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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
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APPLICATION FOR CERFITICATION FOR THE:

ALAMITOS ENERGY CENTER

Docket No. 13-AFC-01

ENERGY COMMISSION STAFF REPLY BRIEF: EVIDENTIARY HEARING PART 2

At the conclusion of the Alamitos Energy Center (AEC) evidentiary hearing covering the Final Staff Assessment, Part 2 (FSA2), the assigned Committee provided an opportunity for parties to file reply briefs. Staff offers the following discussion of key issues raised by the parties in their opening briefs.

Introduction

In its opening brief, the Los Cerritos Wetlands Trust (Trust) made the following primary arguments that the FSA2 is insufficient and the record inadequate for a decision on the application:

1) The Trust changes course and, rather than recommending the project be limited to the 640 MW facility, as previously argued (Exh 3069, pp. 18-19), now champions a 400 MW simple-cycle facility with a 200 MW battery storage component. This arrangement according to the Trust would meet the basic objectives of the project (Trust's Opening Brief, pp. 1-2).

2) For the first time, the Trust argues the AEC project is actually a "Multiple Facility Site", and therefore the Commission's review of the AEC project has been somehow defective or otherwise inconsistent with the requirements of the Warren-Alquist Act, especially as related to the 12-year demand forecast (Trust's Opening Brief, pp. 3-4).

3) The Trust presents a refinement to an earlier erroneous argument that the California Public Utilities Commission's (CPUC) awarding of a 640 MW Power Purchase Agreement (PPA) is a LORS requirement. Now the Trust clarifies that the CPUC's decision is not a LORS, but the decision is in response to existing LORS. It is the laws and regulations the CPUC is enforcing which are the basis for the Commission's required LORS analysis (Trust's Opening Brief, pp. 7-9). Therefore, the Trust argues that that the Commission cannot approve the project or must override the LORS if it does approve the proposed project (Trust's Opening Brief, p. 7-8).

4) The Trust argues the 640 MW combined-cycle portion of the facility cannot comply with the California Independent System Operator's (CAISO) rapid start up requirements, under tariff 40.3.1.1, and therefore cannot meet the project's grid reliability project objective. The Trust also argues the combined-cycle turbines would emit more air pollution than simple cycle turbines (Trust's Opening Brief, p. 11).

5) The Trust claims the 640 MW combined cycle unit will emit substantially more criteria pollutants and greenhouse gases than the existing Alamitos Units 1-6 (Trust's Opening Brief, p. 16).

6) The Trust states there have been no proposed offsets for the increases in PM10/2.5 and volatile organic compounds (VOCs) emissions caused by the project (Trust's Opening Brief, pp. 16-17), and impacts on wetlands cannot be mitigated with regional offsets (Trust's Opening Brief, pp. 18-19).

Discussion

1) The Trust's proposed 400 MW simple-cycle plus battery storage project is an unnecessary late suggested alternative that has not been sufficiently set forth by the Trust to show its viability and environmental impacts.

The Trust suggests that rather than a 640 MW combined-cycle and 400 MW simple-cycle facility as proposed by the Applicant, the project should be changed to a 400 MW simple-cycle facility, utilizing different types of turbines than the proposed project, along with 200 MW of battery storage (Exh. 3076, pp. 1-2, 17). The Trust puts forth the argument that such a project would be superior as this combination would have lower emissions and meet all the reliability needs for the regional grid (Exh. 3076, pp. 1-2, 17), but does not address the project's primary objectives.

Under California Code of Regulations Title 20 section 1745(d):

> *The proponent of any additional condition, modification, or other provision relating to the manner in which the proposed facility should be designed, sited, and operated in order to protect environmental quality and ensure public health and safety shall have the burden of making a reasonable showing to support the need for and feasibility of the condition, modification, or provision.*

In this case, the Trust is advocating for a different project design, one that appears to o have been only superficially evaluated by the Trust. Most significantly, no air quality modeling analysis has been provided to evidence the impacts from operations of this new configuration, how eliminating the more efficient combined-cycle functionality of the facility will impact operational flexibility, or affect power purchase agreement contractual obligations. There is also lack of any information as to where the additional energy, and its impacts, will occur to not only make up the change to 400 MW of simple-cycle, but also to charge the 200 MW battery system (12/20/16 Transcript, p. 105: 4-9, 16-25; p. 106: 1-3).

The Trust's analysis and conclusions regarding the ability for battery storage to replace a portion of the capacity of the combined cycle is incomplete because they did not address the amount of energy the battery would need to discharge to replace the functionality of the combined cycle.

There are an infinite number of possible configurations that can be argued for, but the driving force in developing any alternative is what significant impact does the alternative lessen when compared to the proposed project (Cal. Code of Regs., tit. 14, § 15126.6, subd. (b); see also Pub. Resources code, § 21002.1, subds. (a), (b); Cal. Code of Regs., tit. 14, § 15002, subd. (a)(3)). In this case, Staff found the proposed AEC project, with recommended mitigation, would not have significant impacts and therefore, Staff did not evaluate a 400 MW simple-cycle plus 200 MW battery storage alternative (Staff Exhibit 2000, Final Staff Assessment, pp. 1-6 to 1-7).

2) Multiple Facility Site referenced in the Public Resources Code does not apply to this project.

For the first time, the Trust raises an argument that this project is a *multiple facility site* and therefore some additional requirements set forth in the Public Resources code have not been met (Trust's Opening Brief, pp. 2-3). The Trust's entire discussion on *multiple facility sites* and the 12-year demand forecast is not relevant to this proceeding. Public Resource Code sections 25502-25518, set forth the Notice of Intent process and the provisions covering *multiple facility sites*. The AEC proceeding is exempt from the requirements of the Notice of Intent under Public Resources Code section 25540.6(a) because AEC is a proposed natural gas plant and is only subject to the Application for Certification process.

3) The Proposed AEC project is not subject to the CPUC's Long Term Procurement Plan (LTPP) decisions which are directed at Investor Owned Utilities (IOUs).

The Trust continues to argue that the CPUC's approval of 640 MW PPA sets the size of the AEC project. Any deviation would require the Commission to make the findings necessary for an override (Trust's Opening Brief, p. 7). In a refinement to the Trust's longstanding position that the PPA approval by the CPUC is binding on the Commission, the Trust acknowledges that it is not the CPUC decision to approve the

PPA that comprises the LORS but "the state laws the CPUC enforces through the loading order that are the LORS" the Commission is required to analyze (Trust's Opening Brief, p. 7).

As an initial matter Decision D14-03-004 cited by the Trust and provided as Exhibit 3020, like all CPUC LTPP decisions, are enforced on IOUs at the point of procurement and not developers at the point of construction. As clearly set forth by the CPUC in decision D14-03-004, the operative language in the LTPP regulatory scheme includes, "utilities" and "procurement" (Exh. 3020, pp. 13-14).

> *The Commission also has a statutory mandate to implement procurement-related policies to protect the environment. Section 454.5(b)(9)(C) [Public Utilities Code] states that utilities must first meet their "unmet resource needs through all available energy efficiency and demand reduction resources that are cost-effective, reliable and feasible." Consistent with this code section, the Commission has held that all utility procurement must be consistent with the Commission's established Loading Order, or prioritization.*
>
> *The Loading Order, first set forth in the Commission's 2003 Energy Action Plan, was presented in the Energy Action Plan II adopted by this Commission and the California Energy Commission (CEC) in October 2005. The Loading Order, which has been reiterated in multiple forums (including D.12-01-033 in the predecessor to this docket, and D.13-02-015 in this docket), requires the utilities to procure resources in a specific order…*
>
> *In the 2008 Energy Action Plan Update at 20, the Commission further interpreted this directive to mean that the IOUs are obligated to follow the Loading Order on an ongoing basis. Once procurement targets are achieved for preferred resources, the IOUs are not relieved of their duty to follow the Loading Order. In D.07-12-052 at 12, the Commission stated that once demand response and energy efficiency targets are reached, "the utility is to procure renewable generation to the fullest extent possible." The obligation to procure resources according to the Loading Order is ongoing* (Exh. 3020, pp. 13-15).

The approved procurement set forth in D14-03-004 regulates actions by IOUs in seeking contracts for energy and does not and cannot set limits on specific proposed power plant facility sizes as the licensing of thermal power plants 50 MW or larger is

within the exclusive jurisdiction of the Energy Commission (Public Resources Code section 25500). Therefore, any argument that the AEC project cannot be licensed beyond its current 640 MW PPA because of CPUC decisions is incorrect.

The Trust makes vague reference to underlying state laws being enforced by the CPUC (Trust's Opening Brief, p. 7). Footnote 30 of the Trust's Opening Brief cites AB 32 and SB 32 as examples of the state laws. As fully discussed in Staff's opening brief, under AB 32, and implementation programs developed by the Air Resources Board (ARB), AEC would be required to participate in California's GHG cap-and-trade program. Participants such as AEC are required to report their GHG emissions and to obtain GHG emissions allowances (and offsets) for those reported emissions by purchasing allowances from the capped market and offsets from outside the AB 32 program. Thus, AEC, as a GHG cap-and-trade participant, would be consistent with California's AB 32 program (Exh. 2014, pp. 4.1-178, 4.1-183).

Conditions of Certification **AQ-E6**, **AQ-E7**, **AQ-E8**, **AQ-E9**, and **AQ-E10** ensure the project owner tracks GHG emissions from project operations to meet AB 32 and federal reporting requirements (Exh. 2014, p. 4.1-186).

SB 32 does not mandate any obligations on the proposed AEC facility, but imposed requirements on ARB:

> *In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030* (Health and Safety Code section 38566).

Presumably ARB would integrate the accelerated GHG reduction requirements into its existing programs such as the cap-and-trade program. AEC's compliance with AB 32

would also then entail compliance with SB 32. Regardless of whether AB 32 is considered a standalone LORS or, as the Trust claims, a LORS the CPUC enforces through its decisions, Staff found the proposed AEC project complied with AB 32 and other relevant LORS such as SB 1368 and the Commission's Avenal precedential decision (Exh. 2014, pp. 4.1-178, 4.1-183, 4.1-184, 4.1-195; 12/20/16 Transcript, p.101: 25; p.102: 1-25; p. 103: 1-20)

4) The 640 MW combined-cycle portion of the facility does comply with the California Independent System Operator's (CAISO) rapid start up requirements under Tariff 40.3.1.1 and emits more air pollution than would simple-cycle turbines.

The Applicant's opening brief filed on January 9, 2017, details the technical capabilities of the proposed facility equipment to meet rapid start up requirements. (See also 12/20/16 Transcript, p. 76: 15-25; p. 77: 1-21; p. 79: 15-25; p. 80: 1-21)

For purposes of assessing the rapid start up capabilities of the AEC it is important to define whether one is talking about start up time to reach a certain level of power production or the time for pollution equipment to be fully activated (12/20/16 Transcripts p. 74: 2-25; p. 75: 1-9).

The cold start, warm start and hot start events referred to on page 28 of the Air Quality FSA2 section refer to emission rates and not megawatts. Base load operating rates refer to emission rates applied for emission calculation purposes when the turbines are not in startup or shutdown modes. The Air Quality analysis does not need to examine grid reliability and application of fast start energy delivery (See FSA part 1, sections: Facility Design and Reliability for more details on facility equipment performance).

The Trust asserts that the inability of the combined cycle unit to reach full load would result in elevated start up emissions (Trusts Opening Brief, p. 11). Staff notes that

commissioning, start up, and normal emission rates were fully evaluated for impacts. Further, these emissions, regardless of operations mode, are totaled cumulatively and fully offset (for those that require offsets). Nothing about start up emission rates are unexpected or unaccounted. And as discussed in the FSA Part 2, start up emission rates need not be elevated for all air pollutants. Emission rates of VOC, nitrogen oxides (NOx) and carbon monoxide (CO) are assumed to be elevated while the post-combustion catalysts are warming to their operating temperature, but emissions of these pollutants are not necessarily elevated over the entire time interval defined for a startup or shut down event. Allowable emissions rates are averaged over defined time periods. Emission rates of PM10/2.5, sulfur oxides (SOx) and carbon dioxide equivalent (CO_2e) are expected to be the same or lower during start up or shut down events than during normal operating periods because they are directly proportional to fuel consumption rate (Exh. 2014, pp. 4.7-25 to 4.7-37).

5) The Trust's claim that the 640 MW combined cycle unit will emit substantially more criteria pollutants and greenhouse gases than the existing Alamitos Units 1-6 is not accurate and based on an inappropriate comparison (Trusts Opening Brief, p. 16).

In its opening brief the Trust included Table 1 which compares emissions from the existing units 1-6 to the proposed AEC combined-cycle unit.

The table presented by the Trust is misleading and of little value because it is comparing two different metrics, the actual reported emissions from the Alamitos Generating Station (AGS) units 1-6 to the potential to emit (PTE) for the AEC. The PTE for a facility represents the maximum emissions that the facility is not permitted to exceed, not the actual quantities of emissions, which are much lower. For example, the NOx PTE for AGS units 1-6 is 635 tons/year (FDOC, Table 13), while the reported actual emissions total is 47.5 tons/year (FDOC, Table 14). The PTE for the AEC was

calculated based on conservative assumptions, operating scenarios and emission factors, documented in the SCAQMD FDOC and Energy Commission FSA Part 2.

