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Technical Area: Air Quality
Author: William Walters

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 1

BACKGROUND

Existing Unit Permits

In order to complete its review of the two new gas turbine units at the Riverside Energy Resource Center (RERC 3&4) site, and adequately discuss laws, ordinances, regulations, and standards (LORS) compliance, staff needs a copy of the existing two units' South Coast Air Quality Management District (SCAQMD) permits.

DATA REQUEST

1. Please provide a copy of the SCAQMD permits for the RERC 1&2.

RESPONSE

1. A copy of the current SCAQMD permit for the RERC is attached (Air Quality Attachment 1).

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 2 & 3

BACKGROUND

Existing Unit Actual Emissions

In order to complete its review of the two additional gas turbine units at the RERC site, and adequately determine mitigation requirements, staff needs to understand the actual source tested emissions profile for the existing RERC 1&2. Additionally, in order to properly discuss expected operations, including the expected seasonality of operations and emissions, staff needs information on the actual operating profile of the existing RERC Units 1&2.

DATA REQUEST

2. Please provide a summary of the Continuous Emissions Monitoring System (CEMS) NOx and CO data and source test data for VOC and PM10 for the existing turbines, by year of operation, in the following formats:

    a. Emissions in pounds per hour (normal operation, and startup and shutdown where available).

    b. Emissions in parts per million (ppm) concentration (except PM10).

    c. Emissions per MWh (net generation basis) on an annual basis for 2006 and 2007.

3. Please provide the monthly hours of operation and monthly net generation for RERC 1&2 for 2006 and 2007.

RESPONSE

2. CEMS NO_x and CO data are provided in the attached ZIP file (Air Quality Attachment 2). Source emissions test reports for VOC and PM emissions are also attached (Air Quality Attachment 3). Included with the source test reports is one recent test report compiled by SCAQMD testing staff. The attached reports demonstrate that upon completion of commissioning, RERC 1&2 have been in compliance with BACT, applicable rules and permit conditions. Test data also demonstrate that RERC 1&2 turbines, which are essentially identical to RERC 3&4 are capable of complying with the recently established Rule 1309.1 emission standards for access to priority reserve PM10 emission credits.

3. Monthly operating hours and net generation are provided in the attached ZIP file (Air Quality Attachment 2).

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 4

BACKGROUND

SCR Catalyst Poisoning

Page 2-9 of the application notes the turbine manufacturer is concerned about sodium poisoning the catalyst in the Selective Catalytic Reduction (SCR) unit. Staff understands that fuels with high soluble sodium contents such as biomass can cause SCR poisoning; however, staff is not sure how significant sodium poisoning could occur in gas turbines fired on pipeline quality natural gas. Staff needs clarification of this issue.

DATA REQUEST

4. Please describe the basis of the concern for sodium poisoning of the SCR catalyst.

RESPONSE

4. The RERC 3&4 project team became aware of this change during contract negotiations with General Electric (GE) for supply of the gas turbines. Investigation into GE's reasons for the change produced the following final response from GE:

> In the 2003-2004 timeframe there were issues associated with SCR premature performance degradation (inability to maintain design emissions: NOx / NH3 slip thru warranty period) at some LM6000 sites with GE-supplied SCRs. GE conducted detailed investigation which included catalyst contaminant analysis and SCR exhaust temp / flow and NH3/NOx distribution evaluation. In general the SCR catalyst was found to have significant amounts of sodium poisoning which was determined to be the root cause of the performance decline. Mal-distribution (uneven distribution of flow) was also found to be a contributing factor.
>
> GE also conducted various tests in an attempt to identify the source of the sodium contamination. The results of the tests were inconclusive and the source of the sodium was never isolated. However, aqueous ammonia supply and / or the ambient air were determined to be the most likely source(s) of the contamination.
>
> GE has not been notified of any SCR performance degradation issues on GE-supplied equipment since 2003/2004 timeframe.

Riverside Energy Resource Center Units 3&4
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Data Request 5, 6 & 7

BACKGROUND

Operations Mitigation

The applicant has indicated that PM10 offsets will be obtained by buying Priority Reserve Credits (PRCs) as regulated by SCAQMD District Rule 1309.1. PRCs for Electrical Generating Facilities (EGFs) are available for sale to the first 2700 MW of permitted generation that request use of these credits. Considering the number of projects currently under review by SCAQMD, a total that is well above 2700 MW, staff is concerned whether PRCs will be available by the time this project's permit application is processed by SCAQMD. Additionally, while the application notes an expected cost for the purchase of PRCs ($3.3 million) it does not provide a specific accounting of the amount of PRCs that would be needed for the project. Staff needs additional information regarding the quantity of PRCs needed for the project and the availability of PRCs for the project.

