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Alamitos Energy Center

(13-AFC-01)

Applicant's Rebuttal Testimony, Part 2

Submitted to

California Energy Commission

Prepared on behalf of

AES Alamitos Energy, LLC

December 19, 2016

Air Quality and Public Health

REBUTTAL TESTIMONY OF STEPHEN O' KANE AND JERRY SALAMY

Q. Please state your name and business affiliation.

A. My name is Stephen O'Kane, and I am the Vice President of AES Alamitos Energy, LLC.

A. My name is Jerry Salamy and I am the Program Manager with CH2M HILL Engineers, Inc.

Q. Please describe your professional experience and qualifications in connection to your rebuttal testimony herein.

A. Our qualifications are set forth in Appendix A to the Applicant's Opening Testimony filed on December 16, 2016.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of our testimony is to rebut the testimony of Los Cerritos Wetlands Land Trust ("Trust") filed on December 16, 2016.

GHG EMISSIONS

Q. In his testimony at page 2, Mr. Powers states that the AEC combined cycle block is projected to emit substantially more GHGs than the existing coastal steam boiler plants in the LA Basin in 2014. Have you reviewed this claim?

A. Yes.

Q. And what were your findings?

A. First, Mr. Powers is citing arguments from a legal brief that he submitted in a CPUC proceeding. The CPUC Decision did not adopt these arguments, and we can find no other source that supports Mr. Power's CPUC arguments.

Q. Do you have other concerns with Mr. Power's CPUC arguments?

A. Yes. To begin, his comparison assumes a four percent (4%) capacity factor for the once-through cooling (OTC) units versus a seventy-five percent (75%) capacity factor for the new combined cycle unit at AEC. In other words, Mr. Powers has to assume that the new combined cycle units run eighteen times more than the old OTC units to create the numbers he cites in his arguments. In addition, Mr. Powers does not cite the primary source for the GHG emissions data for the "aging merchant coastal steam boiler plants in the LA Basin in 2014" that he used. Therefore, these values cannot be independently verified.

Q. What about the electricity produced by Mr. Powers' assumptions?

A. Mr. Power's CPUC brief also notes that the new, more efficient combined cycle powerplants will generate five times more electricity. Mr. Power's CPUC brief states:

> "The two CCTGs will produce more than five times the amount of electricity collectively produced by the 4,090 MW of OTC units in 2014." (Exhibit 214861 at pages 7-8.)

Mr. Power's CPUC brief admits that the new units will produce five times the amount of electricity. This means the GHG emissions from the new units are much less on a per megawatt basis from the existing units. The GHGs emission rate on a per megawatt basis is important, in part, because GHG's are a global pollutant, with no local effects and no direct human health impacts.

Mr. Powers also fails to note that the older these steam generating boiler units require extended start up periods where GHGs are emitted and little or no megawatts are generated.

START UP RATE FOR THE COMBINED CYCLE GAS TURBINES

Q. Have you reviewed Mr. Power's testimony that claims that the Siemens units are faster starting than the AEC units (TN# 214853, p. 4)?

A. Yes I have. Mr. Powers' testimony is incorrect.

The AEC 7FA CCGT units are actually as fast, if not faster, in terms of ramp rate of MW per minute, as the Siemens units. Both the Siemens and General Electric combustion turbine designs can reach full output in 10 minutes. It is the steam cycle (and emission control equipment) that require additional time to complete the startup process. This is the same for either the Siemens Flex Plant or the AEC CCGT design. In addition, the AEC simple cycle units can also meet a 10 minute start time to full load.

Mr. Powers has confused start time defined for the air quality analysis with the start time for purposes of electrical generation. The air quality start up emission estimates focuses on the time required for the emission control systems to warm up (30 minutes for a warm/hot start and 60 minutes for a cold start) sufficiently for the required emission control levels to be achieved and not the electrical output.

Q. On page 4 of the Trust's testimony, the Trust asserts that the combined-cycle generating units of the AEC do not meet the "'less than 30 minute' timeline to full power that

defines the term fast start as used by the CPUC and the CAISO." Is that assertion correct?

