



El Segundo Power, LLC.
301 Vista Del Mar Boulevard
El Segundo, CA 90245
Phone: 310.615.6028
Fax: 310.615.6060

July 6, 2015

Mr. Thomas Howard
Executive Director
State Water Resources Board
Division of Water Quality, 15th Floor
1001 I Street
Sacramento, CA 95814

Dear Mr. Howard,

RE: Request for concurrence with interim mitigation proposal for El Segundo Generating Station under the Once-Through Cooling Policy

El Segundo Power, LLC (ESP), owner of the El Segundo Generating Station (ESGS), writes this letter to reiterate its request for concurrence that the \$1 million ESP has already donated to the Santa Monica Bay Restoration Commission (SMBRC) satisfies the interim mitigation requirements imposed by Section 2(C)(3)(b) of the Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). From October 1, 2015 until the date the relevant OTC unit achieves compliance with the OTC Policy, the OTC Policy requires that the interim impacts of OTC impingement and entrainment be mitigated, and provides that compliance can be achieved by

“(a) Demonstrating to the State Water Board’s satisfaction that the owner or operator is compensating for the interim impingement and entrainment impacts through existing mitigation efforts, including any projects that are required by state or federal permits as of October 1, 2010; or (b) Demonstrating to the State Water Board’s satisfaction that the interim impacts are compensated for by the owner or operator providing funding to the California Coastal Conservancy, which will work with the California Ocean Protection Council, to fund an appropriate mitigation project.”

ESGS intends to achieve compliance with the OTC Policy for the last remaining OTC unit at ESGS (Unit 4) by permanently retiring Unit 4 on December 31, 2015. ESP has already retired the other three OTC units at ESGS that were covered by the OTC Policy, many years in advance of the OTC Policy’s 2015 compliance deadline. Accordingly, the OTC Policy’s interim

mitigation requirements that commence on October 1, 2015 will only apply to one unit and only for a brief 3-month period until OTC flows permanently cease at the end of 2015. ESP's previous \$1 million donation should be credited towards compliance with the interim mitigation requirements of Section 2(C)(3) of the OTC Policy, and no additional mitigation should be required for the ESGS.

ESP previously submitted letters regarding the once-through-cooling (OTC) Implementation Plan to the State Water Resources Control Board (State Water Board) on March 30, 2011, January 30, 2013, and February 27, 2013. In particular, ESP communicated that it had provided \$1 million to the SMBRC to support several projects within the Santa Monica Bay watershed. This \$1 million payment had originally been slated to mitigate impacts associated with a new once-through cooled facility ESP had proposed in 2000 and was licensed in 2005 by the California Energy Commission (CEC) to replace ESGS Units 1&2. ESP subsequently amended its CEC license in 2007 with dry-cooled generation and in parallel committed to the elimination of OTC at ESGS. The amended CEC license removed the requirement to fund mitigation of impacts associated with the previously proposed OTC repowering, yet ESP continued with the funding of \$1 million worth of mitigation projects through payment to SMBRC. Those funds have not been formally credited towards mitigating the effects of OTC; hence, we are again requesting confirmation that the funding of SMBRC is appropriate in meeting the State's OTC interim mitigation requirement for the operating period following October 1, 2015.

The \$1 million donation was used to finance projects that furthered the goals of the Santa Monica Bay Restoration Plan, which is SMBRC's guidance document for improving water quality and habitat in the Santa Monica Bay watershed. In its Implementation Plan, ESP identified the six studies and projects funded by the \$1 million donation to the SMBRC:¹

- Economic Valuation study - This study looked at the economic benefits of non-consumptive uses in the region (swimming, surfing, kayaking, etc.) that are conducted in a healthy bay region.
- Rocky Reef Assessment - This study is assisting with data to help inform the Marine Life Protected Area (MLPA) process.
- County-wide Funding Feasibility Study - This study examined the issues and parameters facing a potential county-wide funding source

¹ The State Water Board had requested additional information on the studies that were conducted by the SMRBC with funding from ESP in its December 11, 2012 letter to ESP. Specifically, the State Water Board requested, "*Submit the studies and assessment done by the Santa Monica Bay Restoration Commission that ESGS has provided funding towards as a means of meeting the interim impingement and entrainment impact mitigation requirement.*" ESP submitted the SMBRC project electronic documents and studies to the State Water Board in its February 27, 2013 letter.

for water quality projects. The funding source, for example, could come from parcel assessments or other funding mechanisms.

- Support for SMBRC Marine Technical Advisory Committee - Provides funding to support SMBRC's role in the MLPA process.
- Bight '08 Rocky Reef Survey - Collaboration of multiple entities (public sector, private sector, education) which performed the Southern California Coastal Watershed Research Project's (SCCWRP) Southern California Bight survey to ensure that concerned areas in Santa Monica Bay be surveyed intensively as a separate strata to allow meaningful comparison of the Bay with the rest of the Southern California Bight.
- Dolphin Study - This study includes an evaluation of the types of dolphins in the bay, including sampling their skin for contaminants, etc.