DATA REQUEST

5. Please provide a calculation, based on appropriate SCAQMD rules, of the quantity of PM10 PRCs that will be required for this project.

6. Please confirm that the project will be able to buy PM10 PRCs from SCAQMD, even if the project is permitted after 2,700 MW of new generation has been permitted by the SCAQMD, and explain the mechanism for obtaining the PRCs in such a case.

7. Presuming that the RERC project would be granted permits after other power plant projects have "consumed" the 2700 MW cap of Rule 1309.1, the only course of action that the applicant can pursue is to petition the District's Governing Board for obtaining PRCs per the provisions in Rule 1309.1. Please provide in detail, the arguments that would be used in if such a this petition is needed.

RESPONSE

5. Offset requirements and methods for PM10 are specified in SCAQMD Rules 1304, 1306 and 1309.1.

   Rule 1304 (d)(5) specifies that because the span of time between permitting of RERC 1&2 and RERC 3&4 exceeds two years, only the increase in offsets from RERC 3&4 must be offset.

   Rule 1306 (b) specifies that emission offsets be based upon the 30-day average emission rate, the average daily emissions over a 30-day period. It

is determined by dividing the maximum allowable emissions over a 30-day period by 30 days.

The workbook and tables provided by RPU with the application contain calculations of the 30-day average PM10 emissions for the project, see table entitled Facility Emissions-Normal Year for a summary (RERC 3&4 SPPA Application Document). The calculations of 30-day emissions reflect RPU's intent to increase emissions at the facility by the equivalent of 150 operating hours per new turbine in any 30-day period, including 20 start/ stop sequences and 10 potential maintenance hours per turbine. The 30-day average emissions increase for PM10 is 29.7 lb/day. The following is the equation used to determine 30-day emissions from the project.

Total potential emission in 30-days =

[(2.74 lb/hr startup hour x 20 startup events) + (3.0 lb/hr shutdown hour x 20 shutdown events) + (3.0 lb/hr maintenance hour x 10 maintenance hours) + (3.0 lb/hr normal operating hour at peak load x 100 normal operating hours)] x 2 turbines

= 889.6 lbs/30-day period

30-day average emissions =

29.7 lbs/30 day period / 30 days/30-day period

= 29.7 average lbs/day

Rule 1309.1 (c)(5)(A) specifies that emissions will be offset at a ratio of 1.2:1.

Offset requirement =

29.7 lbs/day x 1.2

= 36 lbs / day (Offsets are acquired in whole pound increments)

Rule 1309.1 specifies a PM10 offset price of $92,000 per pound, so the total PM10 offset cost is projected to be approximately $3.3 million, unless the cost per credit is adjusted in 2008 to reflect changes in CPI pursuant to Rule 1309.1 (g)(1)(G).

6. AQMD staff indicated that the 2700 mw are queued or allocated at the time that they are issued, not at the time that applications are submitted. Credits are issued when permits are drafted and mitigation fees are paid. AQMD recently advised that no credits have yet been committed and the full 2700 mw allocation is still available. Given RERC's relatively swift permitting

process through both CEC and SCAQMD, combined with RPU's ready access to funds for mitigation, it is anticipated that RERC will likely be eligible to draw from the priority reserve prior to the exhaustion of executive officer discretion.

Although Rule 1309.1 allows executive officer discretion in allocating credits for the first 2700 mw of proposed power development requested, significantly more credits are available to be drawn for power generation facilities. Staff confirmed during rulemaking and in the Rule 1309.1 Staff Report that ample credits exist for all anticipated projects, including RERC 3&4. Furthermore, SCAQMD's determination that ample credits exist reflects assumptions that most peaking plant operating schedules would include many more operating hours that are suggested by RPU.

RPU was very active during the rulemaking process and took significant steps to ensure SCAQMD's awareness of the circumstances surrounding RERC. Many of the changes that were made to the final draft of Rule 1309.1 to allow priority reserve allocation to RERC, were done so in response to SCAQMD's awareness of those circumstances. Should executive officer discretion be exhausted, RPU will draw upon Rule 1309.1 (d)(12) to secure credits through the SCAQMD Governing Board. RPU will remain in communication with SCAQMD permitting management and district counsel to ensure that if Board approval is necessary, scheduling of a hearing will complement anticipated SPPE and SCAQMD permit issuance dates. The Rule 1309.1 staff report confirms that the Priority Reserve contains ample credits to cover all proposed EFG projects, including RERC.

