

**AMENDMENT TO THE WATER QUALITY
CONTROL POLICY ON THE USE OF
COASTAL AND ESTUARINE WATERS FOR
POWER PLANT COOLING**

**FOR
ENCINA POWER STATION**

STAFF REPORT

**State Water Resources Control Board
August 15, 2017**

1. SUMMARY OF THE POLICY AMENDMENT

This Draft Staff Report supports the amendment to the statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (Policy). The Policy establishes uniform, technology-based standards to implement federal Clean Water Act (CWA) section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life.

The State Water Resources Control Board (State Water Board) adopted the Policy on May 4, 2010, under [Resolution No. 2010-0020](#). The Policy was approved by the Office of Administrative Law on September 27, 2010. The Policy became effective on October 1, 2010, and was last amended on April 7, 2015.

The Policy applies to eleven¹ existing power plants located along the California coast that withdraw coastal and estuarine waters for cooling purposes, using a single-pass system known as once-through cooling (OTC). Cooling water withdrawals cause adverse impacts when larger aquatic organisms, such as fish and mammals, are trapped against a facility's intake screens (impingement) and when smaller life forms, such as larvae and eggs, are killed by being drawn through the cooling system (entrainment).

The Policy is implemented through National Pollutant Discharge Elimination System (NPDES) permits. Section 3.A of the Policy required the owner or operator of an affected fossil-fueled power plant to submit an implementation plan to the State Water Board by April 1, 2011. The implementation plan must identify the selected compliance alternative; describe the general design, construction, or operational measures that will be undertaken to implement the alternative; and propose a realistic schedule (including any requested changes to the default final compliance dates identified in the Policy) for implementing these measures that is as short as possible.

The State Water Board received implementation plans from all owners and/or operators as requested, including implementation plans for the four OTC power plants that are owned and operated by NRG Energy Inc. (NRG): Encina Power Station (Encina), Ormond Beach Generating Station, Pittsburg Generating Station and Mandalay Generating Station. NRG submitted the Encina Implementation Plan outlining on a unit-by-unit basis how they intended to achieve compliance with the Policy by their compliance deadline of December 31, 2017.

While NRG had expected to achieve compliance at Encina by December 31, 2017, two major events impacted this plan. First, the unexpected closure in 2013 of the San Onofre Nuclear Generating Station (SONGS) reduced power reliability in Southern California and created the need for additional power generation within the region. The second event was a litigation delay that prevented the timely start of construction of the Carlsbad Energy Center, which is needed to replace the Encina plant to ensure grid reliability. These events have caused the need to defer the closure of the Encina plant for an additional year.

¹ There were originally 19 OTC facilities covered by the Policy but eight of them have closed and/or met their planned compliance deadlines.

The multi-agency Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS)² was created to advise the State Water Board annually on whether the compliance schedule for retiring OTC technology at the state's power plants would threaten reliability of California's electricity supply, including local area reliability, statewide grid reliability, and permitting constraints.

As part of the SACCWIS process, the California Independent System Operator (CAISO) completed an interim study assessing the impact of the delay in constructing the Carlsbad Energy Center on Southern California grid reliability. These results were incorporated into the February 2017 SACCWIS Encina Power Station 2018 Reliability Study Report (SACCWIS 2017a). The report provides the technical basis for SACCWIS to recommend to the State Water Board that it consider an amendment for extension of the Encina compliance date to December 31, 2018. The SACCWIS finds this extension is necessary to maintain grid reliability in the Southern California area in 2018.

The SACCWIS agencies completed their annual grid reliability studies with regard to the entire OTC implementation schedule and presented their findings of the 2017 SACCWIS Draft Annual Report to the SACCWIS members on May 4, 2017 (SACCWIS 2017b). These studies included the CAISO Final 2018 Local Capacity Technical Analysis (LCTA), which is part of CAISO's annual resource requirements cycle (CAISO 2017). None of these studies changed the February SACCWIS recommendation for the Encina compliance extension.

