

# Report of the Statewide Advisory Committee on Cooling Water Intake Structures

## Local and System-Wide 2021 Grid Reliability Studies

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2019

This document uses strikethrough formatting to indicate ~~deleted text~~ and underline formatting to indicate added text. These changes were made at the direction of SACCWIS members during the August 23, 2019 meeting.



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## Acronyms and Abbreviations

Air District	Air Quality Management District
Alamitos	Alamitos Generating Station
BAA	Balancing Authority Area
CAISO	California Independent System Operator
CEC	California Energy Commission
CEDU	California Energy Demand Update
CPUC	California Public Utilities Commission
ELCC	Effective Load Carrying Capability
IEPR	Integrated Energy Policy Report
IRP	Integrated Resource Planning
kV	Kilovolt
LA	Los Angeles
Los Angeles Regional Water Board	Los Angeles Regional Water Quality Control Board
MIC	Maximum Import Capability
MW	Megawatt
NPDES	National Pollutant Discharge Elimination System
NQC	Net Qualifying Capacity
Ormond	Ormond Beach Generating Station
OTC	Once-through cooling
RA	Resource Adequacy
Regional Water Boards	Regional Water Quality Control Boards

SACCWIS	Statewide Advisory Committee on Cooling Water Intake Structures
South Coast AQMD	South Coast Air Quality Management District
SCE	Southern California Edison
State Water Board	State Water Resources Control Board
TMDL	Total Maximum Daily Load
TSO	Time Schedule Order

# 1 Executive Summary

The joint-agency Statewide Advisory Committee on Cooling Water Intake Structures<sup>1</sup> (SACCWIS) was created to advise the State Water Resources Control Board (State Water Board) on the implementation of the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling<sup>2</sup> (Once-Through Cooling or OTC Policy), ensuring the compliance schedule takes into account the reliability of California's electricity supply, including local area reliability, statewide grid reliability, and permitting constraints.

SACCWIS has prepared this focused report for the State Water Board regarding local and system-wide grid reliability issues that are projected to arise starting in summer 2021 after the planned shutdown of four OTC power plants by December 31, 2020.

With regard to local grid reliability, and as stated in the 2019 SACCWIS Report approved on March 8, 2019, the California Independent System Operator Corporation (CAISO) conducted an interim local area grid reliability analysis, 2021 Limited Local Capacity Technical Study<sup>3</sup>, for the Western Los Angeles Basin, in consultation with the California Energy Commission (CEC) and California Public Utilities Commission (CPUC) in advance of the 2021 annual local resource adequacy (RA) study cycle<sup>4</sup>. The baseline analysis conducted by the CAISO did not identify a need to extend OTC compliance, although the sensitivity studies showed a possible need for the Alamitos Generating Station (Alamitos) for 2021. Based on the sensitivity studies and the potential for system needs as described below, the CAISO's report recommended seeking the extension of the Alamitos OTC Policy compliance date at this time.

With regard to system-wide grid reliability, on June 20, 2019, the CPUC filed Rulemaking 16-02-0007: *Order Instituting Rulemaking to Develop an Electricity Integrated Resource Planning Framework and to Coordinate and Refine Long-Term Procurement Planning Requirements – Assigned Commissioner and Administrative Law Judge's Ruling Initiating Procurement Track and Seeking Comment on Potential Reliability Issues*.<sup>5</sup> In this Integrated Resource Planning (IRP) proceeding, system-wide grid reliability issues starting during summer 2021 were identified and discussed.

The system-wide grid reliability issues stem from three primary sources: 1) four OTC power plants are scheduled to retire by December 31, 2020, effectively removing approximately 5,298 megawatts (MW) from the electrical resource stack<sup>6</sup>; 2) several other non-OTC, high capacity power plants have unexpectedly retired recently, thereby removing the buffer that would have ensured system-wide grid reliability as the four OTC power plants retired on schedule; and 3) new energy procurements can take several years to negotiate, contract, and/or construct. These issues are compounded by uncertainty regarding whether the CAISO system could rely on significantly more imports than it has in recent years, as well as modeling in the CPUC IRP proceeding that predicts a continued shift of net load peak<sup>7</sup> to later hours, when certain non-dispatchable resources cannot actually contribute to system needs. The IRP Ruling listed three strategies that, if implemented, could help address the forthcoming system-wide grid reliability issues. One of those options is to extend the compliance dates of one or more OTC power plants for one or more years.

