HEAT TREATMENT - 1997 – 1999

Species (Latin Name)	Unit 1 & 2 Heat	Unit 3 & 4 Heat	Commercial[1] (lbs) 1999	Sport[2] 1999
Atractoscion nobilis	0	36	246,871	11,512
Stereolepis gigas	0	1	0	0
Paralichthys californicus	0	7	1,327,233	9,285
Panulirus interruptus	14	61	489,254	N.A.
Sebastes paucispinus[3]	0	0	6,456,012	495,873

1. Source: 1999 State of California marine fish commercial landings. Data extracted from the PacSIN database.
2. 1999 Sport fishing take in Santa Monica Bay. Numbers represent number of fish taken in Santa Monica Bay from the sport-fishing fleet; however, these numbers of fish taken do not include individual take.
3. Includes all Rockfish.

N.A. Data not available.

An alternative to the use of the heat treat process is the use of a condenser tube cleaning system (CTCS) in conjunction with a debris filtering system to remove bio-fouling organisms. The CTCS in conjunction with the debris filtering system would serve to keep the steam surface condenser un-fouled but would not provide any means of keeping the cooling water pipes upstream and downstream of the condenser from becoming fouled. The CTCS operates by injecting sponge-rubber balls into the cooling water piping immediately upstream of the steam surface condenser. The sponge-rubber balls are slightly larger diameter than the internal diameter of the condenser tubes and act to scour any bio-growth from the condenser tube walls. Upon exiting the condenser, the balls would be collected by a strainer and recycled through the condenser. The debris filter would be located upstream of the CTCS ball injection to the condenser. It would serve to capture any debris and/or marine organisms that passed through the intake pre-screening systems. The debris filter would then backwash

the captured debris and marine organisms to the discharge cooling water piping downstream of the CTCS ball collection strainers.

While the CTCS and debris filtering system would keep the condenser free of fouling organisms, they will not ensure that the cooling water piping upstream and downstream of the condenser remains free from bio-fouling. The CTCS will only maintain the cleanliness of the condenser and keep it free of fouling organisms.

Note to the Reader: Responses to Data Requests 45, 52, 53, 54, and 55 are provided below. These Data Requests originated from the City of El Segundo, and address water and biological resources issues.

BACKGROUND

Attachment 7 in the Application for Certification makes the argument that the intake system of the Scattergood Generating Station, which is similar to the intake of the El Segundo Generating Station, is the best technology available because impacts to aquatic resources are not great. However, since the design and subsequent modification of the intake by the velocity cap, additional technologies may have become available that would further reduce impacts to marine resources.

45. The AFC should describe in more detail the proposed study of heat treatment as indicated on page 1-9.

Response No. 45: This study is discussed in Applicant's proposed mitigation measure BIO-11, in Section 5.6.4, on p. 5.6-65 of the AFC. Proposed mitigation measure BIO-11 provides for a pilot project to investigate the feasibility of a fish removal method prior to heat treatment. The method to be evaluated will be the deployment of a modified beach seine net in an attempt to scoop fish out of the forebay and return them to the ocean. Evaluation of the success of this program will be based on comparisons from present and historical fish and invertebrate impingement data during heat treatments. If a significant decrease in impingement can be quantified, the method and technique will be incorporated in the appropriate heat treatment protocols.

52. The AFC should discuss any plans for the construction of a desalination plant in conjunction with the project, if such a plant is under consideration.

Response No. 52: Construction of a desalination plant is not proposed as a part of the ESPR project. The owner of El Segundo Power LLC was approached by West Basin Municipal Water District to make a small space at the plant site available for a demonstration unit. Discussions are ongoing, but no definitive agreement has been reached.

53. The AFC should include a discussion of any potential environmental impacts from the outfall from the Hyperion Waste Treatment Plant entering the seawater intakes for the power plant with the outfall from the power plant contributing to biological contamination. This has been raised as a concern with the proposed AES Huntington Beach power plant upgrade and the proximity of Hyperion Waste Treatment Plan to the proposed El Segundo Power Plant project appears to be similar to the circumstances that existing in Huntington Beach.

Response No. 53: The AES Huntington Beach Generating Station has been identified as a potential transporting agent for coliform from offshore discharge of the Orange County Sanitation District (OCSD) outfall. Phase I studies conducted by OCSD in 1999 indicated that the generating station was neither the source nor transport mechanism for the contamination. However, upwelling of the wastewater field by the AES Huntington Beach Generating Station outfall cannot be ruled out as a mechanism for elevating surf zone levels of indicator bacteria.

Dr. Stanley Grant[1] proposed that the sea water circulation cell produced by the Huntington Beach Generating Station offshore cooling water conduits could act as a cross-shelf transport mechanism, bringing subsurface contaminated waters to the surface and surf zone. However, this is only one of a number of the potentially related causes that are being evaluated to develop an understanding of the elevated bacterial levels at Huntington Beach. At this time no direct relationship has been determined between the operation of the once-through cooling system at the AES Generating Station and elevated bacteria levels at Huntington Beach.

Other sources of elevated bacteria levels at Huntington Beach that are also being investigated include:

[1] Grant, S.B., C. Webb, B.F. Sanders, A. Boehm, J.H. Kim, J.A. Redman, A.K. Cho, R. Morse, S. Jiang, N. Gardiner, and A. Brown. 2000. Final Report: Huntington Beach Water Quality Investigation Phase II: An analysis of ocean, surf zone, watershed, sediment and groundwater data, collected from June 1998 through September 2000. Prepared for National Water Research Institute, County of Orange, Cities of Huntington Beach, Fountain Valley, Costa Mesa, Santa Ana and Newport Beach, Orange County Sanitation District.

- Subsurface sewer collection systems
- Nuisance runoff, and
- Natural sources of indicator bacteria in the surf zone.

The most notable difference between the conditions at Huntington Beach and El Segundo is the measurement of bacterial indicators at the adjacent beaches. Elevated levels of bacterial indicators at Huntington Beach have lead to frequent beach closures. However, from May through October of 2000, only one bacterial indicator level exceedance was measured at Dockweiler State Beach at the extension of Grand Avenue (August 7 – 576 Enterococcus organisms per 100 ml vs. a standard of 104 organisms per 100 ml.)[2] Los Angeles County Department of Health Services beach monitoring staff describe Dockweiler State Beach as very clean and note that elevated bacterial indicator levels, when detected, are related to storm drain discharges.[3]

There are significant and notable differences between the conditions at Huntington Beach and El Segundo, not the least of which is the difference between the conditions in the ocean off of Huntington Beach and Santa Monica Bay. This includes the east-west orientation of Huntington Beach and the north/south orientation of the beaches facing Santa Monica Bay. Also, the distance between the AES Huntington Beach cooling water intake and the OCSD outfall is 4 miles and the distance between the ESRP Project intake and the Hyperion outfall is approximately 6 miles.

There are also significant differences between the AES Huntington Beach intake and the ESRP intake as noted below:

	Huntington Beach	**ESPR**
Maximum Flow	357,000 gpm	143,750 gpm
Intake Dimensions	21 feet by 18 feet	10 feet
Velocity Cap Opening	5 feet	3 feet

The AES Huntington Beach cooling water intake structure is much larger, and the maximum flow circulated is 2½ times the flow at the ESGS.

[2] Los Angeles County Department of Public Health, Ocean Monitoring Data, May-October, 2000.
[3] Richard Kebabjian, Los Angeles County Department of Health Services, personal communication, March 19, 2000.

There are also significant differences between the OCSD and Hyperion wastewater characteristics at the respective sanitary outfall locations. Hyperion provides full secondary treatment, whereas OCSD provides only 75 percent secondary treatment, resulting in higher solids content in the OCSD discharge. In addition, Hyperion discharges in the vicinity of a deep submarine canyon.

54. The AFC should include the location of the recently constructed artificial surf reef, known as Pratte's Reef, on the appropriate maps The AFC should include a discussion of any potential impact on the surf conditions of the reef.

Response No. 54: A revised Figure 5.6-8, Near-Shore Environment Within Santa Monica Bay, indicates the location of Pratte's Reef in relation to the ESGS and other nearshore structures. This figure is provided as Attachment 3. Pratte's Reef is located in Santa Monica Bay approximately 250 yards south of the Hyperion Treatment Plant outfall structure, and about 1,500 yards north of the ESGS. This artificial reef was installed in September, 2000 at a depth of minus-15 feet below mean sea level, just outside the surf zone.

Since no changes to the intake or discharge structure will be needed for the ESPR project and the flow rates and the physics pertaining to the water flow of the once through cooling water system will remain the same, there will be no changes resulting from the ESPR project to the surfing conditions found at Pratte's Reef.

55. The City is concerned about potential stormwater run-off from potentially contaminated areas discharging to the ocean without treatment other than oil separators (page 3.4-12). The AFC should clarify the extent of potential contamination in the stormwater runoff.

Response No. 55: The NPDES permit for the ESGS requires the development and implementation of a storm water pollution prevention plan (SWPPP) for the facility. The ESGS is required to update the SWPPP to reflect changes in the facility. The objective of the SWPPP is to manage storm water runoff quality by preventing the exposure of materials to storm water, thereby preventing the contamination of storm water runoff. In addition, the discharges from the ESGS are required to comply with effluent limitations. The SWPPP requirements and effluent limitations are described in the NPDES permit issued by the Los Angeles Regional Water Quality Control Board to the ESGS. This Permit is included as Attachment H-10 in Volume III of the AFC.

Note to the Reader: Responses to Data Requests 78 through 85 are provided below. These Data Requests originated from the California Coastal Commission, and address water and biological resources issues.

BACKGROUND

Our concerns are increased given the existing conditions of Santa Monica Bay. As described in the AFC, "(t)he biological community in Santa Monica Bay has been identified as being imbalanced, severely stressed, or known to contain toxic substances in concentrations that are hazardous to human health." (p. 5.5-11). Additionally, Santa Monica Bay is described as impaired on the current 303(d) list due to levels of mercury, cadmium, copper, lead, nickel, silver, zinc, chlordane, DDT, and PCBs. The AFC does not adequately describe the cumulative impacts of current or proposed ESGS operations when evaluated alongside these other above-mentioned impacts.

We commend the applicant for stipulating to several mitigation measures (in AFC Section 5.6.4, BIO-9, -10, and –11) that partially address our concerns; however, the measures described in the AFC do not adequately mitigate for the known and probable impacts of past, current, and proposed operations.

DATA REQUEST

78. Additional information should be provided regarding the full effect of current and proposed facility operations on entrainment and impingement, and findings of other more recent studies on entrainment and impingement should be included in the CEC's review. We recommend that new studies be conducted to update the findings of the original 316(b) study and to represent new understanding in marine ecosystem interactions and sampling techniques and methodologies.

Response No. 78: **Impingement**. Table 5.6-13 is provided in Attachment 2 to this Data Response package. This table was constructed by averaging the impingement data over the last three years, then listing in rank order the seven most abundant species impinged. These numbers were then compared to all known current data (1999) related to standing crop in Santa Monica Bay, or Commercial and Sport Fishing take per year. This data shows that impingement is not a significant impact related to the current operation of Units 1 and 2. The number of fish impinged is insignificant and no state or federally listed endangered or threatened fish have been impinged during the period of record reviewed. In addition, there are no geographical ranges for any state or federally

listed endangered or threatened marine fish or invertebrates within 15 miles of the project site. Therefore, it is unlikely that such species will be impinged in the future. Fish impinged are primarily those living in the cooling system forebay as the impingement of fish from Santa Monica Bay is almost non-existent. This monitoring data is current and directly applicable to the ESPR Project as the once-through cooling system will not be modified.

Entrainment. The determination that entrainment is presently an insignificant impact, and that it will continue to be an insignificant impact, is based on a "worst case" assumption that all plankton entrained will be killed – i.e., the plankton killed will be directly proportional to the volume of water circulated. Although the relative concentration of ichthyoplankton may vary over time, it is assumed that the proportion of the ichthyoplankton in the receiving water affected will remain constant. Comparison of the volume of water circulated by Units 1 and 2 and the ESPR Project with the volume of the receiving water leads to the conclusion of no impact.