Therefore, based upon the recommendation of SACCWIS to ensure grid reliability, the proposed amendment will extend the OTC compliance deadline for the Encina plant from December 31, 2017, to December 31, 2018. The extension will apply to Encina Units 2 to 5, since Unit 1 was shut down on March 1, 2017, to allow construction of the Carlsbad Energy Center to begin.

The OTC Policy includes a provision that existing power plants must implement measures to mitigate the interim impingement and entrainment impacts resulting from cooling water intakes during operation prior to final compliance with the Policy (section 2 C (3)). Accordingly, the continuing OTC production from Encina will be subject to continued interim mitigation requirements as detailed in State Water Board [Resolution 2015-0057](#) until the plant comes into compliance.

2. REGULATORY BACKGROUND

In 1972, Congress enacted the federal CWA to restore and maintain the chemical, physical, and biological integrity of the nation's waters. CWA section 316(b) requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact.

In 2001, the U.S. Environmental Protection Agency (U.S. EPA) adopted regulations for new power plants (Phase I) that established a performance standard for cooling water intakes based on closed-cycle wet cooling. In 2004, U.S. EPA published the Phase II rule applicable to existing power plants with a design intake flow greater than or equal to 50 million gallons per day (MGD), which was remanded following legal challenge. On

² SACCWIS includes representatives from the California Energy Commission, California Public Utilities Commission, California Coastal Commission, California State Lands Commission, California Air Resources Board, the CAISO, and the State Water Board.

May 19, 2014, U.S EPA finalized regulations covering existing facilities that withdraw at least 2 MGD of cooling water. Facilities have options to select for meeting BTA requirements for reducing impingement. Facilities that withdraw at least 125 MGD are required to conduct studies to investigate site-specific controls to reduce entrainment impacts. Finally, new units added to existing facilities are subject to similar requirements for new facilities. The new regulation was published in the Federal Register on August 15, 2014, and became effective on October 14, 2014 (U.S. EPA 2014).

The State Water Board is designated as the state water pollution control agency for all purposes under the CWA. The state Porter-Cologne Water Quality Control Act of 1969 authorizes the State Water Board to adopt statewide water quality control plans and policies, which are implemented through NPDES permits and waste discharge requirements. The Policy adopted by the State Water Board on May 4, 2010, under [Resolution No. 2010-0020](#), established requirements for the implementation of section 316(b) for existing power plants in California, using best professional judgment in determining BTA for cooling water intake structures. The BTA was determined to be closed-cycle wet cooling, or equivalent. The Policy is implemented through NPDES permits, issued pursuant to CWA section 402, which authorize the point source discharge of pollutants to navigable waters.

Because the Policy requirements are equivalent to, if not more stringent than those contained in applicable U.S. EPA regulations, it continues to govern those existing coastal power plants in California. The U.S. EPA rule explicitly states that it is within the States' authority to implement requirements that are more stringent than the federal requirements.

3. OVERVIEW OF NRG'S ENCINA POWER STATION

The Encina Power Plant is located near the City of Carlsbad in San Diego County adjacent to the Aqua Hedionda Lagoon on the Pacific Ocean, approximately 30 miles north of the City of San Diego. Please see the "Environmental Setting" of section 2.1.7 of the Policy's 2010 Final Supplemental Environmental Documentation (SED) (SWRCB 2010) for more information.

The Encina facility consists of five steam boiler generating units using once-through cooling with an aggregate capacity of 950 megawatts (MW). In its original April 1, 2011, implementation plan, NRG proposed different approaches for the five units. For Units 1-3 (an aggregate of 318 MW capacity), NRG proposed repowering with a new flexible combined cycle facility, the Carlsbad Energy Center, consisting of two combined cycle units with an aggregate capacity of 550 MW. In 2013, NRG informed the State Water Board that it plans to replace Units 1-3 with the Carlsbad Energy Center but no longer intends to pursue Track 2 compliance options and will retire Units 4 and 5 no later than the final compliance date for Encina of December 31, 2017. NRG announced that it will redesign the Carlsbad Energy Center as a set of peaking units, pursuant to an agreement reached among the company, the City of Carlsbad, and San Diego Gas and Electric (SDG&E).