Based on the analyses by CAISO and CPUC, SACCWIS recommends that the State Water Board consider revising the OTC Policy to extend the compliance dates for Alamitos Units 3, 4, and 5 ~~for two or more years, but no longer than necessary until December 31, 2022~~, to maintain local grid reliability and help improve system-wide grid reliability. In addition, SACCWIS recommends that the State Water Board consider revising the OTC Policy to extend the compliance dates for one or more additional OTC resources ~~for two or more years, but no longer than necessary through December 31, 2022~~, for system-wide grid reliability purposes, based on additional analysis that SACCWIS member agencies will conduct in fall 2019. SACCWIS intends to provide a concrete recommendation on further compliance date extensions for OTC power plants to the State Water Board in late 2019.

## 2 Background and Purpose

The CAISO conducted a 2021 Limited Local Capacity Study for the Los Angeles (LA) Basin and San Diego/Imperial Valley local capacity areas to determine if Alamitos OTC units would be needed to ensure grid reliability beyond its scheduled compliance date of December 31, 2020, due to the construction delay for the Mesa Loop-In Project.

On June 20, 2019, the Assigned Commissioner and Administrative Law Judge in the ongoing IRP proceeding (R.16-02-007) issued a ruling that opened a track for capacity procurement in the short term and requested parties' comments on reliability issues (see endnote 5). In particular, the IRP Ruling projected a heavy reliance on imports into the CAISO Balancing Authority Area (BAA) beginning in 2021 and identified three strategies to mitigate exposure to capacity shortfalls in the medium term. One strategy is to create a bridge for new resources to come online by extending the deadlines for the retirement of some OTC power plants for ~~an additional two years~~ two or more years.

The purpose of this report is to review the results of CAISO's local capacity analysis and of the CPUC IRP Ruling and to provide recommendations to the State Water Board.

## 3 Process for Extending an OTC Policy Compliance Date

Developing the rationale for, preparing needed documentation about, and processing an OTC Policy compliance date extension request involves many steps. In 2016, in preparation for the extension of Encina Power Station's OTC Policy compliance date, the CEC outlined the process to recommend an OTC Policy compliance date extension in its *Staff Report: Mitigation Options for Contingencies Threatening Southern California Electric Reliability*<sup>8</sup>.

There are three groups of steps that are followed in sequence to trigger the extension of an OTC Policy compliance date. Group 1 steps are undertaken by technical staff of the energy agencies and involve conducting appropriate reliability studies analyzing the need for OTC unit compliance date extension. Based on the energy agencies' studies, technical staff of the Interagency Working Group prepare a focused draft SACCWIS report presenting recommendations for OTC Policy compliance date extension for SACCWIS consideration.

Group 2 steps involve the Interagency Working Group presenting the draft report to the SACCWIS, SACCWIS members considering the draft report for revisions or approval, determining final recommendations to bring to the State Water Board, and presenting the recommendations to the State Water Board.

If the State Water Board agrees with SACCWIS's recommendations and directs staff to move forward with amending the OTC Policy to extend a compliance date, Group 3 steps are initiated. State Water Board staff are responsible for conducting steps in Group 3. These steps include: reviewing the proposed changes to the OTC Policy; preparing a draft staff report, amendment language, and a resolution; bringing the amendment before the State Water Board for a public hearing and consideration of adoption; and submitting the administrative record to the Office of Administrative Law for review and approval.

These steps cover the State Water Board's process to approve an OTC Policy compliance date extension and are separate and distinct from the contracting process for the power plant. If the State Water Board approves an OTC Policy compliance date extension, contracting for the power plant would occur separately and through other processes. The procurement process will identify the specific capacity needed to meet reliability requirements.

## **4 Local and System-wide Reliability Analyses**

The CPUC, CAISO, and CEC continue to work together to study electric reliability issues associated with the compliance schedule under the OTC Policy. The CPUC considers procurement authorizations for its jurisdictional load serving entities and conducts system-wide reliability analysis; the CAISO conducts reliability analysis and examines infrastructure upgrades and additions in its transmission planning process; and the CEC evaluates and, when necessary, issues licenses to site new electric generation resources.

### **4.1 CAISO Limited Local Reliability Analysis**

The CAISO conducted a 2021 Limited Local Capacity Study for the LA Basin and San Diego/Imperial Valley local capacity areas to determine if Alamitos OTC Units 3, 4, and 5 would be needed to ensure grid reliability beyond its scheduled compliance date of December 31, 2020, due to the construction delay for the Mesa Loop-In Project.