In order to further validate this conclusion, the Applicant contacted VanTuna Research Group (VRG) to provide ichthyoplankton data that has been collected over several years at King Harbor in Redondo Beach, approximately five miles to the south of ESGS. After a review of the conditions at the two sites, VRG was then tasked with conducting a validation study to assess applicability of the King Harbor ichthyoplankton data to the ESPR project. This study entailed collection of ichthyoplankton at both sites at the same time during the Fall of 2000, using the same methods as used in their ongoing King Harbor data collection program. The study includes a statistical analysis of similarities of ichthyoplankton communities (abundance and diversity) at the two sites.

As of press time (late December 2000) prior to filing the AFC, the King Harbor validation study was ongoing. Since then, the final report has been completed, and it concludes that there is no statistical difference between the concentrations and communities of ichthyoplankton at King Harbor and the point of intake for ESGS Units 1 and 2.

In an effort to provide the most current analysis for the ESPR project, the Applicant has asked VRG to provide King Harbor ichthyoplankton data, which will then be used for analysis of entrainment impacts at El Segundo. A report of this analysis will be forwarded to CEC when it is completed, no later than April 18, 2001.

VanTuna Research Group is a consulting firm established at Occidental College, and founded by Dr. John Stephens, Ph.D. Since the mid-1970s, VRG has concentrated its efforts on marine monitoring and freshwater ecology in the Southern California region. VRG's monitoring programs are funded by various clients, and much of their funding is provided by grant research work. Principal investigators of the ichthyoplankton at King Harbor are Dr. John Stephens and Dan Pondella. All identification work has been completed by Gary Jordan, a well-known ichthyologist, specializing in the taxonomy of fish larvae/eggs.

Additional detail on the assessment of biological consequences of the cooling water supply can be found in Section 5.6.2.1.3 of the AFC.

The ESGS participated in pilot regional monitoring programs for the Southern California Bight in 1994 and 1998. The results of the pilot programs are being evaluated and will be used to design future pilot monitoring programs and to develop a comprehensive regional monitoring program for the Southern California Bight. Provision IV, Receiving Water Monitoring, of the Monitoring and Reporting Program associated with the NPDES Permit No. CA0001147, issued by the Los Angeles Regional Water Quality Control Board on June 29, 2000, provides for continued participation in the future regional monitoring programs for the Southern California Bight. The NPDES permit can be found in Appendix H-10 in Volume III of the AFC.

79. Also, the ongoing and potential effects of this project should be considered in combination with the effects of other existing intake and discharge pipes located in the Southern California Bight. This needs to be provided and evaluated as part of a more comprehensive cumulative impact analysis. The survey scheduled for 2002 as part of the Southern California Bight Regional Marine Monitoring Survey (see page 5.5-15 of the AFC) may be an appropriate vehicle to carry out this recommendation.

Response No. 79: Tables 5.6-9 through 5.6-12 are provided in Attachment 2 of this Data Response package. Data provided in these tables indicate that the total numbers of fish impinged at the ESGS during 1997, 1998 and 1999 were insignificant. Most of the fish impinged at the ESGS were impinged during heat treatment and originated from populations living in the intake forebay. Therefore it is concluded that the ESGS does not provide a significant contribution to the cumulative impacts, if any, to the identified species of concern. Additional detail regarding the biological

consequences of cooling water supply at the ESGS can be found in Section 5.6.2.1.3 of the AFC.

The ESGS participated in pilot regional monitoring programs for the Southern California Bight in 1994 and 1998. The results of the pilot programs are being evaluated and will be used to design future pilot monitoring programs and to develop a comprehensive regional monitoring program for the Southern California Bight. Provision IV, Receiving Water Monitoring, of the Monitoring and Reporting Program associated with the NPDES Permit No. CA0001147, issued by the Los Angeles Regional Water Quality Control Board on June 29, 2000, provides for continued participation in the future regional monitoring programs for the Southern California Bight. The NPDES permit can be found in Appendix H-10 in Volume III of the AFC.

80. Additional information should also be provided that describes alternatives available to avoid or reduce entrainment or impingement impacts due to the ocean intake and discharge operations (e.g., dry cooling, combination wet/dry cooling, etc.).

Response No. 80: Alternatives to the once-through seawater cooling system for heat rejection at the ESPR Project include wet cooling towers and air-cooled condenser systems. These systems were evaluated and rejected for a number of reasons including space constraints at the ESGS, visual impacts, and reduced efficiency. In addition, the existing once-through seawater cooling system does not result in significant impingement or entrainment impacts. Additional information regarding the evaluation of these alternatives is presented in Section 4.7.5.2 of the AFC.

BACKGROUND

ADEQUACY OF BEST TECHNOLOGY AVAILABLE (BTA): The AFC describes the ocean intake and discharge system as being essentially unchanged since 1956 when a velocity cap was put on the intake. It also states that the determination of BTA for the facility was based on the above-referenced 316(b) study done in 1982 for the nearby Scattergood project. BTA for ocean intake and discharge systems has likely improved over the past twenty to fifty years, and in fact, other coastal power plants have upgraded their systems to reflect newer technologies and findings about the effects of ocean intakes and discharges on marine resources.

DATA REQUEST

81. Additional information should be provided showing whether more recent and appropriate BTA has been developed during the past twenty to fifty years and whether this BTA is applicable to the ESGS facility. The applicant should then describe whether the existing intake and discharge are using BTA or if modifications to the existing structures are proposed to attain BTA.

Response No. 81: **Cooling System Intake**. Impingement consists of holding marine resources by pressure differential across screen grids that protect the cooling water system from entraining marine resources. The El Segundo Generating Station (ESGS) currently utilizes a velocity cap intake system to reduce entrainment. Ongoing compliance monitoring demonstrates that the velocity cap is very effective in preventing entrainment resulting in impingement at the ESGS. Impingement prior to installation of the velocity cap was 272.2 tons of fish per year at Units 1 and 2. This was reduced to 14.95 tons immediately after installation of the velocity cap in the mid-1950s.

Impingement monitoring at Units 1 and 2 during 1999 indicates that 0.045 tons (about 90.2 pounds) of fish were impinged. Most of the fish were impinged during heat treatment and originated from populations living in the intake forebay. Details regarding the biological consequences of cooling water supply at the ESGS can be found in Section 5.6.2.1.3 of the AFC.

The velocity cap intake system used at the ESGS would be considered for implementation today on a coastal once-through power generation facility. Alternatives to the velocity cap include the Gunderboom Marine Life Exclusion System (MLES™). The MLES is an engineered system of screens that encloses an intake structure on a once-through facility. Since the screen area is large, water velocities across the screen are small, and the pressure difference that would induce impingement of marine life is small. However, the feasibility of applying this technology on a project of this magnitude in a coastal intake is improbable.

Previous installations of the MLES have been for flow rates that are significantly less than for the ESGS once-through cooling system. The intake is located away from the shoreline and underground tunnels feed water from the ocean. Installation of the MLES is typically along a shoreline or river bank directly surrounding an intake structure. The placement of the ESGS intake away from the shoreline makes the installation of the MLES logistically difficult, if not impossible.

Another technology to reduce impingement is the wedgewire screen. The wedgewire screen operates in a manner similar to the velocity cap, but differs from the velocity cap in that the velocities across the screen are much more uniform than a conventional passive screen. The uniform velocities across the screen would serve to limit the impingement of marine resources when compared to the velocity cap.

Wedgewire screens are not designed for flow rates as high as required for the ESGS once-through cooling system. For a proper installation, multiple screens would need to be installed at the ocean water intake. The use of wedgewire screens would also require a means for clearing the screens to maintain an acceptable intake velocity. This is generally accomplished with an air purge, which essentially dislodges any marine growth and debris that accumulates on the wedgewire screens by backflowing air through the screens. Maintenance of an air purge system would be impossible given the location of the intake in the ocean. Therefore this technology is not feasible for this application.

ESGS's use of a velocity cap can be expected to perform well when compared to the MLES and wedgewire screens. Marine resource impingement at the El Segundo site is currently extremely low, and the incorporation of the MLES or wedgewire screens into the cooling water intake system would not be expected to reduce the impingement rate from its current rate. In addition, installation would require disruption of the ocean floor and modification to the existing discharge line.

Impingement results during normal operations are so low and infrequent, that a statistical analysis to compare differences of alternative technology would be based on a data set with a mean impingement number for most species ranging from 0 to <1, and very high variance. As a result, it would be very unlikely that any type of analysis, such as a Student "T" test or ANOVA would result in a significant difference between technologies that provided additional benefits. Furthermore, when mean numbers of individuals per species impinged is generally less then 1, and in most cases 0, any incremental improvement would not justify the costs or disruptions to the ocean floor or modification of the existing discharge line associated with the installation of the new technology.

To further address fish impingement, the ESPR Project proposes to initiate a pilot project to investigate the feasibility for a fish removal method prior to heat treatment. This pilot project is described under

Applicant's proposed Mitigation Measure BIO-11, in Section 5.6.4 of the AFC. The method to be evaluated in this pilot project will be the deployment of a modified beach seine net in an attempt to scoop fish out of the forebay and return them to the ocean. Evaluation of the success of this program will be based on comparisons from present and historical fish and invertebrate impingement data during heat treatments. If a significant decrease in impingement can be quantified, the method and technique will be incorporated in the appropriate heat treatment protocols.

Cooling System Discharge. The discharge structure at the El Segundo Generating Station is a point discharge structure. Heated cooling water exits the discharge piping from the ESGS over 2000 feet from the plant intake structure. The only possible alternative to the current point discharge would be the use of a multiple port diffuser for discharge of heated cooling water. The current point discharge at the El Segundo Generating Station can still be considered BTA, as the system would still be considered for new once-through circulating water systems.

The multiple port diffuser discharge consists of a multiple discharge ports spaced out along the length of the discharge tunnel, with a fraction of the total flow exiting the system through each of the ports. The cumulative flow rate and heat duty input into the ocean would not change from the existing single point discharge.

Installation of the multiple port diffuser for discharge would require significant capital expenditures and would require a significant amount disruption to the ocean floor and modification to the existing discharge line. The multiple port discharge diffuser will also place exactly the same flow rate and heat duty into the ocean as the existing single point discharge. Installation of a multiple port discharge diffuser would not improve the temperature differential between the heated discharge water and the surrounding water. The current discharge temperature differential would remain at approximately 20°F with either discharge. Total heat input into the ocean would also not vary using a multiple port discharge diffuser. The single port discharge is presently considered, and will continue to be considered, the BTA for the El Segundo Generating Station and ESPR Project.

BACKGROUND

EFFECTS OF THERMAL DISCHARGES: The application shows that thermal discharges from current facility operations are resulting in mortality of marine species, and that these impacts will continue under the proposed facility upgrade. The basis for much of the AFC's discussion on thermal impacts is from a 1975 study, which is described as including sampling from only two dates, February 7 and 8, 1973.

Our concern is similar to that mentioned above, in that this study may not reflect the current understanding of thermal impacts on marine resources. The information contained in the AFC does not provide an adequate basis to determine the full effect of thermal discharges from current and proposed operations.

APPLICANT'S CLARIFICATION OF BACKGROUND

The only heat-related mortality at the ESGS is associated with heat treatment. Only fish and invertebrates residing in the intake forebay are killed in this operation. During normal operations, thermal discharges are approximately 20° F greater than intake temperatures at the initial point of discharge. The initial point of discharge is the outfall riser located approximately 10 feet above the ocean floor and 20 feet below the ocean surface. Due to the entrainment of large amounts of surrounding water during the discharge, the temperature is reduced to approximately 4° F above ambient at the surface.