In agreement with the City of Carlsbad and SDG&E, NRG submitted a Petition of Amend to the California Energy Commission (CEC) on May 2, 2014, to replace all five units plus a small combustion turbine at Encina with a 600 MW Simple Cycle Gas Turbine power plant at the Carlsbad Energy Center. The CEC approved the Amendment on July 30, 2015. SDG&E submitted an application to the California Public Utilities Commission (CPUC) for approval of a Power Purchase Agreement (PPA) with NRG. On May 21, 2015, the CPUC

adopted a Decision (D 15-05-051) which approved 500 MW of the 600 MW originally requested and allocated the remaining 100 MW to preferred resources or energy storage. The Decision ordered SDG&E to file the revised contract within 30 days. Pursuant to this Decision, SDG&E filed an advice letter seeking approval of a Power Purchase Tolling Agreement (PPTA) with Carlsbad Energy Center in June 2015. That advice letter was approved by the CPUC in July 2015, but six intervenors filed applications for rehearing with the appellate section. In November of 2015, the CPUC re-affirmed their approval of the Carlsbad Energy Center PPTA. In response to this, petitioners requested that the Court of Appeal overturn the CPUC's decision. The Court of Appeal accepted the petition for consideration and ordered final briefings from the petitioner and respondents.

The Court of Appeal ruled on December 1, 2016, affirming the CPUC's decision granting the PPTA to SDG&E and NRG for the 500 MW Carlsbad Energy Center project. The petitioner did not appeal the decision by the January 9, 2017 deadline.

Given the delays in resolution of the intervenors' petition to the courts, NRG notified the financial community of delays in Carlsbad Energy Center start up dates numerous times during 2016. With the recent litigation resolved, NRG can move forward with the project and it is now assured that Carlsbad Energy Center will not be available by summer of 2018. NRG's construction of Carlsbad Energy Center began April 1, 2017, and is expected to require 21 months to complete. NRG confirmed that Carlsbad Energy Center will be online in the fourth quarter of 2018 (NRG 2017a).

4. RATIONALE FOR THE AMENDMENT TO THE POLICY

California Energy Commission's Integrated Energy Policy Report (IEPR):

The CEC's 2016 IEPR Update (Update) examined the consequences of the Carlsbad Energy Center delay on San Diego local reliability (CEC 2016a). Figure 1 reproduces a chart from a presentation package for the Update (slide 19) (CEC 2016b) that illustrates the results of the analysis of two scenarios – one using baseline assumptions about Carlsbad Energy Center being online by summer 2018, and a second case with Carlsbad Energy Center delayed to 2019.

Figure 1: Comparing Impact of Alternative Assumptions on Local Capacity Surplus/Deficit in San Diego