The completion of the Southern California Edison (SCE) Mesa Loop-In 500 kilovolt (kV) transmission project is needed to allow for the retirement of OTC generation in the Western LA Basin. SCE filed an application for a Permit to Construct (PTC) the Mesa Loop-In Substation Project with the CPUC on March 13, 2015. On February 9, 2017, SCE received the PTC from the CPUC. SCE received the first Notice to Proceed from the CPUC on September 27, 2017, and the second Notice to Proceed for the remaining scope of work (remaining substation, satellite substation work, telecom scope of work) on November 15, 2017. Construction of the project commenced on October 2, 2017 and targeted in-service by summer 2021. However, the current schedule forecasts a March 2022 in-service date as noted in the SCE 10Q and Federal Energy Regulatory

Commission Form 730. The following summary includes major findings related to the need for Alamos OTC implementation schedule extension from the 2021 local capacity study:

1. Study results based on the most recent CEC-adopted 2018-2030 California Energy Demand Update (CEDU) Forecast from the 2018 Integrated Energy Policy Report (IEPR) process alone do not trigger the need for Alamos OTC implementation schedule extension. The lower demand forecast in the 2018 IEPR compared to the 2017 IEPR, coupled with partial completion of the Mesa Loop-in Project (i.e., completion of the 230 kV loop-in portion of the project), as well as completion of the Lugo-Mohave and Lugo-Eldorado 500 kV line series capacitor upgrades and returning them to service<sup>9</sup> help reduce the local capacity requirements in the LA Basin from previous study results.
2. The CAISO also conducted a sensitivity study to assess the risk associated with forecast uncertainty. These studies will ultimately be updated with the latest forecast information in the normal course of the 2021 Local Capacity Technical Study efforts in spring 2020. There were two scenarios evaluated for this sensitivity study:
  - a. A scenario based on approximately 800 MW higher load across the Southern California Edison (SCE) service territory<sup>10</sup>. This demonstrated a need for Alamos OTC generation of 476 MW for the Western LA Basin sub-area.
  - b. A second scenario incorporating the higher demand forecast in the first scenario and assuming 360 MW of potential non-OTC generated capacity is unavailable. The 360 MW are at risk of retirement.<sup>11</sup> For this scenario, the need for Alamos OTC generation increased to 816 MW for the Western LA Basin sub-area.

Note that Alamos Units 1, 2, and 6 are scheduled to be retired by the end of 2019 to allow for transfer of emission credits to the new repowering 640 MW Alamos combined cycle generating facility. This will leave only three remaining OTC units on site: Units 3 (320 MW), 4 (320 MW), and 5 (480 MW) for OTC Policy compliance date extension consideration.

The CAISO also notes that in the CPUC Assigned Commissioner and Administrative Law Judge Ruling of June 20, 2019, in Rulemaking 16-02-007, the option of “[e]xtending deadlines for some portion of planned OTC retirements until new procurement is authorized or online”<sup>12</sup> was proposed to mitigate against potential system-wide capacity shortages beginning in 2021. Further, the Ruling suggested that the appropriate individuals within staff of the Commission begin discussions through appropriate channels with SACCWIS to the State Water Board, under whose jurisdiction the OTC retirements are set<sup>13</sup>, regarding potentially postponing the retirement of one or more OTC units by a year or two.

Due to the risk associated with forecast uncertainty for higher demand and at-risk-of-retirement generation capacity, the CAISO considers it prudent to seek an extension to