The thermal discharges from the current operations and the effect to the marine environment are monitored twice a year as required by the NPDES permit. Protocols and equipment used represent the most up to date and current technologies for monitoring. NPDES Receiving Water Monitoring Reports for ESGS and Scattergood Generating Station for the years 1999, 1998, and 1997 are provided in the AFC Volume III, Appendix H, Attachments H-1, H-2, and H-3, respectively. These reports demonstrate that no effect to the marine environment has resulted from the operations at ESGS. ESPR Project impacts are discussed in section 5.6.2.1.4 of the AFC. This analysis uses both current and historical data.

DATA REQUEST

82. Additional information should be developed through new studies that more fully reflect changes to sampling methodology, ecosystem understanding, and other scientific developments over the past several decades. The CEC should incorporate this new information into its review of the current proposed project, or if the current proposal is approved, CEC approval should include a re-opener that would allow full consideration of new findings. Also as mentioned above, the survey scheduled for 2002 as part of the Southern California Bight Regional Marine Monitoring Survey (see page 5.5-15 of the AFC) may be an appropriate vehicle to carry out this recommendation.

Response No. 82: The Los Angeles Regional Water Quality Control Board issued Waste Discharge Requirements (NPDES Permit No. CA0001147) on June 30, 2000. The Receiving Water Monitoring Requirements of the NPDES permit provides for participation of the ESGS in future regional monitoring programs in the Southern California Bight. A copy of this permit is provided as Attachment H-10 in Volume III of the AFC.

BACKGROUND

EFFECTS OF HEAT TREATMENT ON MARINE RESOURCES: The application states that impingement rates are related to heat treatments done to clear the intake structure of marine organisms. The AFC describes both current and proposed operations as resulting in impacts to numerous species of marine organisms.

DATA REQUEST

83. The applicant should provide more information on alternatives to heat treatment for clearing the ocean intake structure. Additional analysis should be provided on whether these various alternatives are applicable and feasible to both current and proposed ESGS operations.

Response No. 83: The heat treat process is considered to be the BTA to keep the cooling water system free from fouling. The heat treat process is used to remove fouling organisms from the El Segundo Generating Station (ESGS) cooling water system. The heat treat process consists of recycling heated cooling water from the steam surface condenser outlet back to the cooling water intake and sending it through the cooling water system again. This serves to heat the cooling water to a level that removes any biological growth that has accumulated on the cooling water system piping and the tube side of the steam surface condenser. The heat treat process currently is only performed once every six weeks to remove fouling organisms.

Chlorination is used in conjunction with heat treatment to remove biological growth from the condensers under a variance issued by the Los Angeles Regional Water Quality Control Board. This variance was approved by the State Water Resources Control Board and USEPA Region IX. A copy of the variance is included as Attachment H-16, in Volume III of the AFC. Chlorination is discussed in more detail in Section 5.5.1.1.3. One alternative to heat treatment is a more intense chlorination treatment. This alternative was not considered as it would not be consistent with the requirements of the variance.

Another alternative to the use of the heat treat process is the use of a condenser tube cleaning system (CTCS) in conjunction with a debris filtering system to remove bio-fouling organisms. The CTCS in conjunction with the debris filtering system would serve to keep the steam surface condenser un-fouled but would not provide any means of keeping the cooling water pipes upstream and downstream of the condenser from becoming fouled. The CTCS operates by injecting sponge-rubber balls into the cooling water piping immediately upstream of the steam surface condenser. The sponge-rubber balls are slightly larger diameter than the internal diameter of the condenser tubes and act to scour any bio-growth from the condenser tube walls. Upon exiting the condenser, the balls would be collected by a strainer and recycled through the condenser. The debris filter would be located upstream of the CTCS ball injection to the condenser. It would serve to capture any debris and/or marine organisms that passed through the intake pre-screening systems. The debris filter would then backwash the captured debris and marine organisms to the discharge cooling water piping downstream of the CTCS ball collection strainers.

While the CTCS and debris filtering system would keep the condenser free of fouling organisms, they will not ensure that the cooling water piping upstream and downstream of the condenser remains free from bio-fouling. The CTCS will only maintain the cleanliness of the condenser and keep it free of fouling organisms.

As reflected in Table 83-1, the total numbers of the identified species of interest impinged during heat treatment at the ESGS during 1997, 1998 and 1999 were not significant. Most of the fish impinged at the ESGS were impinged during heat treatment and originated from populations living in the intake forebay. Therefore it is concluded that the ESGS does not provide a significant contribution to the cumulative impacts, if any, on the identified species of concern. Additional detail regarding the biological consequences of heat treatment of the cooling water system at the ESGS can be found in Section 5.6.2.1.3 of the AFC.

TABLE 83-1
NUMBER OF INDIVIDUALS OF SELECTED SPECIES IMPINGED DURING HEAT TREATMENT - 1997 – 1999

Species (Latin Name)	Unit 1 & 2 Heat	Unit 3 & 4 Heat	Commercial[1] (lbs) 1999	Sport[2] 1999
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Stereolepis gigas	0	1	0	0
Paralichthys californicus	0	7	1,327,233	9,285
Panulirus interruptus	14	61	489,254	N.A.
Sebastes paucispinus[3]	0	0	6,456,012	495,873

[1] 1999 State of California fresh water and commercial landings.
[2] 1999 Sport fishing take in the Southern California Bight. Numbers represent commercial passenger fishing fleet. Does not include individual recreational take.
[3] Includes all Rockfish.
N.A. Data not available.

BACKGROUND

EFFECTS ON FEDERAL OR STATE-LISTED SPECIES, AND SPECIES OF COMMERCIAL IMPORTANCE: We are also concerned with the probable impacts of proposed facility operations on federal- or state-listed endangered or threatened species and those species of commercial importance (e.g., rockfish). While the application provides some evaluation of effects on these species in the area of the facility, it does not fully evaluate the ongoing impacts of the facility. Impacts are described as not being significant when compared to the overall biomass of Santa Monica Bay, but that does not adequately convey the ongoing loss of hundreds to millions of individual organisms due to facility operations.

DATA REQUEST

84. Information should be provided regarding any effects of the current and proposed facility operations on federally-designated Essential Fish Habitat.

Response No. 84: There are no geographical ranges for any state or federally listed endangered or threatened marine fish or invertebrates within 15 miles of the project site. Additional detail regarding the biological consequences of cooling water supply can be found in Section 5.6.2.1.3 of the AFC.

85. Additional information should be provided that more fully describes the impacts of current and proposed ESGS operations on species of concern, along with the cumulative impacts of ESGS operations and other impacts occurring in Santa Monica Bay, such as those included as reasons for 303(d)-listing.

Response No. 85: There are no geographical ranges for any state or federally listed endangered or threatened marine fish or invertebrates within 15 miles of the project site. Therefore, it is unlikely that such species will be impinged in the future. Additional detail regarding the biological consequences of cooling water supply can be found in Section 5.6.2.1.3 of the AFC. The 303(d) listed pollutants resulting in impairments to Santa Monica Bay are related to other sources. These pollutants are listed in Table 5.5-5 of the AFC. The Los Angeles Regional Water Quality Control Board issued Waste Discharge Requirements (NPDES Permit No. CA0001147) for the ESGS on June 30, 2000. A copy of this NPDES Permit is provided as Attachment H-10 in Volume III of the AFC.

TECHNICAL AREA: CULTURAL RESOURCES
AUTHOR: JEANETTE A. MCKENNA AND DOROTHY TORRES

BACKGROUND

A discussion of the Kramer Staging Area on page J-24 discusses the proposed staging area that is covered with asphalt over slag and debris from the former H. Kramer Company foundry. The discussion in the site record also addresses the asphalt covered slag heap as part of the site. It appears from the discussion in both references that this portion of the H. Kramer Company foundry site is within the project APE.

DATA REQUEST

11. Please explain why this area was not included as part of the site in the map identifying the site record. Please correct the site record map or explain why it is correct.

Response No. 11: The asphalt covered area located to the northeast of the foundations of the H. Kramer Company foundry was not included as part of the site in the location map provided with the primary record (Form DPR 523) due to the absence of evidence indicating the presence of cultural resources in the immediate area. The area in question is a parking lot completely sealed by an asphalt surface. Anecdotal reports have suggested that waste material from the foundry, or "slag," is located beneath this asphalt surface. In the field, there was no evidence to indicate (or any way to determine) whether cultural materials did, in fact, exist beneath the asphalt The only area exhibiting archaeological (ruined structural) features is the area containing the remnants of the foundry's concrete foundations. Thus, while it is possible that components of, or materials associated with the H. Kramer Foundry may exist beneath the asphalt surface of the proposed equipment staging area, the area was not illustrated as part of the site due to a lack of evidence in the field. A new site map of the Kramer site is provided as Attachment 4.

12. It appears that the Kramer Staging Area will sit on an asphalt-covered portion of the former H. Kramer Company foundry. Please discuss potential impacts to the site as a result of staging area location.

Response No. 12: No impacts to cultural resources are anticipated for the proposed Kramer Staging Area. Although it is possible that components of, or materials associated with the H. Kramer Foundry may exist beneath

the asphalt surface of the proposed equipment staging area, any such materials would not be impacted by the project. The proposed use of this area for temporary storage, parking, and staging of equipment, is consistent with the area's current and ongoing use as a parking lot. Any cultural materials located beneath the asphalt-capped surface of the proposed staging area would not be affected by the proposed temporary, surficial use of this paved area.

Supplemental Response to Data Requests #11 and 12 - Kramer Staging Area

Introduction

Based on ongoing project engineering evaluations, the ESPR project may require the use of a larger surface area at the "Kramer Staging Area" than previously planned. The asphalt-covered area located to the northeast of the foundations of the H. Kramer Company foundry may not provide sufficient space for equipment storage and staging. Thus, it is possible that the concrete foundations of the H. Kramer Company foundry, as well as open areas to the northeast of the asphalt-capped area and to the northeast, east, and southeast of the foundations may be required for equipment storage and staging.

Ms. Dorothy Torres of the California Energy Commission (CEC) and Mr. Alex Wesson of URS Corporation inspected the remnants of the Kramer foundry on March 14, 2001. Strategies for addressing the Applicant's proposed use of the entire property as a temporary equipment storage and staging area were discussed. At the suggestion of Mr. James Reede, CEC Project Manager for the ESPR Project, it was decided that a supplemental data response would be prepared by URS Corporation to address potential use of the foundry foundations and other areas on the Kramer property. It was agreed that this supplemental data response could be attached to the responses to the cultural resources Data Requests (11 and 12) concerning the proposed Kramer Staging Area.

Archaeological Survey

The entire subject area has been surveyed for cultural resources. The area was subjected to a pedestrian survey and cultural resources inventory by archaeologist Dr. Bryon Bass of URS Corporation on November 29, 2000. Dr. Bass observed scattered modern trash and debris, but no historic artifacts were noted. The concrete foundry

foundations were recorded on Form DPR 523 (primary record). This primary record was included in AFC Volume II, Appendix J (Technical Report for archaeological resources), as Attachment C.

Historic Background

In addition to the recordation of the foundations, Ms. Meta Bunse of JRP Historical Consulting Services conducted historic background research on the foundry and the H. Kramer Company. This research and appropriate recommendations were included in AFC Appendix K as Appendix K(4) Historic Background on the Kramer Staging Area. The foundations were recommended as ineligible for listing on the National Register of Historic Places. This recommendation was based on the unremarkable history of the H. Kramer Company, as well as the foundry's lack of structural integrity. The text from Appendix K(4) regarding the H. Kramer Company foundry is presented below:

Kramer Site

H. Kramer and Company operated a foundry at this location; however, none of the foundry buildings or any of its related facilities remain. The only visible remains of the foundry are the large building foundation and the asphalt-capped slag heap. According to the caretaker of the property, the H. Kramer Company built and operated a foundry on this site beginning in 1951. This is consistent with USGS mapping for the area that shows the site as vacant in 1950. By the time of the next edition of the topographic map (1964) a large building had been erected on the parcel. The building was razed sometime after 1981 and prior to 1995. This time frame is based on the last edition of USGS mapping of the area (1981) and a 1995 "Initial Study" filed with the El Segundo Planning Department submitted as part of a plan to erect a hot mix asphalt plant on the parcel. [4] This study included the following statements:

> *"The site was last occupied by an idle foundry that has been dismantled and removed. What remains is the various concrete and asphalt building foundations and paving built on differing grade levels."*

[4] James D. Meyer, Omnibus Environmental Services, "Initial Study, Applicant Questionnaire," January 1, 1995, City of El Segundo Planning Department; US Geological Survey, "Venice, Calif.," *7.5-Minute Series (Topographic)* 1950, 1964, 1964 photorevised 1972, and 1964 photorevised 1981 (Washington, D.C.: USGS).