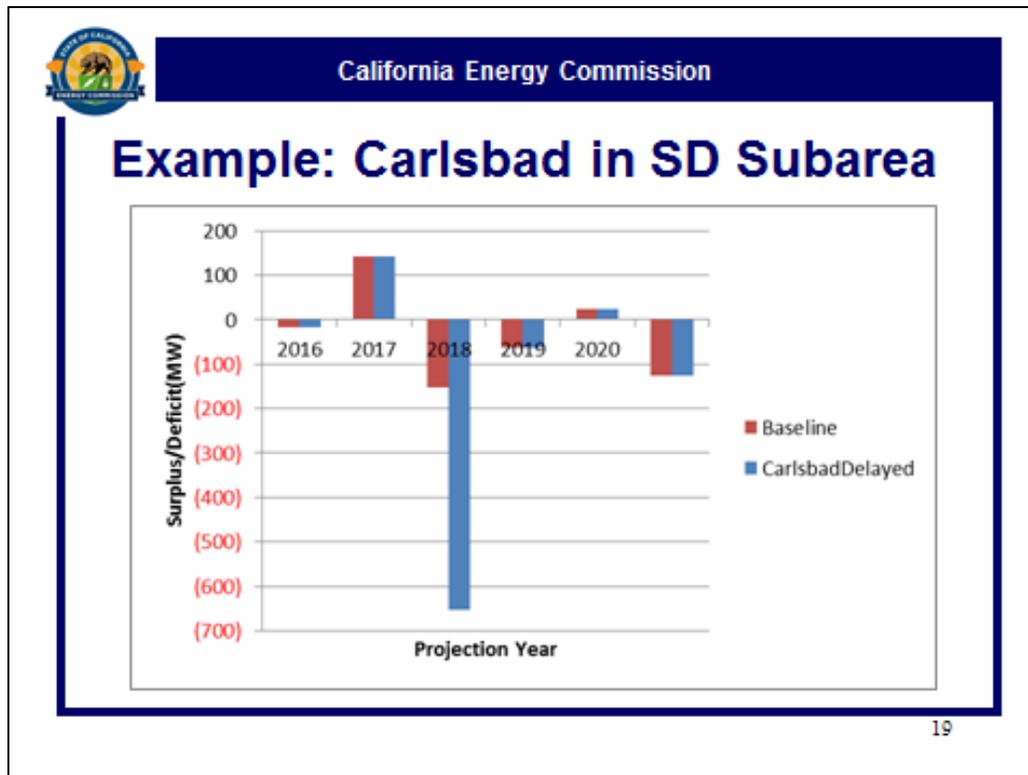


Figure 1 shows a small capacity deficit in 2018 using baseline assumptions, but this deficit is worse in 2018 if Carlsbad Energy Center is not available until 2019. Based on this analysis, the CEC staff recommended that the inter-agency team initiate studies of Carlsbad Energy Center delays on the need to defer Encina OTC compliance date. The CEC endorsed this staff recommendation and has included the following language in the draft Update report released for comment (CEC 2016c).

- **“Assuring Local Reliability in San Diego.** Inter-agency staff (staff from the Energy Commission, CPUC, California ISO, and ARB) should prepare a draft report for consideration by Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) that recommends deferral of Encina’s once-through cooling compliance dates until Carlsbad Energy Center comes on-line. The interagency staff should identify specific units at Encina for which to request deferral based on studies by the California ISO, with the study results and inputs agreed upon by the joint agency team.”

SACCWIS Encina Reliability Report:

The energy agencies (CAISO, CEC, CPUC) agreed that a separate earlier study was needed for the energy year 2018 to substantiate the need to extend Encina’s OTC compliance date. The usual report on CAISO’s annual reliability requirements cycle for 2018 local capacity studies would not be completed until May 1, 2017, which was too late to start the State Water Board amendment deferral process. As an interim step, the CAISO

conducted an interim Encina study between their annual 2017 and 2018 LCTA (SACCWIS 2017a).

The CAISO, in consultation with the CEC and CPUC, developed study assumptions and scenarios for the interim CAISO Encina 2018 study³. The CAISO started with the 2017 LCTA study for the Los Angeles Basin (LA Basin) and San Diego local capacity areas (LCA) and made revisions based on study assumptions agreed to by the CEC and CPUC technical staff. The CAISO performed its studies by applying the methodologies employed in the 2017 analysis with modeling the proposed Carlsbad Energy Center and other resources identified by SDG&E in response to CPUC authorizations.

Two important issues deserve mention, as they provide additional context for the modeling CAISO performed that reflect current realities. The first is the unscheduled and ultimately permanent shutdown of the SONGS in 2013, and the second is the current limitation on the Aliso Canyon natural gas storage facility that began in 2015. With the unscheduled shutdown of the SONGS, the energy agencies and Air Resources Board formed an ongoing inter-agency team to make plans and recommend actions to assure reliability for the Southern California region as a whole. It quickly became apparent that without SONGS the previously independent San Diego and LA Basin LCA were, in fact, one single region with a common vulnerability to contingencies.