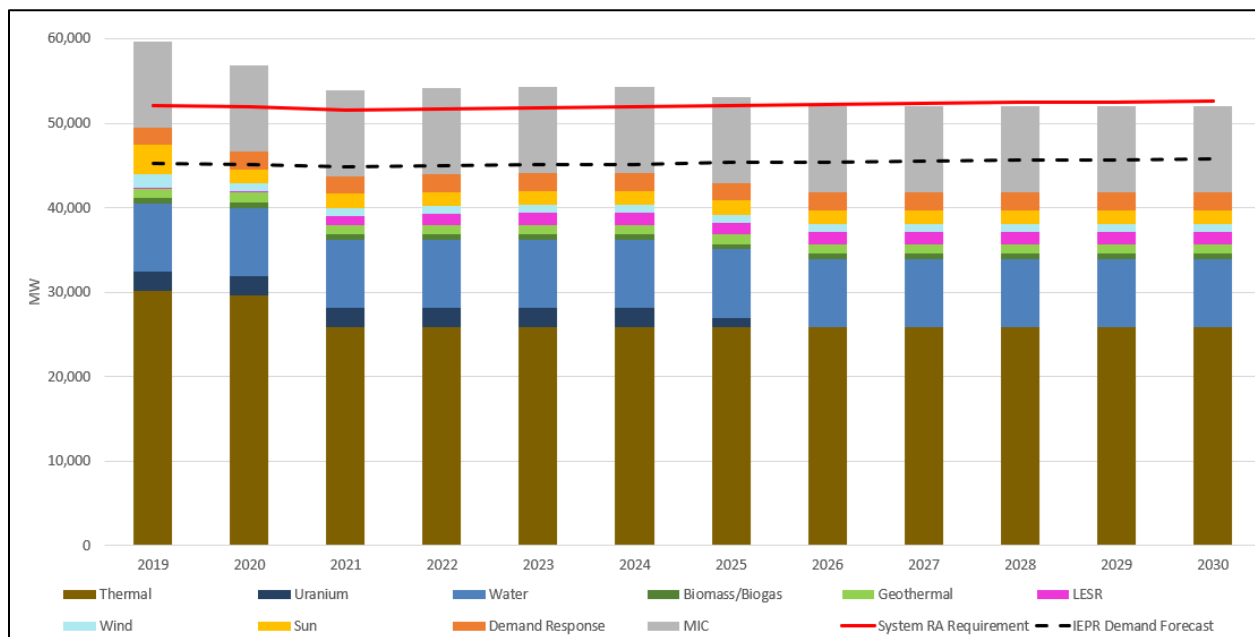


the OTC Policy compliance date for Alamos at this time. Additionally, extending the compliance date for Alamos will assist with the potential need for additional system-wide capacity as discussed in Section 4.2. Actual procurement levels would depend on the 2021 local capacity technical study requirements developed early in 2020, or, possibly, by the need for system capacity determined by the CPUC.

#### 4.2 CPUC IRP Proceeding and System-wide RA Analysis

On June 20, 2019, the Assigned Commissioner and Administrative Law Judge in the ongoing IRP proceeding (R.16-02-007) issued a ruling that opened a track for capacity procurement in the short term and requested parties' comments on reliability issues (see endnote 5). The IRP Ruling compared the estimated available capacity in the CAISO BAA from 2019 through 2028 against the most recent approved IEPR peak demand forecast<sup>14</sup> and estimated system RA requirements for those same years. To analyze available supply, CPUC staff incorporated the most up-to-date information regarding capacity available for system RA purposes, including existing resources, new resources that are expected to come online by 2028 (capacity that is already under construction or is otherwise anticipated by previous Commission decisions), projected demand response, and projected availability of imports.<sup>15</sup> An updated version of this analysis is reproduced in Figure 1 below.

**Figure 1: Peak Load Forecast, RA Requirements, and Available Capacity in the CAISO Balancing Authority Area, 2019 to 2028<sup>16</sup>**



As Figure 1 shows, available capacity within the CAISO BAA drops with the retirement of OTC units at the end of 2020,<sup>17</sup> as well as with the retirement of the Diablo Canyon Nuclear Power Plant (Diablo Canyon) in 2024 and 2025. California's energy agencies have anticipated these retirements for some time, but new developments have also affected the availability of supply. First, Decision (D.)19-06-026<sup>18</sup> adopted new Effective Load Carrying Capability (ELCC) values for wind and solar resources. The new values

are based on updated modeling that presents a more accurate picture of the contribution of these resources to meeting peak system needs, but the new values also reduced the Net Qualifying Capacity (NQC) of wind and solar resources in the peak month of September by 66% and 43%, respectively. Second, several non-OTC resources have retired – or indicated that they plan to retire – somewhat earlier than expected. For example, roughly 640 MW at the fifty-five-year-old Etiwanda Generating Station retired in June of 2018 and is no longer available to CAISO. The ten-year-old Inland Empire Energy Center has also announced plans to retire its 680 MW of capacity at the end of 2019, and our understanding is that this is related to GE ending technical support for the class of turbines in operation at Inland Empire. Third, although not depicted in Figure 1, some generators have announced plans for mothballing or early retirement but have subsequently re-entered the market. This creates forecasting uncertainty and complicates the orderly planning of capacity expansion within the CAISO BAA.

Figure 1 suggests that the CAISO system is already reliant on imports<sup>19</sup> to meet peak system RA needs in 2019 and will become more dependent on imports following the retirement of the remaining capacity for OTC power plants and Diablo Canyon. In fact, most of the existing Maximum Import Capability (MIC) allocated to CAISO – roughly 10,000 MW in 2019 – would be needed by 2021 to meet system RA requirements. This is despite the fact that load serving entities subject to the CPUC RA program, which represent roughly 90% of load in the CAISO BAA, have generally relied upon less than 60% of the MIC to meet peak system RA requirements in recent years (see Table 1 below). It is unclear whether CAISO could sustainably rely upon most or all of the MIC for RA purposes in the future, particularly given resource retirements in the rest of the West and the potential for lower-than-average hydrological years (and thus lower imports of hydroelectricity) in the Pacific Northwest.