ESP's provision of funding for these studies is consistent with the requirements in Section 2(C)(3)(b) and should demonstrate that ESP has satisfied the OTC Policy's interim mitigation requirement.

Based on Unit 4's maximum design flow of 200.08 million gallons per day (MGD), the maximum actual flows from October 1 to December 31, 2015 could be as much as 18,407 MG. Actual flows are expected to be significantly less; actual October-December 2013 flows were 16,168 MG, and actual October-December 2014 flows were 8,868 MG. Conservatively assuming a mitigation rate of \$6.50/MG, the maximum mitigation payment for ESP for 2015 would be approximately \$110,000, and the actual amount is likely to be less than \$100,000. After December 31, 2015, once-through cooling flows at ESGS will cease per the OTC Policy. Therefore ESP's previous \$1 million payment far exceeds ESP's likely expected mitigation obligation under the OTC Policy. Accordingly, ESP requests that the State Water Board provide written concurrence that ESP has satisfied the interim mitigation requirements of the OTC Policy with its \$1 million donation to the SMBRC.

If you have any questions or comments, please do not hesitate to contact me at george.piantka@nrg.com or at (760) 710-2156.

Sincerely,



George L. Piantka, PE
Director, Regulatory Environmental Services
NRG Energy, West Region
As agent for El Segundo Power, LLC

cc: Jonathan Bishop, Chief Deputy Director, SWRCB
Dr. Maria de la Paz Carpio-Obseso, Chief of Ocean Unit, SWRCB
Samuel Unger, Acting Executive Officer, LARWQCB
Ken Riesz, Plant Manager, El Segundo Power, LLC
Peter Landreth, NRG West Region
Tim Sisk, NRG West Region

Attachment:

ESP Letter – California 316(b) – Implementation Plan dated March 30, 2011
ESP Letter – Update to ESGS Implementation Plan dated January 30, 2013
ESP Letter – Item 5 Supplemental Information dated February 27, 2013
Compact Disc – SMBRC Projects

Attachments



El Segundo Power, LLC
301 Vista Del Mar Blvd
El Segundo, CA 90245
Phone: 310.615.6030
Fax: 310.615.6028

Mr. Philip Isorena
Chief
NPDES Unit
State Water Resources Board
Division of Water Quality, 15th Floor
1001 I Street
Sacramento, CA 95814

**SUBJECT: CALIFORNIA 316(b) POLICY - IMPLEMENTATION PLAN
EL SEGUNDO GENERATING STATION
EL SEGUNDO POWER, LLC
NPDES PERMIT NO. CA0001147**

Dear Mr. Isorena,

On May 4, 2010 the State Water Resources Control Board (“State Water Board”) adopted a Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (“Policy”) which became effective on October 1, 2010. The intent of the Policy is “...to ensure that the beneficial uses of the State’s coastal and estuarine waters are protected while also ensuring that the electrical power needs essential for the welfare of the citizens of the State are met.” This Policy establishes uniform technology-based standards for the implementation of the federal Clean Water Act Section 316(b) (33 U.S.C. §1326 et seq.).

The State Water Board sent El Segundo Power, LLC (“ESP”) a letter dated November 30, 2010 to inform them of the Policy and the requirement to submit an Implementation Plan for the El Segundo Generating Station (“ESGS”) (Letter from Thomas Howard, Executive Director to George Piantka, NRG West). An attachment to the letter entitled, Implementation Plan and Report of Waste Discharge Requirements, described these requirements. El Segundo Power, LLC is the owner of ESGS.

Background

ESGS is located in the city of El Segundo, Los Angeles County and consists of four natural gas fired steam electric generating units. Units 1 and 2 were each rated at 175 megawatts (“MW”) and have been demolished. Units 3 and 4 are each rated at 335 MW. Units 3 and 4 employ the use of once through cooling and withdraw water from the Santa Monica Bay at a location approximately 2,000 feet offshore at a depth of approximately 20 feet. The offshore intake is equipped with a velocity cap. Water is drawn through an approximately 3 foot deep opening. This opening is covered by a series of

Mr. Phillip Isorena
Chief of the NPDES Unit
State Water Resources Control Board
March 30, 2011
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1 ¼ inch diameter rods which are 14-inch on center. This leaves an opening between the rods of 12 ¾ inch.

Cooling water is transported from the offshore intake to the onshore portion of the intake structure through a buried pipe which is 12 feet in diameter. The onshore portion of the intake structure includes two vertical traveling screens for each of the two remaining operating units. There is one circulating water pump for each screen. Each pump is rated at 69,200 gallons per minute (“gpm”), for a total design offshore cooling water flow of 276,800 gpm. Discharge from the once through cooling system is via an outfall pipe, designated as 002. Discharge from retired Units 1 and 2 have ceased effective May 2010 in preparation for the demolition of those units.

