SACCCWIS
Encina Power Station
2018 Reliability Study Report

SWRCB Meeting
March 21, 2017
Agenda

• Background
• Reliability Analysis
• Alternatives
• Conclusions and recommendations
LA Basin and San Diego Local Capacity Areas
Encina Power Station

- Consists of five steam boiler generating units using once-through cooling and one gas turbine with an aggregate capacity of 964.5 MW

- Encina power station is comprised of:
  - Unit 1 (106 MW)
  - Unit 2 (104 MW)
  - Unit 3 (110 MW)
  - Unit 4 (300 MW)
  - Unit 5 (330 MW)
  - Encina GT (14.5 MW) does not use once-through cooling
NRG Implementation plan

• Retire Encina no later than December 31, 2017 for OTC compliance

• Construct Carlsbad Energy Center Project pursuant to agreement with City of Carlsbad and San Diego Gas and Electric

• Complete Carlsbad Energy Center Project by Fall 2017 ahead of Encina’s OTC compliance date
Regulatory Background

- May 2015 – CPUC approved SDG&E procurement of 500 MW conventional generation and 100 MW preferred resources in Decision D.15-05-051

- July 2015 - CPUC approved SDG&E Power Purchase Tolling Agreement with NRG for 500 MW Carlsbad Energy Center Project (CECP)

- July 2015 - CEC approved amended license for 600 MW CECP (original permit May 2012 for 558 MW plant)

- November 2015 – CEC issued order on rehearing affirming decision approving the amendment. No party appealed the CEC’s decision
Legal Challenges

• December 2015 Intervenors file Applications for Rehearing with the California Court of Appeal appealing the CPUC's decision

• December 2016 - First District Court of Appeals affirms CPUC decision

• January 9, 2017 – Deadline for CA Supreme Court review – no request received
Construction Timeline

• May - Nov 2015 - Original expected on-line date Fall 2017

• Feb - Nov 2016 – NRG 10-K/10-Q filings indicate Winter 2018

• January 2017 – NRG communicated to inter-agency working group
  – 21 month construction expected to begin April 2017
  – Unit 1 to be permanently shut down by April 2017
  – New expected on-line date of Q4 2018
Reliability Analysis

• ISO Local Capacity Technical Analyses (LCTA)
  – 2017 LCTA April 29, 2016
  – 2018 LCTA will be completed by May 1, 2017

• Interim 2018 Analysis – January 16, 2017
  – Relied upon 2017 LCTA base assumptions, processes and criteria
  – Appended to include updated resource, infrastructure information,
    and peak load forecast to include improved rooftop PV impacts
  – Not for Resource Adequacy (RA) procurement

• Study area definition - San Diego and LA Basin areas have
  been studied together as a single region since SONGS closure

• Aliso Canyon uncertainty – two scenarios
# Study Results

<table>
<thead>
<tr>
<th>Study scenario</th>
<th>LA Basin LCR (MW)</th>
<th>San Diego subarea LCR (MW)</th>
<th>Encina Generation (MW)</th>
<th>Encina required?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario 1: Aliso Canyon Gas Storage Unconstrained Scenario</strong></td>
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<tr>
<td>Most critical thermal loading concerns in the San Diego subarea</td>
<td>7,383</td>
<td>2,886</td>
<td>560</td>
<td>Yes</td>
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<tr>
<td><strong>Scenario 2: Aliso Canyon Gas Storage Constrained Scenario</strong></td>
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<td>Most critical thermal loading concerns in the LA Basin</td>
<td>7,079</td>
<td>3,185</td>
<td>859</td>
<td>Yes</td>
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</tbody>
</table>
Alternatives

• Alternative 1: Do nothing

• Alternative 2: Fast-track preferred options in-service

• Alternative 3: Stop-gap generation

• Alternative 4: New transmission
Conclusion and Recommendations

- ISO reliability analysis shows need for capacity at Encina site in summer 2018
- Legal delays have caused Carlsbad online date to slip to Q4 2018
- Encina Unit 1 is anticipated to retire by March 31, 2017 to make way for 21 month Carlsbad construction
- SACCWIS recommends the SWRCB defer the compliance dates for Encina units 2-5 until December 31, 2018 to maintain grid reliability
- SACCWIS will update the SWRCB and if necessary provide any revisions to this recommendation when the CAISO’s 2018 LCTA results become available.