> *"The site is devoid of any cultural, historical, or scenic aspects …" and "there are no cultural, historical, or scenic aspects to the surrounding properties."*[5]

H. Kramer and Company is a brass and bronze refiner located in Chicago, Illinois, historically owned and operated by the Howard K. Chapman family. Mr. Chapman's grandfather founded the company and his father passed the legacy on to him. It is not clear if Howard K. Chapman Sr. or his father headed the company during the period that the firm operated the El Segundo plant. Mr. Chapman Sr. died on May 12, 1997 and his son, Howard K. Chapman, Jr., now serves as the Chief Executive Officer. There is no indication that the Chapmans, H. Kramer Company, or the El Segundo foundry were historically important within the context of the brass industry. Furthermore, there are no historic resources at the site that can be associated with these individuals or H. Kramer and Company. The Kramer site retains no historic integrity whatsoever, and does not appear to meet the criteria for listing on the National Register of Historic Places.[6]

Proposed Use

The Applicant's proposed use of the entire Kramer property as a temporary equipment storage and staging area would not require the modification or alteration of the ground surface, the asphalt-capped area, or the concrete foundations. The proposed use of the area involves the unloading of equipment and materials off trucks and rail cars on the railroad siding (located to the southeast of the property) and the temporary storage of such items. It is possible but unlikely that the concrete foundry foundations will be used; rather the open areas to the northeast, east, and southeast of the foundations may provide more suitable conditions. Equipment and materials will be placed atop wooden and/or concrete "timbers" for the purposes of keeping such items above any moisture on the ground and for ease of transporting the items with a forklift. The use of these "timbers" will also serve to ensure that no heavy equipment or materials will be stacked directly atop the foundations, should they be used.

[5] "Initial Study, Applicant Questionnaire," January 1, 1995, City of El Segundo Planning Department.
[6] "Howard K. Chapman," *Pennsylvania Gazette: University of Pennsylvania Alumni Magazine* (March 1998), www.upenn.edu/gazette; *Pacific Coast Industrial Directory* (Los Angeles: Bender Publications, 1973).

Conclusion

The proposed Kramer Staging Area has been surveyed for cultural resources. No historic artifacts were observed in association with the 1951 concrete foundations. The concrete foundations of the H. Kramer Company foundry have been recorded on a Primary Record (Form DPR 523). Based on historic background research on the H. Kramer Company, and on the lack of structural integrity at the foundry site, the foundations have been recommended by a project architectural historian as ineligible for listing in the National Register of Historic Places. The proposed use of the property will be limited to the temporary storage and staging of equipment and materials, and will in no way require the alteration or modification of the existing ground surface, asphalt-capped area, or concrete foundations. No impacts to cultural resources are anticipated for the proposed Kramer Staging Area.

BACKGROUND

The AFC identifies responses from several Native Americans who expressed concern about a potential for sites in the project area.

DATA REQUEST

13. Have there been any additional responses to the information letters sent to Native Americans by the applicant? Please provide copies of any responses that were sent in writing and summaries of responses that were by telephone.

Response No. 13: No additional responses or comments from Native American contacts regarding the ESPR Project have been received subsequent to the docketing of the AFC and Confidential Appendix J.

BACKGROUND

Appendix K, page 2 and several other sections of the AFC discuss the area of proposed alternate waterlines.

DATA REQUEST

14. Has there been a decision concerning the proposed alternate water line route? If an alternate route has been selected, please describe it and identify the route on a map at a scale comparable to Figure 3.2-2 in the AFC.

Response No. 14: At this time, a specific water line route has not been selected within the "zone of waterline alternatives." Based on the March 14 2001 workshop, the Applicant understands that the City of El Segundo staff will review the line route and indicate to CEC whether or not the City has a preference for one or more particular routes within the zone of waterline alternatives. The Applicant is prepared to work with the City on this issue, and to address other issues related to this Public Works project.

BACKGROUND

Appendix K provides a list of properties in the vicinity of the proposed and alternate water line route.

DATA REQUEST

15. Please provide site records (Form DPR 523) for all properties judged to be of either medium or high potential for eligibility to the national register.

Response No. 15: An evaluation of Historic Resources within the Proposed Project Area is in progress. Following is a summary of the report, "Sensitivity Analysis of Water Lines Associated with the El Segundo Generating Station Project, El Segundo, Los Angeles County, California," being prepared by JRP Historical Consulting services.

A survey of the proposed project area in El Segundo resulted in the evaluation of 40 historic properties (a property is defined here as a legal assessor's parcel, and may include more than one structure). The evaluations identified an historic district along Richmond Street, described below as Table 1, and then various other commercial and residential properties, described in Table 2. The City of El Segundo has also recognized this area as the "Richmond Street District" in their "El Segundo Downtown Specific Plan," which was approved on

August 1, 2000[7]. This plan defines the Richmond Street District as "… the historic original Downtown," and further states that "standards for the district are intended to maintain, enhance, and preserve the historical "Old Town" character of the area, and Historic Design Standards are also established to ensure this goal[8]. This description is also consistent with the definitions of a historic district according to the National Register of Historic Places, as well as the California Register of Historical Resources. Both of these programs recognize that a group, or concentration, of resources (in this case commercial buildings) that is linked historically or aesthetically should be considered as whole. For this reason, the 100 and 200 blocks of Richmond Street are being evaluated as a potential historic district.

It is important to note that no matter whether the buildings from 100 through 200 Richmond Street are called a "District," or an "Historic District," neither definition intends to include the streets themselves. The elements of value in the district are the buildings themselves, not the streets. *Assuming that the proposed water lines will be installed in city street rights of way*, this project would not affect the historic buildings on Richmond Street (under Federal rules this would be a finding of "no effect"; under state rules it would be a finding of "no substantial adverse change.") This is also true for resources that may be found to be eligible for the National Register elsewhere in the proposed project area. As long as the project does not involve the parcel of a potentially eligible resource, it does not have an effect on that resource.

Tables 1 and 2 can be summarized as follows:

Total properties evaluated: 40

Total properties eligible:	18 (16 as part of Richmond Street Historic District, 2 eligible separately)
Total properties not eligible:	22

A complete report, including site records (Form DPR 523) for all properties judged to be of either medium or high potential for eligibility to the national register, will be provided in the final report. This report is in progress and will be provided by April 18, 2001.

[7] City of El Segundo, "El Segundo Downtown Specific Plan," Approved by City Council Ordinance No. 1319, adopted August 1, 2000, www.scag.org/homepages/el_segundo/.
[8] "El Segundo Downtown Specific Plan," part VI, section C, Richmond Street District.

TABLE 15-1
RICHMOND STREET DISTRICT

Address		APN	Year Built	NRHP Status[9]
115-117	Richmond Street	4136-027-011	1925, 1922	3D
121	Richmond Street	4136-027-026	1956	6Z (Non-Contributing)
123-129	Richmond Street	4136-027-014	1921e	3D
131	Richmond Street	4136-027-015	1920	3D
135	Richmond Street	4136-027-017	1983	6Z (Non-Contributing)
139	Richmond Street	4136-027-018	1922	3D
140-142	Richmond Street	4136-026-002	1920, n.d.	3D
143	Richmond Street	4136-027-019	1922	3D
145	Richmond Street	4136-027-020	1928	3D
144-146	Richmond Street	4136-026-001	1924	3D
147	Richmond Street	4136-027-021	1923	6Z (Non-Contributing)
203	Richmond Street	4136-024-017	1923	3D
211-213	Richmond Street	4136-024-010	1923	3D
215	Richmond Street	4136-024-011	1925	6Z (Non-Contributing)
216-220	Richmond Street	4136-025-004	1942, 1915, 1919	3D
221	Richmond Street	4136-024-012	1926	3D
222	Richmond Street	4136-025-003	1947	3D
223	Richmond Street	4136-024-013	1922	3D
225	Richmond Street	4136-024-014	1922	3D
209	Richmond Street	4136-024-008	1918	3D
Number of Properties: 20			**Not Eligible for District: 4**	
			Eligible for District: 16	

[9] NRHP Status Codes as defined by California Office of Historic Preservation (OHP). Code 3D is a "contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing." Code 3S is a property that "appears eligible for separate listing." Code 6Z is a property that has been found ineligible for listing in the National Register by a process other than a determination by OHP or the Keeper of the National Register (in this case an evaluation by historians who meet the Secretary of the Interior's standards).

TABLE 15-2
OTHER ADDRESSES EVALUATED

Address		APN	Year Built	NRHP Status[9]
135-139	Concord Street	4136-028-024	1926, 1957	6Z
147	Concord Street	4136-028-021	1919	6Z
210	Concord Street	4136-024-006	1911	6Z
221	Concord Street	4136-023-013	1923	3S
224, 226A-B	Concord Street	4136-024-002	1916, 1918	3S
216	Franklin Street	4136-027-002	1920	6Z
527	Franklin Street	4136-021-007	1926	6Z
420-424 1/2	Franklin Street	4136-029-001	1948, 1952, 1953	6Z
301-307	Main Street	4136-016-020	1926e	6Z
205	Loma Vista Street	4131-012-007	1923, 1962	6Z
213	Loma Vista Street	4131-012-005	1930, 1935	6Z
215-217	Loma Vista Street	4131-012-004	1920, 1924, n.d.	6Z
219	Virginia Street	4136-022-014	1953-1954	6Z
223	Virginia Street	4136-022-015	1952-1953	6Z
225	Virginia Street	4136-022-016	1951	6Z
201-217	W. Grand Avenue	4136-017-043	1920, 1926	6Z
202	Whiting Street	4136-022-008	1913	6Z
210	Whiting Street	4136-022-006	1939	6Z
225	Whiting Street	4136-021-016	1921	6Z
229	Whiting Street	4136-021-017	1914, 1919, 1927	6Z
Number of Properties: 20			**Eligible: 2**	
			Not Eligible: 18	

BACKGROUND

Appendix K identifies several areas that might be used for laydown or parking that do not appear to be under consideration in the cultural confidential appendix and other parts of the AFC.

DATA REQUEST

16. Please list all areas that may be used as parking and/or construction staging areas.

Response No. 16: Please refer to the Introduction to Appendix K, which contains the following notation: "Please note that K(2) contains references to project

components which have been subsequently dropped from the ESPR Project. These are: LAX Sandpiper Staging Area, Marina Del Rey Library Parking Area, and Playa Del Rey/62nd Street Parking Area." The LAX Imperial Staging Areas was also dropped subsequent to the production of Appendix K.

The areas that may be used as parking and/or construction staging areas are:

- Area 1 – Kramer Staging Area
- Area 2 – Federal Express Staging/Parking Area
- Area 3 – LAX Pershing Staging/Parking Area
- Area 4 – Marina Del Rey Boat Launch Parking Area
- Area 5 – Dockweiler State Beach Parking Area
- Area 6 – Hyperion Parking Area
- Area 7 – Grand Avenue Parking Area
- Area 8 – Chevron Marine Terminal Staging Area.

BACKGROUND

Staff needs to identify all areas of potential ground disturbance.

DATA REQUEST

17. Please describe the locations of any access roads or additional ground disturbance and add these locations to Figure J-2 provided in the confidential cultural appendix.

Response No. 17: No access roads or additional ground disturbance have been added to the project subsequent to the docketing of the AFC and Appendix J.