**Table 1: CAISO RA Requirements, Maximum Import Capability, and RA Imports, 2016 to 2019 (August and September)**

	August 2016	September 2016	August 2017	September 2017	August 2018	September 2018	August 2019	September 2019
CAISO RA Requirement (MW)	58,821	53,225	56,204	51,622	51,910	49,043	52,136	53,062
MIC (MW)	11,665	11,665	11,304	11,304	10,341	10,341	10,193	10,193
CAISO RA Imports (MW)	6,511	5,778	5,652	5,835	6,380	5,845	6,373	7,129
Imports as % of Req.	11%	11%	10%	11%	12%	12%	12%	13%
Imports as % of MIC	56%	50%	50%	52%	62%	57%	63%	70%

The IRP Ruling identifies three strategies to address this situation in the short term which are likely to be necessary components of a comprehensive plan. Specifically, the IRP Ruling identifies the following:

- Requiring additional procurement of new storage and/or demand response resources.
- Extending deadlines for some portion of planned OTC power plant retirement until new procurement is authorized or online.
- Authorizing procurement of existing resources that have been mothballed or have threatened to leave the market in some way.<sup>20</sup>

The IRP Ruling further proposes three actions that align with these strategies. First, all CPUC jurisdictional load serving entities would be required to procure their proportional share of 2,000 MW of new peak capacity, which must come online by August 1, 2021.<sup>21</sup> Second, appropriate individuals within staff of the Commission should begin discussions through appropriate channels with SACCWIS to the State Water Board, under whose jurisdiction the OTC compliance requirements are set. If SACCWIS and the State Water Board agree, potentially the OTC Policy compliance dates of one or more OTC units could be extended by a year or two in order to accommodate the schedule for new resources to come online to meet system reliability needs.<sup>22</sup>

Finally, SCE would be required to attempt to procure medium-term contracts with 500 MW of existing, non-OTC generation that does not currently have a contract past 2021.<sup>23</sup> A subsequent ruling by the Administrative Law Judge requested initial comments by July 22, 2019, with reply comments due on July 31, 2019.<sup>24</sup>

## **5 Regulatory Requirements**

### **5.1 Water Quality for Alamitos**

In the event of a compliance date extension for an OTC power plant, the OTC Policy would have to be amended by the State Water Board to reflect the new compliance date. Additionally, there are three regulatory documents from the Los Angeles Regional Water Quality Control Board (Los Angeles Regional Water Board), which regulates Alamitos' wastewater discharges (once-through cooling and other facility waters), that would also have to be amended.

The three Los Angeles Regional Water Board regulatory documents associated with Alamitos' discharges to navigable waters are: a National Pollution Discharge Elimination System (NPDES) permit, a Time Scheduled Order (TSO) associated with the NPDES permit, and the San Gabriel River Metals Total Maximum Daily Load (TMDL). The NPDES permit and TSO can be amended concurrently, and the process takes approximately six to nine months to complete. Amending a TMDL typically requires nine months to one year to complete.

There are two options to address amending the State and Los Angeles Regional Water Board documents before December 31, 2020, so the discharges can remain in

compliance in regards to water discharge: 1) concurrent amending of the OTC Policy by the State Water Board and the NPDES permit, TSO, and TMDL by the Los Angeles Regional Water Board, or 2) suspend the OTC Policy compliance date for Alamitos.

At this time, the State Water Board and Los Angeles Regional Water Board intend to amend the OTC Policy and associated regional board regulatory documents concurrently. This involves State Water Board staff working to amend Alamitos' compliance date in the OTC Policy before December 31, 2020. Concurrently, the Los Angeles Regional Water Board would reopen the existing TSO, NPDES permit, and San Gabriel River Metals TMDL to remove the numeric compliance date and replace it with language referencing compliance dates in the OTC Policy.

The second option involves CAISO sending letters to SACCWIS, the State Water Board, and the Los Angeles Regional Water Board notifying them that continued operation of Alamitos is deemed necessary to maintain grid reliability beyond December 31, 2020, and requesting suspension of Alamitos' compliance date for more than 90 days per Section 2.B.(2)(b) of the OTC Policy. Executive directors of the CEC and CPUC have ten days to submit letters stating opposition to the suspension. If there is no opposition from the other energy agencies, the State Water Board shall conduct a hearing within 90 days of the notification to determine whether to suspend the compliance date. Per the OTC Policy, the State Water Board will afford significant weight to the recommendations of CAISO. If suspended, the State Water Board would need to amend the OTC Policy and the Los Angeles Regional Water Board would need to amend the NPDES permit, TSO, and San Gabriel River Metals TMDL on or before the end of the suspension period granted by the State Water Board.