A. First, the source of the Trust's "less than 30 minutes" definition" is not clear.

Second, as a factual matter, the Trust's assertions about the capabilities of the AEC's combined-cycle generating units are incorrect. Both the simple-cycle and combined-cycle gas turbine generating units can achieve full power within 10 minutes. The time for the steam generator unit on the combined-cycle unit to achieve full load depends on the temperature of the steam system prior to a start. A cold start of the steam system will take 45 to 60 minutes for the steam generator to synchronize with the electrical grid and come online at minimum power output. Reaching full power on the steam generator, depends on ambient conditions and the associated start curve of the steam turbine associated with those conditions. Like the Siemens Flex plant described by Mr. Powers, the AEC CCGT also utilizes an auxiliary steam boiler to maintain seals in the steam turbine, which allows the steam generator to be synchronized with the electrical grid and online at minimum power output faster than conventional non-fast start CCGT units.

Third, we note that the CAISO Tariff defines "Fast Start Unit" as "A Generating Unit that has a Start-Up Time less than two hours and can be committed in the [Fifteen Minute Market] and [Short-Term Unit Commitment]."

DEMOLITION OF THE EXISTING ALAMITOS GENERATING STATION

Q. Page 18 of the Trust's testimony states, "The Applicant has refused to supply a plan and timeline for demolition of AGS and it is impossible to know how far into the future demolition may occur." Are there plans for the demolition of the Alamitos Generating Station ("AGS")?

A. No, there are no plans for the possible, future demolition of the existing AGS.

While the memorandum of understanding with the City of Long Beach provides certainty to the City that the AGS will be demolished at some point in the future, the scope, extent, and schedule for demolition is unknown and unknowable. However, at this point, the scope, extent, and schedule for future possible demolition of the existing AGS are speculative.

Q. Are there any other factors beyond the Applicant's control that may affect if, when and how demolition could occur?

A. Yes. As part of the ongoing phase out of once-through-cooling ("OTC") units, the existing AGS cannot be removed from service, let alone demolished, until the State Water Resources Control Board ("SWRCB"), California Independent System Operator ("CAISO"), and California Public Utilities Commission ("CPUC") confirm that the units are no longer needed for electric reliability in Southern California.

Q. Can you help clarify the distinction between "decommissioning" and "demolition" of the existing AGS?

A. Yes. "Decommissioning" means that the existing AGS units will no longer be operating. Demolition means the removal of the existing AGS units.

Q. Is the AEC located on a different site than the existing AGS?

A. Yes. The AEC will be constructed on an approximately 21-acre site within the larger 71.1-acre property of the existing AGS.

Q. Can you clarify whether there will be any removal of existing facilities as part of construction of the AEC?

A. Yes. A portion of the AEC will occupy land formerly used for AGS Unit 7 (a retired turbine peaking unit). The generating unit and some of the related facilities for former Unit 7 have been decommissioned, salvaged, and removed from the site. However some components of the balance of plant for former Unit 7's remain on-site, including buildings, foundations and balance of equipment including underground water, fuel and other lines (referred to in the Supplemental AFC as the "former Unit 7's remaining components") and fuel tank. These buildings and equipment along with two retention basins and two small maintenance shops will be demolished and removed from the site as part of the site preparation activities for the AEC.

There is more than a "skeletal description" of what demolition of AGS Unit 7 will entail. The potential impacts of the removal of former Unit 7's remaining components have been examined thoroughly in all disciplines, including Air Quality and Public Health.

Q. Does this conclude your Rebuttal Testimony?

A. Yes.

Declarations

DECLARATION OF
STEPHEN O'KANE

I, Stephen O'Kane, declare as follows:

1. I am presently employed by AES Alamitos Energy, LLC as a Vice President.

2. A copy of my professional qualifications and experience are attached hereto and incorporated herein by reference.

3. The testimony on Project Description, Air Quality, and Public Health for the Alamitos Energy Center project (13-AFC-01) was prepared either by me or under my supervision, and is based on my independent analysis, data from reliable sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed herein.

5. I am personally familiar with the facts and conclusions presented in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 12/19/16

Signed: 

DECLARATION OF
Jerry Salamy

I, Jerry Salamy, declare as follows:

1. I am presently employed by CH2M HILL as Principal Project Manager.

2. A copy of my professional qualifications and experience are attached hereto and incorporated herein by reference.

3. The testimony on Air Quality and Public Health for the Alamitos Energy Center project (13-AFC-01) was prepared either by me or under my supervision, and is based on my independent analysis, data from reliable sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed herein.

5. I am personally familiar with the facts and conclusions presented in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 12-19-16 Signed: