SACCOVIS
Encina Power Station
2018 Reliability Study Report

Prepared by the Inter-Agency Working Group

SACCOVIS Meeting
February 23, 2017
Agenda

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

- Big Creek/Ventura
- Mandalay
- Ormond Beach
- El Segundo
- Redondo Beach
- Alamitos
- SONGS
- Huntington Beach
- San Diego
- Encina

- Power Plant
- Local Reliability Areas (generalized)
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>
<td></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>
</tr>
<tr>
<td><strong>Scenario 2: Aliso Canyon Gas Storage Constrained Scenario</strong></td>
<td></td>
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<tr>
<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>
</tr>
</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.
Next Steps

• SACCWIS to present report as informational agenda item to SWRCB on March 21, 2017

• Anticipate Staff Report and Proposed Amendment May 2017

• Work through amendment process with potential SWRCB Hearing/Adoption August 2017

• Office of Administrative Law Modification by early December 2017