## **5.2 Air Quality for Alamitos**

In California, a new or modified stationary source that will emit air pollutants typically must meet certain emission control requirements and obtain preconstruction and operating permits for its equipment from the local air pollution control or air quality management district (air district) where the source is located. The air district prepares an engineering analysis and places conditions in the permits to ensure that the source will comply with the requirements of federal, state, and local air pollution regulations. For major power plants under the CEC's jurisdiction, the air district's engineering analysis and proposed conditions for the preconstruction permit are submitted to the CEC as a Determination of Compliance. However, the air district also maintains and enforces the power plant's operating permits.

The Title V permit for Alamitos currently reflects plans from the preconstruction permitting action finalized in ~~2017~~2016 to replace four existing utility boilers (Units 1, 2, 3, and 6) with six new gas turbines in two phases. Phase 1 of the project requires Alamitos Units 1, 2, and 6 to be shutdown by the end of 2019. In the event of an OTC Policy compliance date extension for Alamitos Unit 3, AES, the owner and operator of Alamitos, would need to submit an application to the South Coast Air Quality Management District (South Coast AQMD) to modify the permit to reflect the updated boiler shutdown date in relation to startup of the new gas turbines and ensure compliance with applicable rules and regulations. In addition, AES would need to modify the retirement plan for the permanent shutdown of boiler Unit 3 that was

submitted to South Coast AQMD. Modification of the Title V permit will require coordination with U.S. EPA Region 9 and may require a public notice. Amending the Title V permit typically requires six months to one year (or possibly more) to complete, depending on the nature of the modification. Alamitos boiler Units 4 and 5 are not currently identified as part of any repower and/or replacement project in South Coast AQMD, and are therefore able to operate under the conditions of the existing permit should an OTC compliance date extension be approved for these units.

### **5.3 Regulatory Requirements for Other OTC Power Plants**

The water quality and air quality permits and regulatory documents would need to be considered for any power plant identified for an OTC Policy compliance date extension in order to provide local or system-wide grid reliability.

## **6 Alternatives**

### **6.1 Alternative 1: No Action**

This option poses potential local and significant system-wide grid reliability risk.

### **6.2 Alternative 2: Mitigate local reliability needs only. Extend OTC Policy compliance date for Alamitos.**

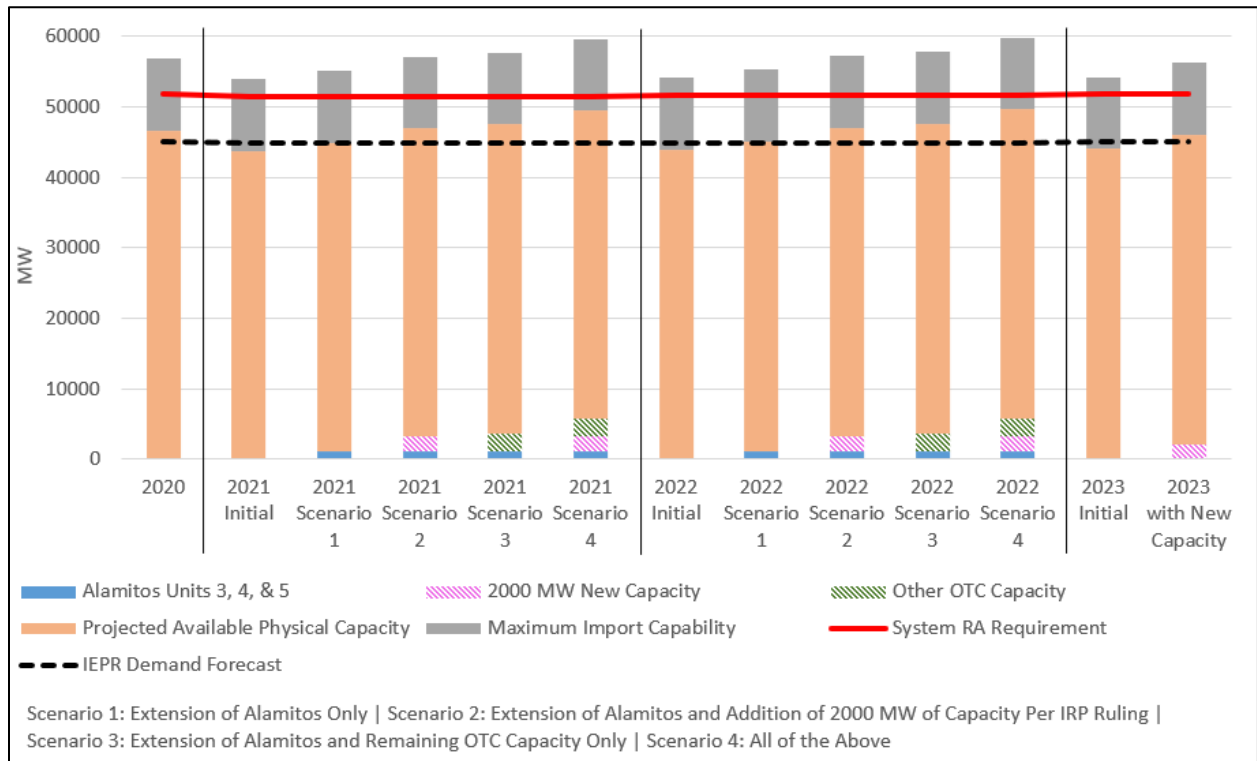
Alternative 2 would extend up to 1,163 MW of capacity at some combination of Alamitos Units 3, 4, and 5 through 2022, which would address the needs identified in CAISO's sensitivity analyses to provide local grid reliability. It would also partially address the system-wide grid reliability needs discussed above.