Notwithstanding, a full impact analysis and mitigation package for the AEC was presented in the Energy Commission FSA Part 2 (Exh 2014, pp. 4.7-38 to 4.7-52). The comprehensive impact analysis examined the impacts from the entire proposed project including construction, commissioning, and operation phases of the project resulting in recommended mitigation as set forth in the comprehensive set of Conditions of Certification (Exh 2014, pp. 4.7-52 to 4.7-61, see also list of Conditions). Staff notes that neither permitted nor actual AGS emissions were offset while AEC will be appropriately offset and mitigated (Exh 2014, pp. 4.7-52 to 4.7-61, see also list of Conditions).

Cumulative impacts and overlap scenarios were included in the analysis. The impact analysis from the operation phase was correctly based on the entire potential to emit for the proposed AEC and not just a potential or theoretical emission increase from the existing AGS boiler operations and the combined-cycle gas turbine operations (Exh. 2014, pp. 4.7-67 to 4.7-71).

Lastly, the emissions listed in the Trust's table for the AEC proposed combined–cycle unit are not consistent, and higher, than the emissions presented in the SCAQMD FDOC and the FSA Part 2 (Trusts Opening Brief, p16; Exh. 2014, pp. 4.7-35 and 4.7-36).

6) The Trust states there have been no proposed offsets for the increases in PM10/2.5 and volatile organic compounds (VOCs) emissions caused by the project (Trust's Opening Brief, pp. 16-17), and impacts on wetlands cannot be mitigated with regional offsets (Trust's Opening Brief, pp. 18-19).

The mitigation proposed for operation of the AEC includes mitigation for the project's NOx, VOC, SOx and PM10 based on the facility PTE (Exh. 2014, pp. 4.7-52 to 4.7-61).

Proposed mitigation for PM10 and VOC includes offsets secured from the SCAQMD internal accounts according to SCAQMD Rule 1304(a)(2). Under Rule 1304(a)(2), the project is exempt from providing offsets directly for the combined-cycle and simple-cycle turbines (Exh. 2014, pp. 4.7-54 to 4.7-56, 4.7-89). Rule 1304(a)(2) is included in the U.S. Environmental Protection Agency approved rule in the SCAMD State Implementation Plant (SIP). A complete demonstration of the use of Rule 1304(a)(2) was provided in the SCAQMD FDOC.

Mitigation differs as to whether the impact is from particulate matter derived from gaseous sources, which has a very different dispersion pattern than larger particulate matter referred to as 'dust', which is expected from fugitive sources of construction or demolition. Both types of particulate matter were analyzed for regional and localized impacts, as appropriate, and recommended mitigation was developed to address different types of impacts (12/20/16 Transcripts, p. 98: 16-25; p. 99: 1-25; p. 100: 1-24; Exh. 2014, pp. 49-53).

As noted in the Biological Resources section of the FSA part 1, with the recommended mitigation, there are no significant impacts to nearby wetlands from the construction and operations of the AEC facility (Exh. 2000, pp. 4.2-1, 4.2-28 to 4.2-37).

Condition AQ-SC1

In its opening brief filed on January 9, 2017, the Applicant suggested some edits to **AQ-SC1**. Staff agrees in principle to the suggested change but makes the following additional edits to ensure there is no gap in the retention of an Air Quality Construction/Demolition Mitigation Manger and that corresponding changes are made to the Verification. Staff proposes the following edits to **AQ-SC1**:

AQ-SC1 Air Quality Construction/Demolition Mitigation Manager (AQCMM): The project owner shall designate and ~~retain an~~ have on-site during construction/demolition activities an AQCMM who shall be responsible for directing and documenting compliance with **AQ-SC3**, **AQSC4,** and **AQ-SC5** for the entire project site and linear facility construction/demolition. The project owner may elect to assign one or more alternate AQCMM as well. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction/demolition activities as warranted by applicable construction/demolition mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. ~~The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM)~~.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the first on-site AQCMM to be assigned and all AQCMM Delegates. The AQCMM and all Delegates must be approved by the CPM before the start of ground disturbance. An AQCMM could be replaced after ground disturbance if the replacement AQCMM has been approved by the CPM.

Conclusion

The proposed AEC project, with recommended mitigation, would result in no significant environmental impacts or inconsistency with existing LORS. The hearing record is adequate for a decision to be reached on the application.

Date: January 17, 2017

Respectfully submitted,

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