BACKGROUND

Page 3.7-1 of the AFC indicates that the reclaimed water line and the potable water line will be enclosed in the same trench.

DATA REQUEST

18. What is the anticipated depth and width of the trench in feet?

Response No. 18: The trench dimensions will determined by the City of El Segundo Department of Public Works once the precise route has been determined and approved, as discussed in response to Data Request 14, above.

TECHNICAL AREA: CUMULATIVE IMPACTS
AUTHOR: CITY OF EL SEGUNDO

77. In the Cumulative Impacts Section of the AFC, the list of cumulative projects in El Segundo should be revised to include additional projects (i.e., LAX Master Plan) that would be completed after the year 2002, since it seem likely that the proposed project would be not be approved by the California Energy Commission until late 2001 with a 20 month construction period (page 5.20-3). The plant would not be operational until 2003 or 2004. Attached is the current El Segundo approved project list.

Response No. 77: Refer to Section 5.21.2.1, Los Angeles Airport Master Plan EIR/EIS within the AFC for a discussion of the LAX Master Plan Project. The AFC states:

"The Master Plan for LAX proposes to change runways, passenger terminals, roadways, cargo and other facilities. A Draft Environmental Impact Statement/Environmental Impact Report (DEIS/EIR) is being prepared for the Master Plan Project and is a joint effort between the Federal Aviation Administration and the City of Los Angeles. The project would also include the following transportation improvement projects in the vicinity of the airport:

- State Route 1: realignment of SR 1, north of LAX between Sepulveda Boulevard and Lincoln Boulevard

- LAX Expressway: construction of an expressway along side of I-405.

Construction of the project would be phased (depending on the approved build alternative) and would begin immediately upon approval of the project and conclude in 2015. The Master Plan EIR/EIS is currently being prepared and is anticipated to be released for public review within the next 6 months. If the LAX project is approved by the end of 2001, construction could begin by early 2002 and could potentially overlap with the ESPR project; however, given the magnitude and controversial nature of the LAX project, the schedule for completion of the EIR/EIS, and subsequent construction activities is considered speculative. Thus, there are no reasonably foreseeable cumulative impacts associated with this project."

At the time of preparation of the AFC, the most recent "Major Approved and Active Projects (Short Build-Out List – Completion by

September 2002)" dated September 26, 2000 provided by the City of El Segundo was used in the preparation of the Cumulative Impact Section. Table 5.20-1 has been revised to include the following projects presented in the "Major Approved & Active Projects – December 2000" list provided by the City of El Segundo. This revised table is included as Attachment 6.

- **EA# 102, 951 – 1961 El Segundo Boulevard, Xerox Phase IV**

The project consists of the development of a 255,242 square feet (350 Room) office hotel. A development agreement exists for the project and expires in March 1, 2003. A construction schedule is not yet available. Since there are no construction schedules or plans to consider for a cumulative impact analysis, it is not feasible to assess the cumulative significance of the project with the construction or operation of the proposed plant. Even if the construction schedules of the two projects were to overlap, impacts would not be considered significant due to the geographical locations of the two projects.

- **EA#32312, 445 and 475 Continental Mallel**

The project consists of the development of 300,00 square feet research and development building. A development agreement exists for the project and expires September 7, 2001. A construction schedule is not yet available. Since there are no construction schedules or plans to consider for a cumulative impact analysis, it is not feasible to assess the cumulative significance of the project with the construction or operation of the proposed plant. Even if the construction schedules of the two projects were to overlap, impacts would not be considered significant due to the geographical locations of the two projects.

- **EA# 286 439 480, 1415 E. Grand Avenue**

The project consists of the development of a 28 unit-townhome complex. The subdivision expires May 4, 2001. A construction schedule is not yet available. Since there are no construction schedules or plans to consider for a cumulative impact analysis, it is not feasible to assess the cumulative significance of the project with the construction or operation of the proposed plant.

- **EA # 537 700 N. Nash, 800 N. Nash, El Segundo Media Center**

The project consists of the development of a 630,000 square foot Office; 220,000 square foot Hotel/Retail; 377,000 square foot Technology Campus; and 273,000 square foot Media Campus. Currently an EIR is required and is pending approval from the City. A construction schedule is not yet available. Since there are no construction schedules or plans to consider for a cumulative impact analysis, it is not feasible to assess the cumulative significance of the project with the construction or operation of the proposed plant. Even if the construction schedules of the two projects were to overlap, impacts would not be considered significant due to the geographical locations of the two projects.

- **EA # 427 470 Northwest Corner of Aviation and Rosecrans**

The project consists of the development of a 350-unit mini-storage facility. Currently the project is under construction and is expected to be completed before the construction of the ESPR Project. No cumulative impacts are anticipated.

- **EA # 522 2260 E. El Segundo Boulevard**

The project consists of the development of a 98,000 square foot Data Center. Currently the project is under construction and is expected to be completed before the construction of the ESPR Project. No cumulative impacts are anticipated.

- **EA # 535 888 N. Sepulveda**

The project consists of the development of a 120,610 square foot Office or Hotel and Airport Parking. Currently the project is pending approval from the City. A construction schedule is not yet available. Since there are no construction schedules or plans to consider for a cumulative impact analysis, it is not feasible to assess the cumulative significance of the project with the construction or operation of the proposed plant. Even if the construction schedules of the two projects were to overlap, impacts would not be considered significant due to the geographical locations of the two projects.

TECHNICAL AREA: EFFICIENCY
AUTHOR: STEVE BAKER

BACKGROUND

Section 5.19.7 of the AFC addresses off-design efficiency of the power plant, and refers to Figure 5.19-1.

DATA REQUEST

19. Figure 5.19-1 was missing from the AFC. Please provide it.

Response No. 19: Figure 5.19-1 is included in the AFC as Figure 3.4-1, and is provided in this Response to Data Adequacy document as Attachment 7.

TECHNICAL AREA: FACILITY DESCRIPTION
AUTHOR: CITY OF EL SEGUNDO

35. It is not clear from the project description if units 1 and 2 are currently operating or their operational load used in the AFC analysis.

Response No. 35: Units 1 and 2 are currently running. Operational load used in the analysis is 175 MW gross (not base loaded). A maximum load of 175 MW each is used in the analysis.

36. It is not clear if a portion of the net station capacity increase of 280 megawatts is attributable to existing units 3 and 4, given the statements in the air quality analysis which seem to indicate emissions would also increase for units 3 and 4. How much of an increase in generating capacity for the station would be attributed to the replacement of units 1 and 2 versus any increase use of units 3 and 4?

Response No. 36: All increase is attributable to replacement of Units 1 and 2.

37. Provide information about the relationship of the planned aqueous ammonia pipeline and a proposed Chevron project to renovate storage tanks for aqueous ammonia at the same location.

Response No. 37: There is no relationship between these projects.

38. The AFC should include a full analysis of the impacts of demolition of the Southern California Edison (SCE) oil storage tanks, since the demolition of the tanks appears to be an integral part of the project to make that area available a laydown/staging area.

Response No. 38: The Applicant is in the process of acquiring the oil storage tank property from SCE. Demolition of the tanks will take place regardless of the outcome of the AFC process. Demolition of the tanks will be subject to the CEQA requirements, as administered by the City of El Segundo as lead agency. A full analysis of the impacts of demolition will occur as a part of the tank farm demolition CEQA process prior to the tank farm project approval.

39. The AFC should provide details of the planned use of the SCE tank area after utilization as a laydown/staging area. For instance, the applicant has previously informed the City of El Segundo that there are plans to construct an office building on the site.

Response No. 39: The Applicant has no current plans for use of the site after utilization of the site as a laydown/staging area. The administration building referred to is proposed to be located immediately north of the tank farm, as shown in Figure 3.5-1B, provided as Attachment 13 to this response package.

42. The floor area of the proposed maintenance and administrative buildings does not appear to be indicated in the AFC (page 3.9-1).

Response No. 42: The total floor area of the proposed maintenance and administration building is 15,000 square feet.

43. The AFC should include an analysis of alternative design to reduce the exhaust stack height so they would not be taller than the existing exhaust stacks.

Response No. 43: The stack has been designed to ensure that the project will comply with all applicable air quality requirements. In particular, the stack height analysis is driven by a regulation established by the South Coast Air Quality Management District.

44. The AFC should include additional discussion about the extent of construction impacts related to the construction of the two proposed water pipelines in the City of El Segundo.

Response No. 44: As discussed in response to Data Request 18, at such time as the specific pipeline route is selected and approved, the pipeline installation will be subject to the normal permitting requirements, as administered by the City of El Segundo and in coordination with West Basin Municipal Water District. Standardized mitigation measures will be employed during pipeline construction.

46. Provide information about alternative ammonia sources if Chevron does not supply the ammonia from the adjacent refinery. The city's understanding is that Chevron has received a business plan for this service but has not formally committed to it yet. Without such a commitment, alternative sources must be analyzed.

Response No. 46: Ammonia deliveries are currently made by truck. The normal truck route is as follows: Either 60 or 10 freeway to the 605 freeway south to the 105 freeway west. Exit on Imperial Highway west to Vista Del Mar and south to the plant.

47. The AFC should discuss the method for demolition of the existing exhaust stack in terms of safety.

Response No. 47: The demolition contractor, when selected, will be required to incorporate appropriate safety precautions to protect users of the beach and bike path, as well as workers in the plant, from demolition activities. A site-specific safety plan will be developed for all elements of the project, including demolition of the stacks. This plan will be provided for review and approval by the appropriate agencies prior to initiating the work.

58. The AFC should include more definitive locations for off-site parking and not defer analysis to post-construction plan submittal.

Response No. 58: Locations of offsite parking are identified on Figure 3.2-1. At this time, it is not known whether all of the sites, or some combination of sites, will be used for off-site parking. Analyses provided throughout the AFC consider the potential use of all sites for parking.

59. The AFC should provide a discussion of the status of commitments from property owner for providing off-site parking and staging areas, so the viability of these proposals can be determined.

Response No. 59: The Applicant continues to have discussions or negotiations with the owners of these areas as necessary to gain the control necessary for the proposed use.

60. The AFC should identify the location of the rail unloading facility discussed on page 3.9-14.

Response No. 60: The proposed rail unloading facility is located on the H. Kramer and Company (Kramer) property, as shown in Figure 3.2-1 (referred to as site 1 in the legend). This property is located in the City of El Segundo and is bounded by Douglas Street to the east, Sepulveda Boulevard to the west, Rosecrans Street to the south, and El Segundo Boulevard to the north. Access to this site is via Chapman Way off of Douglas Street.

Note to the Reader: Response to Data Requests 88 is provided below. This Data Request originated from the City of Manhattan Beach, and addresses facility description issues.

88. Please provide a detailed map showing the new water supply line route as described in Section 3.8.1.5.

Response No. 88: Section 3.8.1, item 5, is revised to state: *"Install new water supply line(s) from the City of El Segundo to provide firewater/service water to Units 3 and 4; and, install new sanitary discharge line from the City of Manhattan Beach."*

A new water line route is proposed within the City of El Segundo, as shown on Figure 3.2-1 (referred to as R1 in the legend). Two water lines will be constructed in a common trench starting at the intersection of El Segundo Boulevard and Eucalyptus Drive, then west to Richmond Street, north on Richmond (or other nearby street within the designated zone of alternative pipeline routes) to Grand Avenue, then west to Vista del Mar, then south to the generating station property.

As described in Section 3.7.4, a sanitary discharge line is proposed to be constructed in the City of Manhattan Beach. The line route is shown on Figure 3.2-1 (referred to as R2 in the legend). Connection to the City of Manhattan Beach sewer will require routing of approximately 150 feet of forced flow sewer line from the site to an existing manhole at the intersection of The Strand and 45th Street. The pipeline will be constructed of 3-inch diameter PVC pipe and buried under a minimum of 24 inches of compacted soil.