### **6.3 Alternative 3: Mitigate local and system-wide reliability needs. Extend OTC Policy compliance dates for Alamitos plus one or more additional power plant.**

Alternative 3 would extend, for two years or more, but no longer than necessary to ensure grid reliability, up to 1,163 MW of capacity from some combination of Alamitos Units 3, 4, and 5 and some portion of the remaining 2,579 MW of OTC capacity that is scheduled to retire on December 31, 2020. This remaining capacity is produced by Huntington Beach Generating Station Unit 2 (215 MW), Ormond Beach Generating Station Units 1 and 2 (1,516 MW), and Redondo Beach Generating Station Units 5, 6, and 8 (848 MW).

Figure 2 below presents projected available capacity for 2020 through 2023 – using the same numbers as in Figure 1 above – alongside modified projections that consider various procurement scenarios. These scenarios include 1,163 MW from Alamitos Units 3, 4, and 5 in 2021 and 2022; 2,579 MW in 2021 and 2022 from the other three OTC power plants currently scheduled to retire on December 31, 2020; and 2,000 MW of new capacity under consideration in the IRP Ruling. It is unlikely that all the 2,579 MW from the other three OTC power plants will be needed to ensure system-wide grid reliability.

**Figure 2: Peak Load Forecast, RA Requirements, and Available Capacity in the CAISO BAA, Including Various Procurement Scenarios**



One advantage of extending OTC resources is that could help mitigate any shortfall in CPUC-directed procurement of new peak capacity by summer 2021 and remain online for the short period of time necessary to procure any additional resources. Furthermore, as Table 3 of the 2019 SACCWIS Report indicates, the OTC resources tend to have low capacity factors. This is partly because OTC resources have high marginal costs and therefore operate primarily during periods of very high demand, when electricity prices exceed those costs. In retaining OTC resources to meet system capacity needs, SACCWIS does not anticipate that significantly more ocean water would run through OTC power plants in 2021 and 2022 than in recent years. Put differently, the OTC power plants' impact on air quality, water quality, and marine life will continue to be mitigated not only by permitting requirements and regulatory oversight, but also by electricity market economics.

#### 6.4 Future Refinements

Actual local capacity needs would depend on the 2021 local capacity technical study requirements developed by the CAISO early in 2020, or, possibly, by the need for system capacity determined by the CPUC.

Comments on the IRP Ruling at the CPUC were due on July 22, 2019, and reply comments were due August 12, 2019. SACCWIS expects to inform the State Water Board as comments and additional analyses become available through this process.

## 6.5 Recommendation: Alternative 3

Considering the local and system-wide grid reliability needs discussed above, SACCWIS recommends that the State Water Board pursue Alternative 3. SACCWIS recommends extending the OTC Policy compliance date for Alamos Units 3, 4, and 5 by two years or more, but no longer than necessary, to ensure local grid reliability and help improve system-wide grid reliability. SACCWIS intends to provide a recommendation to the State Water Board in late 2019 to extend the OTC Policy compliance date by two or more years, but no longer than necessary, for Alamos Units 3, 4, and 5 and some portion of the 2,579 MW of capacity generated by Huntington Beach, Ormond Beach, and Redondo Beach generating stations to ensure system-wide grid reliability. This recommendation will be based on additional analysis that considers air and water permitting requirements, capabilities of the existing OTC resources (including the potential to meet multiple RA needs or to provide various electrical services to CAISO), further analysis and stakeholder input in the CPUC IRP proceeding, and other relevant information.

## 7 Conclusions

In the past two SACCWIS report cycles, SACCWIS did not recommend a change in compliance dates for OTC power plants, but clearly signaled that such a recommendation might be forthcoming as various uncertainties were resolved.