The detection of a leak at the Aliso Canyon natural gas storage field in October 2015 has created uncertainty around the use of Aliso Canyon, which directly affects the delivery of natural gas to generating facilities located in the western area of the LA Basin during summer peak load conditions. With the limitation on reinjection at Aliso Canyon and uncertainty over its long-term status, the CAISO analyzed the impact that the absence of Aliso Canyon has on the reliability of the electric transmission system in the LA Basin and San Diego area as a reduction in generation capacity in the LA Basin and a corresponding increase in the San Diego subarea.

The results of the interim CAISO Encina 2018 study for the two Aliso Canyon scenarios show a range of need for Encina. Regardless of scenario, Encina is needed to mitigate reliability concerns on the electric transmission system. In the study, consistent with the 2017 analysis and the CAISO's tariff, the CAISO evaluated multiple critical contingencies from thermal overloads to voltage instability on the electric transmission system in the LA Basin and San Diego areas. In Scenario 1, with Aliso Canyon unconstrained, the greatest local capacity requirements were found to be 7,383 MW in LA Basin and 2,886 MW in San Diego, which resulted in a need of 560 MW of Encina. In Scenario 2, with Aliso Canyon constrained, the local capacity requirements were found to be 7,079 MW in the LA Basin and 3,185 MW in the San Diego subarea, which resulted in a need of 859 MW of Encina. The unexpected constraints at the Aliso Canyon gas storage facility contribute to the higher need for Encina. In summary, the study found the reliability need for Encina capacity under the assumptions employed to range from 560 MW to 859 MW depending on the assumed impact of the Aliso Canyon uncertainty.

As part of the SACCWIS process, the CAISO interim study was incorporated into the February 2017 SACCWIS Encina Power Station 2018 Reliability Study Report and approved by CAISO, CPUC, and CEC. On February 23, 2017, the study and accompanying report

³ Attached as Appendix A, *Encina Power Station 2018 Once- Through Cooling Compliance Date Deferral Study Report, January 16, 2017 within the SACCWIS Encina Report (2017a)*

were presented to the SACCWIS members (SACCWIS 2017c). The report provided the technical basis for SACCWIS to recommend the extension of the Encina compliance date for Units 2-5 from December 31, 2017, to December 31, 2018. The SACCWIS found this extension is necessary to maintain grid reliability in the Southern California area in 2018. Upon this SACCWIS review and recommendation, the State Water Board staff recommends that the State Water Board amend the compliance deadline of the Policy for Encina Power Station Units 2-5 for one year from December 31, 2017, to December 31, 2018.

Encina Interim Mitigation Measures and Mitigation Payment:

The OTC Policy includes a provision that existing power plants must implement measures to mitigate the interim impingement and entrainment impacts resulting from cooling water intakes during operation prior to final compliance with the Policy (Appendix A section 2 C (3)). Accordingly, the continuing OTC production from Encina will be subject to an Interim mitigation payment as detailed in State Water Board [Resolution 2015-0057](#) (SWRCB 2015).

The mitigation requirements may include a site-specific charge that is calculated based on actual production data provided by NRG each year. The calculation of the mitigation payment will occur outside of this amendment process. Encina will be subject to the payment until the OTC production is finally ceased. This amendment would continue these payments until final extended compliance date of December 31, 2018.

5. REQUIREMENTS WHEN AMENDING THE POLICY

The State Water Board must comply with all state and federal public participation requirements and state laws governing environmental and peer review when amending the Policy. The State Water Board is the lead agency for this project under the California Environmental Quality Act (CEQA) and is responsible for preparing environmental documentation for the amendment. The California Secretary of Resources has certified the State Water Board's water quality planning process as exempt from certain CEQA requirements when adopting plans, policies, and guidelines, including preparation of an Initial Study, Negative Declaration, and Environmental Impact Report.