TECHNICAL AREA: GEOLOGY AND PALEONTOLOGY
AUTHOR: ROBERT ANDERSON

BACKGROUND

The project area is in the region that was affected by strong ground shaking from the March 10, 1933 Long Beach earthquake. Areas of liquefied soils were reported in the region after the earthquake. Page G-9 of the AFC indicates that the site area is not known to have experienced liquefaction during historic earthquakes. However, no information regarding liquefaction reported in the region after the Long Beach earthquake is mentioned.

DATA REQUEST

20. Please identify if liquefaction was reported along the existing and proposed linear facilities and the project site after the 1933 Long Beach earthquake.

Response No. 20: In CDMG Special Report 114 "A Review of the Geology and Earthquake History of the Newport-Inglewood Structural Zone, Southern California", 1974, Barrows summarizes the characteristics of the Long Beach Earthquake including a section on surface effects. He does not describe any liquefaction related occurrences near the El Segundo area. Evidence of liquefaction (and/or possible settlement) is described for the Seal Beach, Huntington Beach and Huntington Harbor areas, Compton, and Long Beach. This includes numerous areas along the coast highway where it was been constructed over an old tidal slough or estuary. Additional discussions regarding liquefaction events in the Los Angeles area are presented in Ziony and others (1985) including liquefaction events following the 1857 Fort Tejon earthquake, the 1973 Point Mugu earthquake, and the 1971 San Fernando earthquake. None of these events triggered liquefaction in the El Segundo area.

BACKGROUND

The Southern California Earthquake Center (SCEC) recently released a report entitled "Accounting for Site Effects in Probabilistic Seismic Hazards Analyses of Southern California" (The SCEC Phase III Report) which is published in the *Bulletin of the Seismological Society of America*, volume 90, No. 6B, (December 2000).

DATA REQUEST

21. Please indicate if the material presented in the SCEC Phase III report will have an effect on the estimated strong ground motion determined for the project and the linear facilities.

Response No. 21: The SCEC Phase III report is a recent compilation of research data and numerical modeling results that indicate the relative importance of proper characterization of site subsurface conditions within and near the Los Angeles basin. The report is sufficiently detailed in the realm of applied geophysics with respect to basin effects but does not necessarily provide a clear set of guidelines for direct implementation of its use.

Nevertheless, based on the research presented therein (Wills, et. al.), it is strongly suggested that the average shear-wave velocity to a depth of 30m (V_s^{30}) is a good indicator of potential site ground motion response as facilitated by the 1997 Uniform Building Code (UBC) Soil Profile Type methodology. In this respect, the authors have prepared a near-surface shear wave velocity map of the Los Angeles basin that places the El Segundo project site in an area that may be categorized as either D or CD. These generally correspond to UBC Soil Profile Types of S_d to bordeline S_c/S_d, respectively. Likewise, the authors suggest that sites underlain primarily by dune sand deposits be placed in category D.

Our original assumption of a UBC Soil Profile Type of S_d appears to be a solid and justifiable assumption. It is not likely that the results of pending field explorations and laboratory testing will suggest that the site should be assumed stiffer than S_d conditions.

In summary, it is felt that the seismic design provisions of the 1997 UBC assuming a Soil Profile Type of S_d will be suitable for project design.

22. If the material presented in the SCEC Phase III Report causes the ground motion to change, please provide a brief explanation how the material from the SCEC Phase III Report affected the initial strong ground motion determination.

Response No. 22: Please see response to Data Request No. 21 (above).

BACKGROUND

Pages G-10 and G-11 of the AFC indicates that artificial fill will replace the upper five to twenty feet of soil at the project site.

DATA REQUEST

23. Please highlight the cut and fill areas on the grading and drainage plans. If the excavation is to extend below the ground water table, please indicate how excavation and fill placement below the ground water table would be accomplished.

Response No. 23: Final site grades for the project will be very near those that already exist at the site. No new significant cut or fills are planned for the project. Hence, final site grades will be on the order of elevation +19 to +20 feet MSL with paved surface inclinations of about 1 percent. Drainage collection and discharge will be provided using appropriate Best Management Practices (BMPs).

The project design team is currently working on demolition and site preparation plans that will take into account the need for site excavation, groundwater dewatering, earthwork, ground improvement (if needed), and planned construction. The means and methods of these activities will be provided therein. However, in general, the shallow groundwater will be lowered to an appropriate level using a series of deep wells surrounding the excavation perimeter. Handling of the extracted groundwater will be performed in strict accordance with regional permit requirements. Fill soils will be properly placed and compacted in the excavation prior to shutting off of the dewatering system wells.

The El Segundo Power Redevelopment Project (ESPR) involves the construction of new combined cycle facilities within the limits of the existing Units 1 and 2 at El Segundo Generating Station (ESGS). Existing foundations and piping within the limits of these two units will need to be demolished to make room for the new foundations for the proposed structures of the new plant along with new circulating water piping.

Finish grade elevation for ESPR is Elevation 20.0 feet (MLLW), the same as for the existing plant site. It is anticipated that all existing foundations and circulating water pipe within the footprint of the proposed power block, which are above Elevation 10.0 feet (MLLW),

will be removed by the demolition contractor. To make this possible, an open excavation with slopes at 1.5H:1V is anticipated around the footprint of the proposed new power block, as shown in Attachment 8 to this Data Response package. Groundwater control is not expected to be required for this excavation, because groundwater at the site is at Elevation 8.0 feet (MLLW).

Once all existing foundations and circulating water piping above Elevation 10.0 feet (MLLW) have been removed from within the power block area, the demolition contractor will remove existing foundations below Elevation 10.0 feet (MLLW) within the limits of the new major equipment foundations or new circulating water pipe. New equipment foundations include the foundations for the steam turbine generator (STG), combustion turbine generators (CTGs), and heat recovery steam generators (HRSGs).

The final invert elevation of the new circulating water pipeline will not be determined until detailed design by the EPC contractor. It is likely that all existing foundations along the proposed circulating water pipe route will need to be removed to allow adequate space for trench excavation and pipe placement.

Based on the results of the previous soil investigations performed for Units 1 through 4 at the ESGS site, the potential for liquefaction at the site has been classified as low to moderate. New subsurface investigations associated with the ESPR project will be performed to define the potential for liquefaction. If the potential for liquefaction is determined to be a significant problem, ground improvement will become necessary.

If ground improvements are required within the limits of balance of plant equipment as well as major equipment foundations, the scope of the demolition work would increase to cover removal of additional existing foundations below Elevation 10.0 feet (MLLW).

Groundwater control would be required at excavations for the removal of foundations and piping below the groundwater level. A groundwater control system will be installed as appropriate for the removal of the foundations below Elevation 8.0 feet (MLLW). The groundwater control system of choice will be put in place around the footprint of the proposed excavations.

Water discharge from the dewatering system may be treated onsite and discharged to the ocean or may be pumped into containers and disposed of off site. If it is determined that dewatering of the excavations may cause excessive settlement of structures, a groundwater barrier may be put in place. This barrier would extend from the ground surface to the clay layer found at about Elevation –30 feet (MLLW).

Once drawdown is achieved, excavation and removal of the structures would follow. Each excavation would encompass as much foundation demolition as possible with side slopes of 1.5H:1V. If it would become necessary to keep dewatering to a minimum, barrier wall excavation support may be needed to limit the excavation area and dewatering.

Any excavation below Elevation 10.0 ft (MLLW) performed to remove an existing foundation or pipe will be backfilled to Elevation 10.0 ft (MLLW) with controlled fill. The demolition contractor will leave the excavation at the end of the demolition work at Elevation 10.0 ft (MLLW), and this elevation will serve as the construction platform from which the EPC contractor will begin construction of the new facilities.

Staging of excavation and groundwater control will minimize the volumes of water to be handled at one time.

BACKGROUND

The location of oil wells and former sand and gravel works is not clearly identified on AFC figure 5.3-2.

DATA REQUEST

24. Please highlight the location of oil and gas wells and sand and gravel works on figure 5.3-2 of the AFC. If no oil or gas wells or sand and gravel works show up on the figure then clearly state so on the figure.

Response No. 24: A revised Figure 5.3-2 with the requested information is provided as Attachment 9.

BACKGROUND

The beach sand near the southwestern boundary of the site appears to have washed away so that the width of the beach is less than the width of the beach near the northwestern corner of the site. This may be due to interference in sand movement along the coast by the rock groin northwest of the site.

DATA REQUEST

25. Please identify the parties responsible for maintaining the beach and submit a copy of their erosion control plan for the beach south of the rock groin.

Response No. 25: The County of Los Angeles Department of Beaches and Harbors is responsible for maintaining the beach south of the rock groin. A copy of the Erosion Control Plan and related documentation is provided as Attachment 10.

TECHNICAL AREA: HAZARDOUS MATERIAL HANDLING
AUTHOR: CITY OF EL SEGUNDO

70. In the Hazardous Material Handling Section of the AFC, a figure should be provided to show the zone of influence of ammonia from a tanker truck release scenario (page 5.15-17) just as there is a figure for a pipeline release scenario.

Response No. 70: A figure showing the potential downwind extent of the tanker truck release is provided as Attachment 11. The methods and assumptions used in this offsite consequence analysis are discussed in Section 5.15.2.3 of the AFC. A tanker truck release scenario is discussed in Section 5.15.2.3.4, on page 5.5-17 of the AFC. As stated in the AFC, the results of the analysis for the tanker truck scenario extend to a significantly larger area than the pipeline scenario. The maximum zone of influence above the significance level extends outwards to a distance of 0.3 miles (approximately 1,600 feet from the release location). This encompasses a portion of the residential neighborhoods in the community of El Porto, located south of the generating station, as well as Vista Del Mar Boulevard and the public beach areas near the hypothetical release location. This offsite consequence analysis is very conservative and may over-predict actual release conditions.

The significant exposure threshold is defined by EPA as the downwind distance where the predicted concentration exceeds the Emergency Response Planning Guideline Level 2 (ERPG-2) value of 200 parts per million (ppm). The ERPG-2 value is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing any irreversible or other serious health effects or symptoms that could impair an individual's ability to take corrective action. The maximum downwind concentration is predicted in the guidance document as a function of the release rate and the ERPG-2 level. The isopleth in the figure represents the ERPG-2 (200 ppm) value.

71. In the Hazardous Material Handling Section of the AFC, it is not clear how high the ammonia concentration would be in a release under either pipeline or tanker truck release. It is stated that the levels would exceed significance (ERPG-2 level) but do not state if they would reach or exceed the IDLH or lethal level.

Response No. 71: The analysis for the accidental release scenarios followed the procedures outlined in the CalARP program showing the significance zone for the proposed project. The program does not require

additional analysis associated with other levels within the impact zone. However, a screening analysis was conducted, based upon the results from the previous modeling to estimate the potential downwind distances to the IDLH and lethal zones. Based upon the screening analysis, it is estimated that the lethal zones for the pipeline release and the tanker truck release would extent approximately 50 feet and 160 feet, respectively, from the center of the spill. At these distances, there would be no lethal zones of impact offsite from the facility.

The maximum distances of the IDLH zone for the two releases could extent out approximately 350 feet for the pipeline release and approximately 1,050 feet from the tanker truck release. At these distances, the pipeline release could extent just beyond the western property boundary on the beach area and to the parking area to the north. The offsite extent of the tanker truck release could affect approximately 1,800 feet of beach to the directly west of the facility; no residential locations are projected to reach these levels. It should be noted that the conditions predicting these results only occur during the nighttime conditions; daytime conditions are expected to have much lower impacts.

72. The AFC does not appear to include an analysis of the soil conditions beneath the Units 1 and 2, which would be replaced.

Response No. 72: In December 2000, URS conducted a Phase I Environmental Site Assessment (ESA) of the El Segundo Generating Station on behalf of El Segundo Power II LLC. Information gathered during the Phase I ESA was used to assess current soil and groundwater conditions beneath the Generating Station and may be used to assess soil and groundwater conditions beneath Units 1 and 2. A list of reports reviewed as part of the Phase I ESA are provided for reference in the Phase I ESA report; the report is provided in Appendix T in Volume II of the AFC. Also please refer to the Executive Summary and Section 4.0 of the Phase I document for a summary of soil conditions at the Generating Station.