Based on the CPUC's findings and discussion in its Rulemaking 16-02-0007, the change in ELCC definitions for solar and wind renewables from Decision D.19-06-026, and the best available information at this time, SACCWIS recommends the State Water Board defer the compliance dates for Alamos Units 3, 4, and 5 and one or more additional OTC resources until December 31, 2022 for two or more years, but no longer than necessary, to ensure local and system-wide grid reliability. SACCWIS will update the State Water Board and, if necessary, provide any revisions to this recommendation as additional information, analysis, and party recommendations within the RA and IRP Rulemaking proceedings when the CPUC Commission's decision becomes available in fall 2019.

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<sup>1</sup> SACCWIS includes representatives from the California Energy Commission, California Public Utilities Commission, California Coastal Commission, California State Lands Commission, California Air Resources Board, the California Independent System Operator, and the State Water Resources Control Board.

<sup>2</sup> The 2017 Once-Through Cooling Policy.

[https://www.waterboards.ca.gov/water\\_issues/programs/ocean/cwa316/policy.shtml#amendments](https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/policy.shtml#amendments)

<sup>3</sup> <http://www.caiso.com/Documents/2021LimitedLocalCapacityTechnicalStudyReport.pdf>

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<sup>4</sup> Under the Resource Adequacy program, the CPUC requires jurisdictional load-servicing entities to procure resources to meet their load requirements.

<sup>5</sup> June 20, 2019 Ruling in R.16-02-007, available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M302/K942/302942332.PDF>.

<sup>6</sup> Alamitos, Huntington Beach, Ormond Beach, and Redondo Beach Generating Stations are expected to retire by December 31, 2020.

<sup>7</sup> “Net load” is the demand that remains to be served after accounting for the production of non-dispatchable wind and solar resources. “Net load peak” is the peak value of net load, which typically occurs in the evening hours, as the sun sets and solar production drops off.

<sup>8</sup> CEC Staff Report: Mitigation Options for Contingencies Threatening Southern California Electric Reliability, August 2016 describing the OTC compliance date deferral mitigation measure.  
[https://efiling.energy.ca.gov/URLRedirectPage.aspx?TN=TN212836\\_20160818T131005\\_Staff\\_Report\\_Mitigation\\_Options\\_for\\_Contingencies\\_Threatening\\_S.pdf](https://efiling.energy.ca.gov/URLRedirectPage.aspx?TN=TN212836_20160818T131005_Staff_Report_Mitigation_Options_for_Contingencies_Threatening_S.pdf).

<sup>9</sup> The Lugo-Mohave and Lugo-Eldorado 500 kV line series capacitors are bypassed while they are being upgraded in 2020 timeframe.

<sup>10</sup> 800 MW represents the approximate difference in load in the SCE service territory between the 2017 IEPR and 2018 IEPR.

<sup>11</sup> 260 MW of this generation was assumed to be retired as part of the Scoping Ruling from the CPUC Long-Term Procurement Plan Track 4 Study (Rulemaking 12-03-014) due to age of the generation before its refurbishment; the other 100 MW generation had mothballed status previously but withdrew its mothball request in Q4 2018 after securing a power contract with SCE.

<sup>12</sup> Page 14, CPUC Assigned Commissioner and Administrative Law Judge Ruling of June 20, 2019, in Rulemaking 16-02-007, Order Instituting Rulemaking to Develop an Electricity Integrated Resource Planning Framework and to Coordinate and Refine Long-Term Procurement Planning Requirements.

<sup>13</sup> Page 15, *ibid*.

<sup>14</sup> See 2018 IEPR, Corrected LSE and BA Tables Mid Baseline Mid AAEE AAPV CEDU2018, Form 1.5b, available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=226461&DocumentContentId=57240>.

<sup>15</sup> June 20, 2019 Ruling in R.16-02-007, pp. 6-13.



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<sup>16</sup> Available capacity is based on September Net Qualifying Capacity (NQC) values, which are regularly updated and are available in the NQC List at <http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx>.

<sup>17</sup> Moss Landing is the only OTC unit that intends to comply with the OTC Policy via Track 2. This analysis assumes that Units 1 and 2 at Moss Landing retain their existing NQC values after Track 2 retrofits are complete.

<sup>18</sup> <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M309/K463/309463502.PDF>.

<sup>19</sup> “Imports” means energy imports into the CAISO BAA, including from out of state and from other areas of California that are not in the CAISO BAA (for example, the Imperial Irrigation District and the Los Angeles Department of Water and Power).

<sup>20</sup> IRP Ruling, pp. 14.

<sup>21</sup> IRP Ruling, pp. 14-15.

<sup>22</sup> IRP Ruling, pp. 15-16.

<sup>23</sup> IRP Ruling, pp. 17.

<sup>24</sup> <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M309/K592/309592361.PDF>.