On December 21, 2000, ESP filed an Application for Certification (“AFC”) seeking approval from the California Energy Commission (“CEC”) to repower the existing ESGS Units 1 and 2. Units 1 and 2 were shutdown in December 2002, and the air permit for those units has been relinquished. The CEC in February 2005 issued a Final Decision (i.e., license) approving the repowering project with conditions. On June 18, 2007, ESP filed a petition to amend (“PTA”) the license with the CEC. ESP subsequently filed an amendment with the CEC to change the owner and name of the “R2C2” project to El Segundo Energy Center LLC and El Segundo Energy Center (“ESEC”), respectively. The PTA proposed the replacement of Units 1 and 2 with two trains of fast start, highly efficient combined cycle generation, referred to as rapid response combined cycle, or “R2C2” (Units 5, 6, 7 and 8). Each train, when constructed will consist of one gas turbine generator, one heat recovery steam generator, and one steam turbine generator. The combustion turbines are referred to as Units 5 and 7, while the steam turbines are referred to as Units 6 and 8. The repowered units are expected to have a capacity of 560 MW. ESEC will utilize air cooled condensers which do not use cooling water from the ocean, equivalent to that of dry cooling towers. This type of rapid response technology is very compatible with California’s increased reliance on renewables in that when adequate renewable power is not available, ESEC can quickly come on line and provide replacement electricity.

CEC approved the ESEC on June 30, 2010 and subsequently published the written decision on July 13, 2010. Demolition of Units 1 and 2 was completed January 2011 and construction is scheduled to commence June 1, 2011. Construction is scheduled to be completed by March 2013 and the new generation will subsequently be commissioned to be online by the summer of 2013.

Compliance Track

ESGS will comply with the requirements of the Policy under Track 1. Units 1 and 2 have been removed; construction will begin by June 2011 with the new generation being online by the summer of 2013. The repowered units will employ air cooled condensers which are the equivalent of dry cooling towers. The Policy states that, “The installation of closed cycle dry cooling systems meets the intent and minimum reduction requirements of this compliance alternative.” (Policy Section 2.A.(1). Pg. 4). Therefore, the new Units 5, 6, 7 and 8 will be in compliance with the Policy.

As required by the revised Title V Facility Permit, dated July 16, 2010 as issued by the South Coast Air Quality Management District (“SCAQMD”), Unit 3 will be permanently shut down within 90 days after Units 5, 6, 7 and 8 commence commercial operation (i.e., summer of 2013). The corresponding ocean intake flow to Unit 3 will cease within 6 months of shutdown of Unit 3. This will result in the reduction of the Unit 3 cooling water flow by 100% (199.3 MGD). ***Unit 3 will therefore be in compliance with the Policy 2 years in advance of the current Policy compliance date of December 31, 2015 for ESGS.***

ESEC currently intends to file with the CEC and other requisite agencies applications for the repowering of Unit 4 by 2012. Unit 4 is currently required to be in compliance with the policy by December 31, 2015. ***With this Implementation Plan we are requesting an extension to the current Policy compliance date to December 31, 2017.*** Unit 4 will comply via Track 1 by replacing the steam boiler with additional fast-start, air-cooled, combined cycle generation. The projected date of operation of the proposed new generation to replace Unit 4 is not known at this time, but irrespective of the permitting and commercial timelines for Unit 4 replacement, ESEC is committed to retire Unit 4 by December 31, 2017. Intake flow would cease by December 31, 2017. When modifications of the intake structure are complete, the retirement of Unit 4 will amount to the elimination of an additional 199.3 MGD of once-through cooling discharge.

ESGS Units 3 and 4 currently comply with the impingement mortality criteria in the Policy. Policy Section 2.A.(2)(c) states that technology-based improvements that are specifically designed to reduce impingement mortality that were implemented prior to October 1, 2010 may be counted towards meeting Track 2 requirements. El Segundo has a submerged offshore intake structure equipped with a velocity cap to reduce impingement mortality¹. Velocity caps are a proven technology for the reduction of impingement mortality. Early studies conducted at coastal California power plants, including El Segundo, originally demonstrated this. Weight (1958)² reported that the Huntington Beach Steam Station had an offshore intake structure which consisted of a conduit which extended approximately 0.5 mile from the beach. The conduit terminated in an upturned elliptical bowl rising 10 ft above the bottom. It was constructed with a velocity cap “to change the entry flow characteristics for the control of fish.” They report that earlier intake systems were constructed without velocity caps and experienced system operation problems due to schools of fish entering the system. It was hypothesized that fish were unable to sense the vertical currents resulting from the upward facing intake pipes. The installation of a steel plate redirected the velocity horizontally allowing the fish to sense the velocity and to avoid the flow. Weight reported test results, both with and without the velocity cap, resulting in a 95% reduction of fish in the intake.

¹ Details of the cooling water system are described in, El Segundo Power, LLC. 2008. Final Report El Segundo Generating Station Clean Water Act Section 316(b) Impingement Mortality And Entrainment Characterization Study. El Segundo, CA. 384p.