Based on the review of reference documents listed in the Phase I ESA report, groundwater impacted with petroleum hydrocarbons is suspected beneath Units 1 and 2. Hydrocarbons were detected in groundwater in monitoring wells around Units 1 and 2 (e.g., EOW-18, EOW-35, and MW-4S). These wells were sampled in 1997 and 1998 by NRG Energy during their due diligence investigation in connection

with the purchase of the Generating Station from Southern California Edison (SCE). The primary source of hydrocarbons in groundwater beneath Units 1 and 2 is the Chevron Refinery, located east of the Generating Station.

Soil sampling conducted by NRG Energy in 1997 and 1998 around Units 1 and 2 suggests that soils near the water table (located approximately 12 to 14 feet below grade in the vicinity of Units 1 and 2) have been impacted by hydrocarbons in groundwater. The shallow soils (surface to approximately 5 feet below grade) around Units 1 and 2 were considered to have de minimis levels of hydrocarbons, where detected. According to ASTM standards, de mimimis conditions are those conditions that do "… not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies." Based on the sampling results, it is likely that soil directly beneath Units 1 and 2 is also impacted at a depth coincident with the water table due to hydrocarbons present in groundwater. Although shallow soil samples have not been collected and sampled directly beneath Units 1 and 2, there is a possibility that soil directly beneath Units 1 and 2 may be or have been impacted by activities associated with operations in Units 1 and 2. However, the impacts are expected to be de minimis.

73. The AFC should provide an analysis of the soil conditions beneath the SCE oil storage tanks, which will be demolished as part of the project.

Response No. 73: Please refer to Phase I and Phase II soil investigations provided to the City of El Segundo by SCE as part of their application submittal related to demolition of the tank farm.

In December 2000, URS conducted a Phase I ESA of the El Segundo Generating Station on behalf of El Segundo Power II LLC. The purpose of the Phase I ESA was to document recognized environmental conditions (REC) at the Generating Station resulting from previous on-site or off site activities. Previous investigation reports referenced in the Phase I ESA were reviewed which documented conditions within the Tank area. These conditions are summarized in the Executive Summary and in Section 4.0 of the Phase I ESA. The Phase I ESA is provided as Appendix T in Volume II of the AFC. Investigation reports for the south fuel oil above-ground storage tank (AST) indicate that there has been no substantial leakage from the AST; however, an estimated 1,000 cubic yards of soil was

reported to be impacted with total petroleum hydrocarbons (TPH). TPH concentrations up to 248,000 milligrams per kilogram (mg/kg) were detected in this area. According to SCE, the more significantly impacted soils beneath the AST were reported to be limited to 18 inches below ground surface. Edison installed a double-bottom and leak detection system on the south AST. At the north fuel oil AST location, soil samples detected TPH up to 6,400 mg/kg. A double-bottom and leak detection system was not installed on the north AST; therefore, the subsurface beneath the north AST was not investigated. Edison received approval from the Regional Water Quality Control Board, Los Angeles Region (RWQCB) to leave the contaminated soil in place until the tank is decommissioned or removed.

Elevated TPH concentrations were reported in soil in the area beneath the displacement-oil AST. The displacement AST is located within the AST area, between and east of the north and south ASTs. TPH in the area of the displacement oil AST were reported at concentrations up to 62,000 mg/kg. Impacted soil was reported to exist to a depth of up to approximately 20 feet below ground surface. TPH in soil beneath the ASTs will likely require management by a regulatory agency when these ASTs are removed.

TECHNICAL AREA: LAND USE
AUTHOR: MARK R. HAMBLIN

BACKGROUND

The AFC (AFC, page 3.2-1, third paragraph, page 5.9-2, fourth full paragraph) does not explain nor show the land division procedure that was used (e.g. parcel map, etc.) to divide the original 36 acre Southern California Edison (SCE) property to create 3 parcels consisting of 24.7 acres (currently owned by El Segundo Power LLC); 2.24 acres (the existing SCE switchyard); and 9 acres (the existing SCE fuel oil tank farm). The State Subdivision Map Act (*California Government Code Sections 66410-66499*) provides the State requirements and procedures for conducting a land division for the purpose of sale, lease or finance.

DATA REQUEST

26. Explain the land division procedure used to divide the former 36 acre SCE power generation property to create the current three parcels.

Response No. 26: A copy of a recorded parcel map is provided as Attachment 12.

27. Show on a map (parcel map, lot line adjustment map, etc.) the 3 legally created parcels that comprises the former 36 acre SCE power generation property.

Response No. 27: Maps and legal descriptions of the present configuration of the three legally created parcels that comprise the former 36-acre property are provided in Attachment 13.

Note to the Reader: Responses to Data Requests 40, 41, 61, 65, 66 and 67 are provided below. These Data Requests originated from the City of El Segundo, and address land use issues.

40. A subdivision map for the splitting of the SCE Tank parcel into two parcels has been submitted to the city for review. The AFC should include a discussion of the proposed subdivision and its relationship to the power plant site.

Response No. 40: Attachment 14 provides parcel information for the tank farm area. Drawing 098496-OS-S3003, Revision 1 (Figure 3.5-1A) and Drawing 098496-OS-S3004, Revision 1 (Figure 3.5-1B) were prepared to show the various land parcels on the El Segundo Generating Station site, including the easement parcel within parcel 2 (tank farm). These drawings are provided as Attachment 15.

41. The proposed maintenance and administrative buildings adjacent to the SCE tanks, depicted on figure 3.5-1b appear to be close to the existing property line as well as the proposed subdivision property line. The property lines should be clearly distinguished on the plans.

Response No. 41: Drawing 098496-OS-S3003, Revision 1 (Figure 3.5-1A) and Drawing 098496-OS-S3004, Revision 1 (Figure 3.5-1B) were prepared to show the various land parcels on the El Segundo Generating Station site and indicates the location of the administration building in relation to existing lot lines. These drawings are provided as Attachment 15**.**

61. The description of LORS on page 3.12-5 should indicate the reference the entire El Segundo Municipal Code.

Response No. 61: A revised Table 3.12-1 is provided as Attachment 16.

65. The land use section of the AFC should discuss the Coastal Development Permit requirements of the California Coastal Commission and its implementing authority, the City of El Segundo, and the applicability of such to the proposed project.

Response No. 65: Under provisions of the Coastal Act, the California Coastal Commission retains review authority over power plants sited in the Coastal Zone. The City of El Segundo has an adopted Local Coastal Plan, the provisions of which will apply to certain elements of the ESPR project. Specifically, it is anticipated that the city would process and issue implementing permits (e.g., demolition and construction permits), as appropriate, for the project and consistent with the conditions of the approved AFC.

66. The land use section discusses different permitting process for the height of the proposed exhaust stacks. Administrative Use Permits or Conditional Use Permits are not appropriate permitting options for the proposed height increase. These processes can only be used for uses, not for deviations from development standards in the zoning code. A variance would be the appropriate processing option for requesting a deviation from a development standard.

Response No. 66: Comment noted.

67. The use of off-site laydown yards may require approval of a discretionary permit from the City of El Segundo (Page 5.9-45).

Response No. 67: Comment noted.

TECHNICAL AREA: NOISE
AUTHOR: JIM BUNTIN

BACKGROUND

The CEC typically assesses compliance with the 5 dB noise level increase criterion by comparison of the steady state noise level due to the power plant to the average (or typical) L_{90} values obtained during nighttime hours, as noted by the applicant. The Cities of El Segundo and Manhattan Beach apply a similar criterion to the median (L_{50}) ambient noise level. The applicant has summarized the average hourly L_{90} and L_{50} values collected in the long-term noise measurement periods in Table 5.12-1, and in the text of the AFC. However, the hourly noise level data were not provided.

DATA REQUEST

28. Please provide the hourly L_{eq}, L_{50}, and L_{90} values for noise measurement sites LT-1, LT-2, LT-1a, LT-2a, LT-3 and LT-3a in tabular format. Note the time periods where extraneous noise sources affected the noise level data.

Response No. 28: Attachment 17 provides tabular L_{eq}, L_{50}, and L_{90} noise data for the sites requested, in 15-minute, hourly, and cumulative increments. The long-term noise data was collected by unattended noise monitoring devices; thus no information beyond the following regarding "extraneous noise sources" is available. For measurements LT-1 and LT-1a, the most likely dominant noise source measured between the hours of 20:00 - 7:00 and 19:30 – 6:45 respectively was nearby, nighttime construction activities. For measurement LT-2, relatively high noise levels during the 14:00, 16:00, 5:00 and 10:00 hours are believed to be caused by on-site tanker trucks passing very near the LT-2 monitor site. No other anomalous noise intervals are apparent.

TECHNICAL AREA: SOCIOECONOMICS
AUTHOR: CITY OF EL SEGUNDO

68. The socioeconomic section of the AFC should discuss the applicability of the El Segundo Traffic Mitigation Fee program to the project (Page 5.10-26).

Response No. 68: The El Segundo City Council has adopted Resolution No. 3969 establishing Traffic Mitigation Fees for new development. The Public Works Director will calculate a fee as provided for in the approved City of El Segundo Evaluation of Traffic Congestion Mitigation Fee Study. The ESPR project will submit an Application for Traffic Mitigation Fee Determination to the City of El Segundo Public Works Director prior to construction.

69. The socioeconomic section of the AFC should discuss the fact that there are no school fees that would be collected by the El Segundo Unified School District for the proposed project (page 5.10-27).

Response No. 69: Section 5.10.5.2 of the AFC discusses the applicability of school impact fees to the ESPR Project. This discussion is provided below:

California Government Code Section 65995-65997 (amended by SB 50), states that public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities. However, the code does include provisions for levies against development projects near schools. The administering agency for implementing school impact fees in the project area is the City of El Segundo, Building and Safety Division. City of El Segundo staff has indicated that for all developments east of Sepulveda Boulevard, the school impact fees are given to the Centinela Valley Union High School District and the Wiseburn School District. No school impact fees are levied for development projects west of Sepulveda Boulevard. Since the proposed project site is west of Sepulveda Boulevard, no school impact fees would be imposed on the project (Huerta, Enrique, City of El Segundo Community and Economic Development Department, personal communication with Dan Vukovic, URS, November 1, 2000.).

TECHNICAL AREA: TRAFFIC AND TRANSPORTATION
AUTHOR: JAMES FORE & LANCE PAGEL

BACKGROUND

The AFC states that shipments of hazardous material will occur during construction and once the plant is in operation. The AFC indicates that the use of trucks is required for hazardous materials transport.

DATA REQUEST

30. Please indicate what truck routes may be used for the delivery of hazardous material and identity any railroad crossing, sharp curves, schools, hospital, etc. along these routes.

Response No. 30: The truck route to be used for transport of hazardous materials would comprise Vista Del Mar Boulevard, Imperial Highway, and local freeways (I-105 and I-405). The majority of this route consists of freeways and major arterials with wide rights of way, rather than local roads. There are no known railroad crossings, sharp curves, hospitals, or other sensitive receptors along the proposed route, except for Imperial Avenue School located on Imperial Avenue between California Street and Main Street. The route would be identical to that currently used for existing plant operations, and would be acceptable under the City of El Segundo hazardous materials transport permit process.

BACKGROUND

The pipeline construction activities and associated lane closures will impact local traffic flow during construction.

DATA REQUEST

31. Please identify the Level of Serve (LOS) for those sections of the roadways impacted and the mitigation measures such as signage, detours, and flagman if required, etc. that will be taken to minimize the impact of construction.

Response No. 31: As discussed in response to Data Request 38, the final determination of the precise route has not been determined. The precise route, including how and where the lines traverse Vista del Mar and other surface streets, will trigger an analysis of potential impacts and determination of appropriate mitigation measures.