Even if executive officer discretion is exhausted and for any reason the Governing Board is unable to release credits, the project will still be constructed. Annual operations, however, would be limited to ensure that annual facility emissions will remain below PM10 offset thresholds, while maintaining the ability to meet short-term needs during peak demand periods. This alternative operating strategy would be in compliance with all SCAQMD rules, including Regulation XIII – New Source Review.hjk

7. Please consider the following arguments:

    1. Rule 1309.1(d)(12) allows the Board to release additional credits.
    2. RPU worked closely with SCAQMD staff during rulemaking. The final amendments to Rule 1309.1 reflect increased awareness of staff and the SCAQMD Governing Board Stationary Source Committee regarding the critical role that small municipal utilities play, and also of the unique geographic and transmission limitations surrounding the City of Riverside. RPU is not only eligible to draw upon the priority reserve pursuant to 1309.1, but the ability to do so is critical to the safety and welfare of those people who live and work in the City of Riverside.

3. RERC is currently in compliance with all SCAQMD regulations.
4. The proposed project has been demonstrated to be capable of complying with all applicable SCAQMD regulations, including Rule 1309.1, including paragraph (5)(A).
5. Need for RERC
    a. Infrastructure / transmission restrictions
    b. Expected growth and demand will cause power interruptions if RERC is not expanded
    c. RERC is a municipally-owned peaking plant with very limited operations. It is not a merchant plant and is not allowed to operate for significant amounts of time.
    d. RPU is deliberately restricting both monthly and annual operations to demonstrate its commitment to prudent operation of the proposed turbines.
6. RPU consistently strives to ensure that power sources reflect the best fit in terms of both environmental and economic viability, and has been demonstrated to be a leader in energy conservation and alternative energy development. RPU's proposed modification to RERC reflects a thorough analysis of alternative sources of peaking power for the City of Riverside.

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 8 & 9

BACKGROUND

Greenhouse Gas Emissions

The project is proposing the use of a chiller. Staff needs to know if the working fluid of the chiller is a greenhouse gas (GHG), and needs to know the emission potential from equipment leaks for the chiller working fluid if it is a GHG. Additionally, staff needs to know if electrical equipment will use sulfur hexafluoride (SF_6), which is a very potent GHG. Staff needs this information to ensure an accurate estimate of GHG emissions for the project.

Additionally, staff has found an apparent error in the construction GHG emission estimate. The vehicle methane and nitrous oxide emissions are calculated as if the emission factor basis is kg/mile; however, the correct basis using the cited California Climate Action Registry reference is grams/mile.

DATA REQUEST

8. a. Please identify the chiller working fluid, and if it is a listed GHG, please provide an emission estimate from equipment leaks, such as using the existing site chiller as a basis;

   b. provide a carbon dioxide equivalent GHG emission estimate for the chiller, and

   c. provide revise emission data in grams/mile.

9. a. Please identify if any SF_6 containing equipment will be added as part of the project and provide an emission estimate for SF6 leaks; and

   b. provide a carbon dioxide equivalent GHG emission estimate for the new SF6 containing equipment.

RESPONSE

8. a. The global warming potential of HCFC 123 is addressed in “The Four R’s for responsible responses to refrigerant regulation”, James M. Calm P.E., Engineered Systems, October 2003. Figure 2, page 70, of that document shows HCFC123 to have the lowest global warming potential of all of the commonly available refrigerants (based on IPCC, “Climate Change 2001 – The Scientific Basis”).

   The Intergovernmental Panel on Climate Change does not list a CO_2 equivalent for HCFC 123.

The potential for leaks is very low, because the evaporator is always at a negative pressure and the condenser operates at a low positive pressure.

Turbine Air Systems, the cooling tower supplier provided the following leakage estimate based on the Trane manufactured chillers that are used in the system:

> "According to Trane, the published leakage is 0.5% per year."

b. According to the International Programme on Chemical Safety, Document No. 23:

> "The global warming potential relative to carbon dioxide is 300, 93, and 29 over time horizons of 20, 100, and 500 years, respectively (WMO, 1995)."