The California Code of Regulations, Title 23, section 3777(a) provides that a Staff Report consists of a written report containing an environmental analysis of the project, an Environmental Checklist, and other documentation. Section 3777(b) directs that the environmental analysis must include a brief description of the project; identification of any significant or potentially significant adverse environmental impacts of the project; an analysis of reasonable alternatives to the project, mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts, and an environmental analysis of the reasonably foreseeable methods of compliance.

In addition, CEQA imposes specific obligations on the State Water Board when it establishes performance standards. Public Resources Code section 21159 requires that an environmental analysis of the reasonably foreseeable methods of compliance be conducted. The environmental analysis must address the reasonably foreseeable environmental impacts of the methods of compliance, reasonably foreseeable alternatives, and mitigation measures. In order to comply with CEQA, an addendum to the May 4, 2010 Final Substitute Environmental Documentation (SED) has been prepared and is further described below.

6. PROJECT DESCRIPTION

The amendment language is shown in Appendix A of this document, and consists of changes to the “Implementation Schedule” in Table 1 in section 3.E of the Policy.

The facility affected by the amendment is the Encina Power Station, which currently has a compliance deadline of December 31, 2017. The amendment would allow an extension for the Encina Power Station, changing the compliance deadline from December 31, 2017, to December 31, 2018.

7. ENVIRONMENTAL SETTING

The Encina Power Plant is located near the City of Carlsbad in San Diego County adjacent to the Aqua Hedionda Lagoon on the Pacific Ocean, approximately 30 miles north of the City of San Diego. Please see the “Environmental Setting” of section 2.1.7 of the Policy’s 2010 Final SED (SWRCB 2010) for more information.

8. PEER REVIEW

The Health and Safety Code section 57004 requires external scientific peer review of the scientific basis for any rule proposed by any board, office, or department within the California Environmental Protection Agency. However, because this amendment is not based on any scientific data, peer review requirements do not apply.

9. ANALYSIS OF ALTERNATIVES

The Policy to implement CWA section 316(b) has been adopted and approved, but not yet implemented through NPDES permits for all the individual facilities, including Encina. The environmental baseline for this amendment is therefore the same as described in the 2010 Final SED for the Policy.

As allowed by the Policy, SACCWIS has considered the following options to an Encina compliance date extension:

Option 1: Do nothing – This option poses significant reliability risk to the Southern California area as the delay caused by the Court of Appeal and NRG’s obligations under the interconnection agreement would leave a gap in generating capability.

Option 2: Fast-track preferred resources (energy efficiency, storage, demand response) in-service - It may be possible to require SDG&E to pursue procurement for the 100 MW of preferred resources faster but that alone would not address the reliability issues without Carlsbad Energy Center and Encina.

Option 3: Stop-gap additional power generation option - Given the current timeframe, it would not be possible to construct alternative generation resources within the San Diego subarea that can provide the needed voltage support as well as capacity for thermal loading mitigations. The only possibility would be bringing in diesel generators with similar capacity. However, challenges in siting and interconnection, as well as the emissions from these resources would likely make this an unworkable option.

Option 4: Construct or connect additional Transmission lines – No transmission alternatives would meet the reliability needs in the timeline.

Considering these four options as not viable or suitable, SACCWIS recommends extending Encina's OTC compliance date until December 31, 2018, as the most prudent option at this time to maintain grid reliability.

Alternatives and Discussion for the State Water Board:

Alternative 1: No Action.

The State Water Board would not adopt the proposed Amendment to the Policy. Under this alternative, the compliance deadline for NRG's Encina facility would remain as currently stated in the policy. This may cause significant grid reliability problems in 2018.

Alternative 2: Adopt the Amendment as described

The State Water Board would adopt the proposed Amendment to extend Encina's OTC compliance date for an additional year to December 31, 2018, as recommended by SACCWIS.