² Weight, R. H. 1958. Ocean cooling water system for 800 MW power station. Journal of the Power Division; Proceedings of the American Society of Civil Engineers. Proc Paper 1888. pp 1888-1 through 1888-22

A recent study has been performed at the Scattergood Generating Station offshore cooling water intake structure (Los Angeles Department of Water and Power 2007)³. The study was performed during the period October 11, 2006 through January 2, 2007. The study measured impingement alternating between cooling water withdrawn through the velocity cap intake structure for two weeks and through the discharge structure⁴ for two weeks. In addition, hydroacoustic monitoring of fish abundances was performed at the two locations were used to verify that there were no differences in fish abundances between locations that could have affected the results (no statistically significant differences were found between the two locations).

The Scattergood Velocity Cap Study calculated that the reduction in the impingement rate on all fishes was 97.56 percent based on abundance and 95.30 percent based on biomass. The difference was statistically significant for abundance; however, the results for biomass were not statistically significant. This was possibly due to the impingement of relatively low numbers of high-biomass species, such as Pacific electric ray and thornback, during one of the test periods. The authors found these results to be higher than those calculated in prior studies. This may be due to higher Pacific sardine abundance during this study as compared to the earlier studies.

These studies clearly demonstrate that offshore velocity caps reduce impingement rates well in excess of the comparable level of wet cooling (i.e., 90% of 93% reduction commensurate with wet cooling) required by the Policy under Track 2. Therefore, El Segundo is and will continue to be in compliance with the impingement criteria required by the Policy during its operation.

El Segundo must also comply with the entrainment reductions in the Policy. Total El Segundo withdrawal rates per the NPDES permit equaled 607 MGD. The repowering of Units 1 and 2 with a system that will employ air cooled condensers has resulted in the elimination of the use of up to 207.4 MGD of ocean water for cooling. As stated earlier, the use of an additional 199.3 MGD will cease with the shutdown of Unit 3. The repowering of Units 1 and 2 and the shutdown of Unit 3 equates to 406.7 MGD of seawater for cooling no longer being withdrawn. This represents a 67% reduction in the withdrawal of seawater for cooling, which will occur no later than December 31, 2013. As currently planned, the repowering of Unit 4 will also employ air cooled condensers resulting in the reduction of an additional 199.3 MGD of ocean water for cooling. This would result in a 100% reduction of 607 MGD of seawater cooling withdrawal and the elimination of once-through cooling at the site by December 31, 2017 – the requested compliance extension date for ESGS.

The Policy also requires that existing power plants “shall install large organism exclusion devices having a distance between exclusion bars no greater than nine inches, or install other exclusion devices, deemed equivalent by the State Water Board” and “implement measures to mitigate the

³ Los Angeles Department of Water and Power. 2007. Final Report Scattergood Generating Station; Clean Water Act Section 316(b) Velocity Cap Effectiveness Study. 212p

⁴ The discharge pipe terminates in a 2.3 m (7.5 ft) diameter vertical riser, without a velocity cap, located 122 m (400 ft) away from the intake velocity cap.

interim impingement and entrainment impacts resulting from the cooling water intake structure(s), commencing October 1, 2015 and continuing up to and until the owner or operator achieves final compliance. The owner or operator must include in the implementation plan, described in Section 3.A, the specific measures that will be undertaken to comply with this requirement.”

As stated earlier, ESGS has an offshore velocity cap intake structure. Cooling water is withdrawn through a velocity cap inlet located approximately 2,600 ft from the onshore seawall. The bottom of the cooling water inlet is located at a depth of approximately 10 ft above the bottom of the Santa Monica Bay. The top of the velocity cap is located at a depth of approximately 16 ft below MLLW. Water is drawn through an approximately 3 foot deep opening. This opening is covered by a series of 1 ¼ in diameter rods on 14 in centers. This leaves an opening between the rods of 12 ¾ in. The intake will therefore require retrofit with bars with a minimum of 9 inch spacing, as stated in the Policy by October 1, 2011.

The State Water Board has identified the preferred mitigation method as providing funding to the California Coastal Conservancy that will ultimately be used “for mitigation projects directed toward increases in marine life associated with the State’s Marine Protected Areas in the geographic region of the facility.” The California Coastal Conservancy has identified several restoration projects in the South Coast region that, when implemented, would provide increases in habitat and production of marine life.

The CEC in its original decision, dated February 2005, required El Segundo to fund up to \$5 million Bay-wide study and enhancement activities which should assist the Los Angeles Regional Water Quality Control Board in its performance of its 316(b) responsibilities, not only for the ESGS project but also for other future projects around the Bay (CEC 2005, Conditions of Certification BIO-1 at 66)⁵. This was based on the project description using once through cooling contained in the original CEC application. As part of the requirement of the CEC decision and prior to the submission of the amended application, El Segundo paid \$1 million to the Santa Monica Bay Restoration Commission (SMBRC).

These payments were spent on completed projects or encumbered in projects that are near completion to the following SMBRC projects:

- Economic valuation study of non-consumptive uses of the bay;
- Rocky Reef Assessment;
- County-wide funding feasibility study;
- Support for SMBRC Marine Technical Advisory Committee;
- Bight '08 rocky reef survey; and

⁵ California Energy Commission. 2005. El Segundo Power Redevelopment Project: Commission Decision. CEC-800-2005-001-CMF.

- Dolphin study.

The CEC subsequently rescinded that requirement in their approval of the amended ESEC⁶ (BIO 1 at 36) stating:

2. The revised Conditions of Certification set forth below are appropriate and will ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable LORS.
3. The Biological Resources aspects of the amended project do not create significant direct or cumulative environmental effects.

Based on the projects funded and since these payments are no longer a requirement, ESP requests that this prior mitigation payment to be considered a prepayment against the interim mitigation requirement and therefore does not propose additional interim mitigation at this time.

Proposed Compliance Schedule

Below is the proposed schedule for ESGS to comply with the Policy:

- May 2010 – Compliance achieved for Unit 1 and 2 with ceasing of intake flows
- April 1, 2011 - Submit Implementation Plan to outline Track 1 and/or Track 2 compliance with impingement and entrainment.
- October 1, 2011 – Verify Policy requirement that no greater than nine inch spacing between bars for the intake structure is in compliance with the large organism exclusion devices. This requirement will be satisfied with the retrofitting of the bars to a minimum spacing distance of nine inches.
- October 31, 2011 – Potential State Water Board approval of the Implementation Plan.
- Summer 2013 – Unit 3 will be shutdown and retired.
- December 31, 2013 – Unit 3 intake flow will cease.
- October 1, 2015 – December 31, 2017 – El Segundo Power proposes the \$1 million paid to the Santa Monica Bay Restoration Commission (“SMBRC”) be considered a prepayment against the interim mitigation requirement satisfying the interim mitigation fee for this time period.
- December 31, 2017 – Unit 4 will be shutdown and retired. Intake flows associated with Unit 4 will cease at this time.

⁶ California Energy Commission. 2010. El Segundo Power Redevelopment Project: Commission Decision to the Amendment. CEC-800-2010-015.

Mr. Phillip Isorena
Chief of the NPDES Unit
State Water Resources Control Board
March 30, 2011
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ESP believes a reasonable approach to meeting the compliance requirements of the Policy has been presented in this Implementation Plan. This approach balances the need for the protection of the marine resources and the need for cost effective electric power in the Los Angeles Basin. We would be happy to review and discuss any part of this Implementation Plan.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person and persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. "I am aware that there are significant penalties for submitting false information, including the possibility, of a fine and imprisonment for knowing violations."

If you should have any questions concerning this report please contact George Piantka at (760) 710-2156.

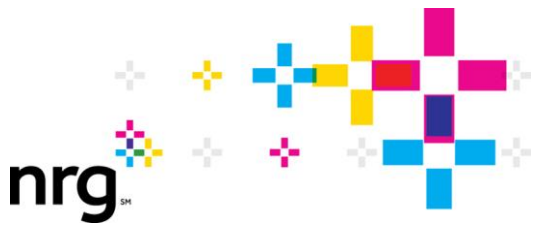
Sincerely,

El Segundo Power, LLC
By: NRG El Segundo Operations Inc.,
Its Authorized Agent

By: 
Ken H. Riesz, Sr.
Plant Manager

Attachments

cc: Mr. Jonathan Bishop
Ms. Marleigh Wood
Ms. Joanna Jensen



El Segundo Power, LLC.
301 Vista Del Mar Boulevard
El Segundo, CA 90245
Phone: 310.615.6028
Fax: 310.615.6060

January 30, 2013

Mr. Thomas Howard
Executive Director
State Water Resources Board
Division of Water Quality, 15th Floor
1001 I Street
Sacramento, CA 95814

Dear Mr. Howard,

**RE: ONCE-THROUGH COOLING POLICY IMPLEMENTATION PLAN
UPDATE FOR EL SEGUNDO GENERATING STATION; Letter dated
December 11, 2012**

El Segundo Power LLC (ESP), owner of the El Segundo Generating Station (ESGS), submits its response to the State Water Resources Control Board's (State Water Board) December 11, 2012 letter in which the State Water Board requested an update to ESP's Implementation Plan to meet the Statewide Water Quality Control Board Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). ESGS is located at 301 Vista Del Mar Boulevard in El Segundo, CA and consists of 2 steam boiler units (Units 3 and 4) with a combined capacity of approximately 670 megawatts (MW). Units 1 and 2 with a combined capacity of 350 MW were retired and subsequently demolished in 2010.

The State Water Board's OTC Policy was adopted on May 4, 2010 and became effective on October 1, 2010. On November 30, 2010, the State Water Board sent a letter pursuant to Water Code Section 13383 directing ESP to submit an Implementation Plan (IP) addressing a list of specified information requirements. ESP submitted its IP on March 30, 2011. In the IP, ESP outlined the retirement of Units 1-3 and the demolition of Units 1 and 2 to enable the construction and operation of the El Segundo Energy Center (ESEC). ESEC is licensed by the California Energy Commission (CEC) (Docket 00-AFC-14C) and has a Permit to Construct/Temporary Permit to Operate from South Coast Air Quality Management District (SCAQMD; Facility ID 115663).

Construction of the new ESEC units (Units 5, 6, 7, and 8) began in 2011; when completed, ESEC will consist of two combined cycle trains with each containing a gas turbine generator (GTG), a heat recovery steam generator (HRSG), one steam turbine generator (STG) and air cooled heat exchangers for cycle heat rejection. The air cooled design will enable closed-loop circulation of cooling water which eliminates the need for once-through cooling (OTC). In addition, the construction of ESEC on the footprint of the retired and since demolished Units 1 and 2 facilitated the elimination of 208 million gallons per day (MGD) of OTC flow for Units 1 and 2, several years before the December 31, 2015 OTC compliance deadline.

Cooling water for ESP Units 3 and 4 currently flows through a single intake structure and out a common discharge conduit at a permitted rate of up to 399 MGD. OTC Policy § 2.C.(1) required that "No later than October 1, 2011, the owner or operator of an existing power plant with an offshore intake shall install large organism exclusion devices having a distance between exclusion bars of no greater than nine inches, or install other exclusion devices, deemed equivalent by the State Water Board." ESP acquired the necessary permits from the Army Corps of Engineers, California Coastal Commission, and the Regional Water Quality Control Board to complete this compliance obligation in 2011 for the offshore intake velocity cap. In addition, although not required by the OTC Policy, ESP obtained the necessary permits to install new, large organism exclusion device grates with minimum nine-inch spacing between bars on the offshore discharge structure. ESP recognized the safety and value provided by the nine-inch spaced exclusion bars to large marine life.

In a letter dated December 11, 2012, the State Water Board requested responses to six questions relating to the objectives and schedule for ESP to meet the OTC Policy for ESP Units 3 and 4. The questions are restated or paraphrased below, with responses following:

1. An updated compliance track schedule for Unit 3 and its replacement units 5, 6, 7, and 8
2. Provide the anticipated capacity of unit 4 repowering and any updated information on the Unit 4 repowering timeline. Specify the technology that is expected for cooling the repowered facility and indicate the volume of ocean water usage, if any.
3. Provide the status of any necessary permitting activities or electrical interconnection studies and/or agreements with the local utility of the California Independent System Operator (CAISO) to repower or retrofit your generating facilities.

4. An extension is asked for Unit 4 compliance with Track 1. Further information must be submitted to the State Water Board staff that supports reasoning for such a proposal. In addition, an update on the progress made to date toward the IP must be submitted.
5. Submit the studies and assessments done by the Santa Monica Bay Restoration Commission that ESGS has provided funding towards as a means of meeting interim impingement and entrainment impact mitigation requirement.
6. Information on the effectiveness of implementing water intake flow reductions, a comparison on present and historical water intake flow, and the MW production, as these data correspond to the requirements of OTC Policy Section 2(C)(2).

1. Unit 3 Schedule

The new ESEC units are approximately 90% complete with first fire on both combined cycle trains (Units 5 and 6 and Units 7 and 8) scheduled for April 2013. ESP will retire Unit 3 90 days after the first fire of both ESEC units in accordance with SCAQMD Permit to Construct issued on July 13, 2010; Unit 3 retirement is anticipated to occur by June 30, 2013. The retirement of Unit 3 will complete the Track 1 compliance requirement approximately 30 months prior to its OTC compliance deadline, thereby eliminating ~200 MGD of cooling water intake associated with Unit 3. The new ESEC units have a Commercial Online Date (COD) of August 1, 2013.

2. Unit 4 Redevelopment

ESP is currently evaluating a combination of air-cooled combined cycle and advanced peaking turbines to replace the MW that will be retired through the retirement of Units 3 and 4, which will achieve Track 1 compliance for those units. The replacement of Units 3 and 4 path would eliminate an additional ~200 MGD of OTC flow at the ESGS site. ESP intends to submit applications to the CEC and the SCAQMD during the first or second quarter of 2013 for the replacement of Units 3 and 4, with an anticipated COD in 2018-2019 for up to 435 MW of combined cycle and advanced peaking generation. This proposed schedule could be adjusted based upon coordination with CAISO, California Public Utilities Commission (CPUC), and the load serving entity with whom a Power Purchase Agreement (PPA) would be sought. The replacement of Units 3 and 4 with the proposed 435 MW is predicated upon receiving the necessary permits, a PPA, and lender financing.

The development of the ESEC required that Units 1, 2, and 3 be retired to provide the required emission offsets for the operation of the ESEC units. EPS have met the emissions offsets for the ESEC Units 5-8 through the

SCAQMD Rule 1304(a)(2). Rule 1304 allows for the emissions offset exemption to fully offset the project SO_x, VOC, and PM₁₀ emissions with the replacement of electric utility steam boiler(s) with combined cycle gas turbine(s), intercooled, chemically-recuperated gas turbines, or other advanced gas turbine(s). The new equipment must have a maximum electrical power rating (in megawatts) that does not allow basinwide electricity generating capacity on a per-utility basis to increase. The previous MW footprint of the ESGS was 1020 MW (Unit 1 = 175 MW, Unit 2 = 175 MW, Unit 3 = 335 MW, and Unit 4 = 335 MW). The ESEC units will generate 573 MW gross, which requires that the MW associated with Units 1, 2, and 3 be retired to comply with the megawatt-for-megawatt exemption in Rule 1304. The retirement of Units 1-3 for emissions offsets under Rule 1304 will result in a remainder of 112 MW from Unit 3 than can be credited towards the Units 3 and 4 replacement project that ESP will commence air permitting in the first quarter of 2013. These remaining 112 MW from Unit 3 when combined with the 335 MW associated with Unit 4 result in the potential megawatt-for-megawatt replacement value of up to 447 MWs at the ESP site.

3. Unit 4 Extension

ESP requested in the IP an extension to the OTC compliance deadline for Unit 4 from December 31, 2015 to December 31, 2017. The request for a 2-year extension was to maintain Unit 4's 335 MW available to the grid as needed, thereby balancing the early retirement/reduction of Unit 3's 335 MW ~2.5 years ahead of the compliance date. The additional 2 years of availability of Unit 4 was intended to continue to support LA Basin Local Capacity Region (LCR), and more specifically, the West LA and El Nido subareas, as CAISO and CPUC continue the evaluation of near and long term reliability in these load pockets as new OTC replacement generation comes on line or continues in development. When we requested the Unit 4 extension, the availability of Unit 4 beyond the current compliance date was predicated on the contractual status of Unit 4, the economics of extending the life of Unit 4 and further meeting CA OTC Policy requirements, and repowering opportunities to replace Unit 3 and 4.

ESP now intends to accelerate the replacement of Units 3 and 4, which would entail shutting Unit 4 down by its current December 31, 2015 compliance date, demolishing Units 3 and 4, and constructing replacement generation with a COD as soon as 2018 or 2019. The imminent shutdown of Units 3 and the intended shutdown of Unit 4 will eliminate the remaining 399 MGD of cooling water intake at this site. If the CAISO determines that continued operation of Unit 4 beyond December 31, 2015 is necessary to maintain electric reliability, and if the Units 3 and 4 replacement project construction schedule allows the Unit 4 shutdown and demolition to occur

beyond that date, then ESP may resubmit its request for an extension of the December 31, 2015 compliance deadline.

4. Large Generator Interconnection Agreement

A Large Generator Interconnection Agreement (LGIA) exists between El Segundo Energy Center LLC, the Southern California Edison Company, and the CAISO. The LGIA provides the platform from which electrical interconnection needs and issues at ESGS are to be addressed and managed. The replacement of Units 3 and 4 – El Segundo Energy Center phase 2 repowering, is currently in Cluster 4; the associated deposits through the LGIA have been filed.

5. Santa Monica Bay Restoration Commission Projects

As discussed in the IP, ESP provided \$1,000,000.00 to the Santa Monica Bay Restoration Commission (SMBRC) to support several projects within the Santa Monica Bay watershed. These funds were provided to meet a condition of certification in the current CEC license for the ESEC project. These funds were used to finance projects that furthered the goals of the Santa Monica Bay Restoration Plan, which is SMBRC's guidance document for improving water quality and habitat in the Santa Monica Bay watershed. ESP is currently coordinating with the SMBRC to acquire these studies. SMBRC has indicated that they will provide the supporting documentation within a few weeks. As a result, ESP requests an extension for submittal of these studies and assessments until March 1, 2013.

The projects which were funded are as follows.

- Economic Valuation study - This study looked at the economic benefits of non-consumptive uses in the region (swimming, surfing, kayaking, etc.) that are conducted in a healthy bay region.
- Rocky Reef Assessment - This study is assisting with data to help inform the Marine Life Protected Area (MLPA) process.
- County-wide Funding Feasibility Study - This study examined the issues and parameters facing a potential county-wide funding source for water quality projects. The funding source, for example, could come from parcel assessments or other funding mechanisms.
- Support for SMBRC Marine Technical Advisory Committee - Provides funding to support SMBRC's role in the MLPA process
- Bight '08 Rocky Reef Survey - Collaboration of multiple entities (public sector, private sector, education) which performed the Southern California Coastal Watershed Research Project's (SCCWRP) Southern California Bight survey to ensure that concerned areas in Santa Monica Bay be surveyed intensively as a separate strata to allow meaningful comparison of the Bay with the rest of the Southern California Bight.

- Dolphin Study - This study includes an evaluation of the types of dolphins in the bay, including sampling their skin for contaminants, etc.

6. Water Intake Flow Reductions

ESP does not run cooling water pumps without a specific electrical generation or critical system requirement. This position is consistent with the objectives of OTC Policy § 2.C.(2), which requires an existing power plant unit that is subject to the OTC Policy to cease intake flows when not engaging in power-generating activities, or critical system maintenance, unless a reduced minimum flow is necessary for operations, and is consistent with ESP's objective of reducing the large auxiliary electricity demand for the pump motors and associated costs.

ESP water intake requirements are directly related to the dispatch of either or both Units 3 and 4 through CAISO and/or the load serving entity dispatch instructions. The annual average flow for ESP is between 100 and 200 MGD with peaks of 399 MGD in the winter and summer months. While there was a consistent average from 2006 to 2011, the average flow increased in 2012. The flow has also increased since the SONGS outage in January 2012. ESP cooling water flow rate does not vary linearly with MW generation. For example, two cooling water pumps per unit are running whether ESP is producing 20 MWs or 335 MWs on a particular unit, corresponding to minimum and maximum load. Depending on the dispatch instructions, the respective units are expected to ramp up or down from minimum load to maximum load. The intake cooling water system as currently configured must continue at its respective flow rates per unit when the units are operating, in particular as the cooling system responds to changing levels of generation (i.e., "ramping"). As a result, comparing OTC flow rates to levels of generation does not yield a pattern to assess the reduction of OTC flow corresponding to a reduction of MW's produced over time. In addition, OTC circulating pumps are periodically operated for plant critical system maintenance needs when electrical generation is not occurring.

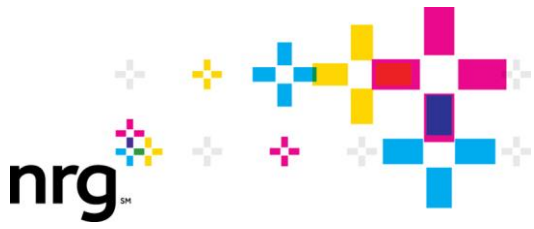
I anticipate the above information has addressed the State Water Board's questions regarding ESP's Implementation Plan. If you have any questions or comments, please do not hesitate to me at george.piantka@nrgenergy.com or (760) 710-2156.

Sincerely,



George L. Piantka, PE
Director of Environmental Business
NRG Energy, West Region
As agent for El Segundo Power, LLC

cc: Jonathan Bishop, Chief Deputy Director, SWRCB
Dr. Maria de la Paz Carpio-Obseso, Chief of Ocean Unit, SWRCB
Ken Riesz, Plant Manager, El Segundo Power, LLC
Peter Landreth, NRG West Region
Tim Sisk, NRG West Region



El Segundo Power, LLC.
301 Vista Del Mar Boulevard
El Segundo, CA 90245
Phone: 310.615.6028
Fax: 310.615.6060

February 27, 2013

Mr. Thomas Howard
Executive Director
State Water Resources Board
Division of Water Quality, 15th Floor
1001 I Street
Sacramento, CA 95814

**RE: ONCE-THROUGH COOLING POLICY IMPLEMENTATION PLAN
UPDATE FOR EL SEGUNDO GENERATING STATION, DATED JANUARY
30, 2013 – Item 5 Supplemental Information**

Dear Mr. Howard,

In response to Item 5 of the State Water Resource Control Board's (SWRCB) December 11, 2012 request for an update to Once-through Cooling Policy (Policy) Implementation Plan, El Segundo Power, LLC (ESP), owner of the El Segundo Generating Station (ESGS), submits the studies that were conducted by the Santa Monica Bay Restoration Commission (SMRBC) with funding assistance from ESP. ESP provided \$1,000,000 to the SMBRC to support several projects within the Santa Monica Bay watershed. These funds were used to finance projects that furthered the goals of the Santa Monica Bay Restoration Plan, which is SMBRC's guidance document for improving water quality and habitat in the Santa Monica Bay watershed. In our January 30, 2013 response letter, ESP requested an extension to Item 5 until the SMBRC's could furnish electronic copies of the completed studies.

SMBRC projects that were funded by the \$1 million include:

- Economic Valuation study - This study looked at the economic benefits of non-consumptive uses in the region (swimming, surfing, kayaking, etc.) that are conducted in a healthy bay region.
- Rocky Reef Assessment - This study is assisting with data to help inform the Marine Life Protected Area (MLPA) process.
- County-wide Funding Feasibility Study - This study examined the issues and parameters facing a potential county-wide funding source for water quality projects. The funding source, for example, could come from parcel assessments or other funding mechanisms.

- Support for SMBRC Marine Technical Advisory Committee - Provides funding to support SMBRC's role in the MLPA process
- Bight '08 Rocky Reef Survey - Collaboration of multiple entities (public sector, private sector, education) which performed the Southern California Coastal Watershed Research Project's (SCCWRP) Southern California Bight survey to ensure that concerned areas in Santa Monica Bay be surveyed intensively as a separate strata to allow meaningful comparison of the Bay with the rest of the Southern California Bight.
- Dolphin Study - This study includes an evaluation of the types of dolphins in the bay, including sampling their skin for contaminants, etc.

The attached compact disc provides these studies as well as additional SMBRC studies that were directly funded or co-funded with ESPs contribution.

I anticipate the above information has addressed the State Water Board's questions regarding ESP's Implementation Plan. If you have any questions or comments, please do not hesitate to me at george.piantka@nrgenergy.com or (760) 710-2156.

Sincerely,



George L. Piantka, PE
Director of Environmental Business
NRG Energy, West Region
As agent for El Segundo Power, LLC

cc: Jonathan Bishop, Chief Deputy Director, SWRCB
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Peter Landreth, NRG West Region
Tim Sisk, NRG West Region

Attachment:
Compact Disc – SMBRC Projects