It is recommended that pipeline construction be limited to non-peak hours along Vista Del Mar. See Response No. 32 for more discussion of traffic control plans that will be developed for the pipeline construction.

32. Please identify the impact that pipeline construction may have on local business and on street parking and mitigation measures planned to minimize the impact.

Response No. 32: As discussed in response to Data Request 38, the final determination of the precise route has not been determined. The precise route, including how and where the lines traverses Vista del Mar and other surface streets, will trigger an analysis of potential impacts and determination of appropriate mitigation measures.

Pipeline construction could result in short-term, temporary disruption to local businesses; however, impacts will be mitigated through strategies to be developed as part of the project's Traffic Control Plan (proposed under Mitigation Measure TRANS-4). This plan will be reviewed and approved by appropriate agencies prior to initiating the work. The Plan will include specific measures to address placement of traffic control devices, construction work hours, emergency access, temporary travel lane closures, and parking. Driveway access to local businesses will be maintained throughout construction, and emergency service providers, will be contacted prior to construction to ensure that adequate police and fire access is maintained.

BACKGROUND

The AFC indicates that many of the intersections that will be impacted by construction activity are operating at a LOS of F.

DATA REQUEST

33. Please indicate what measures the project will take to insure that the LOS for this intersection will not be adversely impacted.

Response No. 33: Table 5.11-1 of the AFC identifies the following intersections as currently operating at LOS F:

- Sepulveda Boulevard/El Segundo Boulevard (PM peak hour)
- Vista Del Mar Boulevard/Rosecrans Avenue (AM peak hour)

- Sepulveda Boulevard/Rosecrans Avenue (AM and PM peak hour)
- Aviation Boulevard/Rosecrans Avenue (AM and PM peak hour), and
- Sepulveda Boulevard/Imperial Highway (PM peak hour).

Table 5.11-2 of the AFC identifies existing ADT along these roadways as ranging from about 19,400 to 53,600. As a worst-case scenario, assuming that all construction workers (422) during the peak period are distributed to the roadway with the lightest ADT (19,400), the project would still contribute less than a 2 percent increase in traffic during the peak period. This would not be considered to be a significant traffic impact.

BACKGROUND

During construction of the project, truck deliveries of material and equipment will be required. The AFC indicates that during the sixth month these deliveries will peak at 29 deliveries per day.

DATA REQUEST

34. Please indicate the timing of the deliveries during the day and the current truck to car ratio for the truck routes.

Response No. 34: Deliveries would be spread throughout each workday. Given a peak (month 6) of 29 deliveries per day (or about 2-3 trucks per hour), no measurable traffic impacts are anticipated to local roadways. Based on visual observation (no known written data is available), the current truck to car ratio for the truck routes is estimated at about 5 percent.

62. The AFC should provide a detailed analysis of construction traffic safety issues at the entrance to the project on Vista Del Mar.

Response No. 62: As mentioned in Response No. 32, a detailed traffic control plan will be developed for the various construction elements. Workers will be bussed to the site and will have minimal impact since the number of busses during the peak traffic hours is anticipated to be eight entering and eight exiting. As mentioned in Response No. 34, only 2 or 3 truck deliveries are anticipated per hour. When heavy or oversized vehicles and/or equipment must enter the site, they must have procured a permit from the local agency(s) to ensure the safe transport of the vehicles/equipment. It is not anticipated that a temporary traffic signal

would be required. If the collective decision is to install a temporary signal, the signal should be actuated type, only affecting free-flow on Vista Del Mar when necessary for vehicles to enter or exit the project site.

63. The AFC should include additional discussion about the extent of construction impacts related to the construction of the two proposed water pipelines in the City of El Segundo.

Response No. 63: As discussed in response to Data Request 38, the final determination of the precise route has not been determined. The precise route, including how and where the lines traverse Vista del Mar and other surface streets, will trigger an analysis of potential impacts and determination of appropriate mitigation measures.

It is recommended that pipeline construction be limited to non-peak hours along Vista Del Mar. See Response No. 32 for more discussion of traffic control plans that will be developed for the pipeline construction.

64. The AFC should include an analysis of the traffic impacts from the construction activities associated with the demolition of the SCE oil storage tanks.

Response No. 64: The Applicant is in the process of acquiring the oil storage tank property from SCE. Demolition of the tanks will take place regardless of the outcome of the AFC process. Demolition of the tanks will be subject to the CEQA requirements, as administered by the City of El Segundo as lead agency. A full analysis of the impacts of demolition will occur as a part of the tank farm demolition CEQA process for the project approval.

Note to the Reader: Response to Data Requests 87 is provided below. This Data Request originated from the City of Manhattan Beach, and addresses traffic and transportation issues.

87. Please discuss whether any construction traffic will use 45th Street or any other Manhattan Beach streets for access to the plant. Please provide number of trips, types of traffic and schedules.

Response No. 87: The project will not use 45th Street for access for general construction, except for construction of the sanitary discharge line at the corner of 45th Street and The Strand. During general construction, the vast

majority of traffic is anticipated to access the plant site via I-105, I-405, Imperial Highway, and Vista Del Mar. A small percentage of construction traffic, commuting to and from the south, is anticipated to use major local thoroughfares traversing Manhattan Beach (such as Sepulveda Boulevard). Proposed Mitigation Measure TRANS-4 provides for a Traffic Control Plan which is designed to direct workers and deliveries to appropriate remote parking and staging locations, which would avoid City of Manhattan Beach streets.

TECHNICAL AREA: TRANSMISSION LINE SAFETY & NUISANCE
AUTHOR: CITY OF EL SEGUNDO

74. In the Transmission Line Safety and Nuisance section of the AFC there should be a figure showing the location of the transmission line lattice towers that would be replaced with tubular steel poles (page 5.18-2). It is not clear if the construction impact of this aspect of the project has been discussed in the AFC.

Response No. 74: Two lattice line towers will be replaced with three tubular steel generator lead poles. These existing towers are located on the plant property, as shown in Figure 3.3-1A. No towers outside of the plant site are planned for replacement.

Construction of the generator lead poles is described in Section 3.9 of the AFC. Impacts associated with installation of the new generator lead poles are considered in various sections of the AFC environmental analysis.

75. In the Transmission Line Safety and Nuisance section of the AFC, it is not clear which transmission lines would be impacted by increased magnetic fields due to the increased load on the lines. A figure showing the impacted lines and the properties within 200 feet of the lines that could experience computer interference should be included (Page 5.18-29). It is not clear if there are residential properties that would be impacted by the potential interference.

Response No. 75: The increased generation from the project could lead to increases in magnetic fields of up to 26 percent as described in Section 5.18 of the Application. This estimate is based on measurements taken along the existing overhead transmission line. These measurements were projected to account for factors such as the plant running at full load, the topography is even and the transmission lines have balanced currents. In this connection it should be recognized that the existing lines already carry currents that are at times equivalent to the currents due to project operation.

To the extent local increases in magnetic fields occur, computer interference may result within an area of approximately 200 feet from the centerline of the existing transmission route as described in the AFC. However, magnetic field strengths can vary widely with local structures, topography, and equipment orientation. Thus specific computer interference effects are difficult to project, though they are expected to be minor. Therefore, the Applicant has stipulated that if a resident's or business's computer is being impacted by magnetic fields

from the transmission lines, and the complaints are substantiated, then the project operator will mitigate any impacts as needed. Mitigating measures could include provision of magnetic shield enclosures, software programs, or replacement of cathode ray tube monitors with liquid crystal displays.

76. In the Transmission Line Safety and Nuisance section of the AFC, a study of the local radio and television signal strength should be prepared to determine if there could be any interference from the transmission lines on local radio and television reception (page 5.18-44).

Response No. 76: The existing overhead transmission line should not cause radio or TV interference in either dry or wet weather conditions due to corona noise based on field measurements and extensive computer modeling of transmission line noise. The approach taken in the application has been to estimate the potential incremental effects on interference from project operation. In this connection it should be recognized that the existing lines already carry currents that are at times equivalent to the currents due to project operation.

Because of extreme variations in local radio and TV signal strengths due to local structures, transmission operation, topography, and other factors, a study of existing signal strengths is not likely to provide useful information regarding the incremental interference impacts of project operation. Instead, the Applicant has agreed to stipulate that if any resident is impacted by radio or TV interference from the transmission lines, and if complaints are substantiated, then the project operator will mitigate any impacts as needed on a case-by-case basis. Mitigating measures could include transmission repairs; adjusting or modifying receivers; or, adjusting, repairing, replacing or adding antennas, antenna signal amplifiers, filters or lead-in cables. Please refer to Stipulation TSLN-2 in Section 5.18, page 5.18-48 of the AFC.

TECHNICAL AREA: VISUAL RESOURCES
AUTHOR: CITY OF EL SEGUNDO & CITY OF MANHATTAN BEACH

56. In the Visual Resources section of the AFC, photo simulations should be provided for the new plant looking at the site from directly east of the site on Vista Del Mar and directly west of the site from the beach (figure 5.13-2b). The photo simulations in the AFC are taken from quite a distance away from the project site and seem to underestimate the mass of the structures when close up to them.

Response No. 56: Due to the terrain of the surrounding property and the limited number of additional sensitive view locations beyond those already represented, the possibility of producing additional photo simulations from the immediate east and west is very limited. Key Observation Point Number 5, which was taken from Vista Del Mar is a representative observation point with a full line of sight for motorists. For further photo simulations from the west, Key Observation Point Number 7 has been added. KOP 7 and an analysis of the simulation methodology is provided as Attachment 18. This KOP analyzes all visual impacts from a point directly west of the project on Dockweiler State Beach. Photo simulations have been taken to represent the Key Observation Point before and after construction, as well as an assessment of project impacts.

Supplemental Response to Data Request No. 56

Attachment 19 provides the following figures:

- Figure 5.13-10a – Existing View from KOP 7 as discussed in Response to Data Request 56
- Figure 5.13-10b – Simulated View from KOP 7 as discussed in Response to Data Request 56
- Figure 5.13-10b – Simulated View from KOP 7, with a pointer to the generator lead pole as requested in the March 14, 2001 workshop
- Revised Figure 5.13-5b – Simulated View from KOP 2, with pointers to the generator lead poles as requested in the March 14, 2001 workshop.

57. In the Visual Resources section of the AFC, the photo simulations should include the new 95-foot tall generation lead poles.

Response No. 57: The photo simulations do in fact include the 95-foot tall generator lead poles. Figures 5.13-4b, 5.13-4c, 5.13-5b, and 5.13-6b illustrate the generator lead poles. The new generator lead poles will carry lines from the generator to the substation, and will be located in the same general location as the existing lattice towers. Unlike regular transmission towers, the generator lead poles are much smaller in mass and scale. Therefore, their visual impact is substantially reduced, with little to no impact.

Note to the Reader: Responses to Data Requests 86 and 89 are provided below. These Data Requests originated from the City of Manhattan Beach, and address visual resource issues.

86. Please provide a discussion and photo simulations of proposed improvements to the existing perimeter fencing, walls and landscaping adjacent to 45th Street in the City of Manhattan Beach.

Response No. 86: A full discussion and photo simulation of proposed improvements to the existing perimeter fencing, wall and landscaping adjacent to 45th Street in the City of Manhattan Beach would be speculative at this point, due to the need for focused community participation regarding this subject. It should be noted that the proposed improvements are not considered to represent a significant visual impact in consideration of the existing structures, but rather would enhance the views from surrounding areas. After the March 14 workshop, a Visual/Aesthetic workshop was scheduled for April 18.

89. Please provide before and after construction views from the south, in the city of Manhattan Beach, similar to the views from the north (Figures 5.13-4a and 5.13-4b).

Response No. 89: Key Observation Point 2 Figures 5.13-5a and 5.13-5b illustrate the project site with both before and after construction views from the south, adjacent to the City of Manhattan Beach. The optimal Key Observation Point is one that illustrates the viewshed with line of sight and the maximum number of viewers. This Key Observation Point takes these factors into account when selecting a viewpoint adjacent to the City of Manhattan Beach.

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