Staff Recommendation: Alternative 2

Considering the other four options considered by SACCWIS, extending Encina's OTC for an additional year would be the most appropriate and reliable alternative at this juncture. This alternative should support grid reliability in 2018 and provide sufficient time to accommodate the construction of the Carlsbad Energy Center.

10. ADDENDUM TO THE FINAL SED ADOPTED MAY 4, 2010

Title 23, Cal. Code Reg., sections 3720-3782 requires the State Water Board to evaluate potential environmental impacts that may be caused by complying with the amendment with one or more of the reasonably foreseeable compliance methods. The 2010 Final SED for the Policy also describes and evaluates potential environmental impacts associated with these technologies, and potential mitigation measures for these impacts.

The amendment would not affect the identified reasonably foreseeable means of compliance with the Policy. Nor would the amendment cause any additional environmental impacts beyond what was identified in the 2010 Final SED adopted with the Policy. Continued operation of the Encina under its current operational configuration does not constitute an increase in impacts relative to the baseline identified in the 2010 Final SED. The extension will not result in additional significant or potentially significant environmental impacts.

11. ECONOMIC ANALYSIS

The 2010 Final SED for the OTC Policy provides information on the costs of compliance with the Policy. The costs for the amendment are consistent with those costs in the 2010 Final SED for the Policy (SWRCB 2010).

12. REFERENCES

- CAISO (California Independent System Operator) 2015-2016 Transmission Plan: APPENDIX D: 2025 Local Capacity Technical Analysis for the Los Angeles Basin (LA Basin), Big Creek/Ventura and San Diego Local Capacity Requirement Areas February 1, 2016 <http://www.caiso.com/Documents/AppendixD-Draft2015-2016TransmissionPlan.pdf>
- CAISO 2018 Local Capacity Technical Analysis. Draft Report and Study Results. May 1, 2017 <http://www.caiso.com/Documents/Final2018LocalCapacityTechnicalReport.pdf>
- CEC (California Energy Commission), Staff Report Assessing Local Reliability in Southern California. August, 2016a. CEC-200-2016-011 http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-06/TN212966_20160826T093802_Staff_Report_Assessing_Local_Reliability_in_Southern_California.pdf
- CEC Presentation, Contingency Mitigation Option Development and Triggering. 2016 Integrated Energy Policy Report update proceeding workshop August 29, 2016b. http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-06/TN212996_20160826T143044_Presentation_Contingency_Mitigation_Option_Development_and_Trig.pdf
- CEC Draft 2016 IEPR (Integrated Energy Policy Report Update), October 2016c. CEC-100-2016-003-CMD. http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-01/TN213930_20161007T134148_Draft_2016_Integrated_Energy_Policy_Report_Update.pdf
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- NRG Encina 2017 Information Request Submittal. 2017a http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/information_letter_nrg_encina.pdf
- NRG Energy Inc. U.S. Securities and Exchange Commission Form 10-K, p. 98, filed on 2/29/2016.
- SACCWIS (Statewide Advisory Committee on Cooling Water Intake Structures): Encina Power Station 2018 Reliability Study. February, 2017a. http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/sacccwis/docs/sacccwis_encina_2018rpt.pdf
- SACCWIS 2017 Final Annual Report May 2017b http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/sacccwis/

SACCWIS Meeting February 23, 2017c.

http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/saccwis/

Settlement Agreement and Release Regarding Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling Between State Water Resources Control Board and NRG. October 9, 2014.

http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/energy_com/p/settlement_nrg%20_2014.pdf

SWRCB (State Water Resources Control Board). Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling: Final Substitute Environmental Document. May 4, 2010.

http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/final_sed_otc.pdf

SWRCB Delegates Authority to the Executive Director of the SWRCB to Approve Measures that Owners or Operators of OTC Facilities Shall Undertake to Comply with Interim Mitigation on a Case-by-Case Basis. Resolution 2015-0057. 2015.

https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/rs2015_0057.pdf

U.S. EPA (United States Environmental Protection Agency). Cooling Water Intakes. August 15, 2014.

http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/final_sed_otc.pdf