Further, as published in "Sustainable Development Laws & Policy Publication", March 2007;

> "HCFC 123 has a low Ozone Depletion Potential of 0.02, a low Global Warming Potential of 76, and a short atmospheric life of 1.3 years."

c. CEC correctly identified an error in estimated NH_4 and N_2O emissions from on-road vehicles. The emission factors used in the calculations are denominated as g/mile, but were assumed to be denominated as kg/mile. A revised greenhouse gas inventory is attached showing CO_2 equivalent emissions of 644 metric tons per year, rather than 2,887 metric tons as initially reported (Air Quality Attachment 4).

9. a. The only new equipment to be installed for RERC Unit 3&4 that contains SF_6 are the six 69 kV breakers to be installed in the Unit 3&4 switchyard. These are currently out for bid and plans are for purchase with SF6 detection equipment.

   The balance of the breakers for voltages lower than 69 kV will be vacuum breakers.

   In 2004, the EPA initiated a study of SF_6 containing high voltage breakers leakage rates. The results were published in a paper titled "SF_6 leak rates from High Voltage Circuit Breakers – US EPA Investigates Potential Greenhouse Gas Emissions source". The excerpts below provide a summary of those results.

Table I and Figure II present a summary of the number of circuit breakers, leaking and non-leaking, included in the study.

TABLE I SUMMARY OF LEAKING/NON-LEAKING CIRCUIT BREAKERS					
Year of Manufacture	Leaking CB[a]	Non-Leaking CB[b]	Total CB	Leaking CB/Total CB	Leaking as % of Overall Total Leaking
1998	106	357	463	23%	62%
1999	35	250	285	12%	21%
2000	7	326	333	2%	4%
2001	15	396	411	4%	9%
2002	7	334	341	2%	4%
Total	**170**	**1,663**	**1,833**[c]	**43%**	**100%**

Table II presents emissions data related to the leaking circuit breakers for each year of manufacture. Total emissions of SF_6 are indicated for the leaking circuit breakers manufactured in each year. Total emissions as a percent of total nameplate capacity associated with the leaking circuit breakers are also presented.

TABLE II SF_6 EMISSIONS FROM LEAKING CIRCUIT BREAKERS		
Year Manufactured	Total Emissions (lbs. SF_6)	No. Leaking CBs
1998	2,859	106
1999	302	35
2000	24	7
2001	140	15
2002	81	7
Total	3,407	170

[a] Nameplate capacity of leaking circuit breakers only.

RPU's direct experience with their forty-one (41) SF6 breakers over the last three years has been that they needed to replace 78 lbs of SF_6. The majority of this replacement was associated with one breaker that proved very problematic in solving the leak.

b. In the EPA publication referenced above, it is stated that SF_6 has a GHG equivalence of one unit SF_6 = 23,900 units CO_2.

Technical Area: Air Quality
Author: William Walters

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 10

BACKGROUND

Cooling Tower Emissions

The cooling tower emissions estimated for the new cooling tower for this proposed project are over twenty times lower than for the existing cooling tower even though both use the same water source and have the same level of mist control. The application Appendix 6.1-B data conflicts on whether the recirculating water total dissolved solids (TDS) should be 50 ppm or 50 ppm times 25 cycles of concentration (1,000 ppm), which would make the emissions estimate essentially equivalent with the existing cooling tower. Staff needs to understand why the water quality assumption and resulting emissions for these two cooling towers are so different.

DATA REQUEST

10. Please describe why the PM10 emissions estimated from the new cooling tower are over twenty times lower than the existing cooling tower and why the assumed cooling water TDS does not seem to factor in the 25 cycles of concentration noted in Appendix 6.1-B.

RESPONSE

10. The emission estimate provided in the application for RERC 3&4 reflects a TDS rate of 50 ppm, but does not reflect 25 concentration cycles. The revised PM10 emission rates for the cooling tower are 0.0325 lb/hr and 39.9 lb/yr (0.02 ton/yr) when the concentration cycles are considered (Air Quality Attachment 5). The differences between the initial and revised emission estimates are negligible, relative to overall emissions inventory and potential impacts.

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 11

BACKGROUND

Operating Emissions – Black-Start Engine

The black-start engine information in the application is not consistent with the modeling inputs for the operation of the black-start engine. Table 6.1-22 shows the black-start engine to be operating for three hours daily, while the modeling files and elsewhere in the application note a maximum operation of one-half hour daily. Staff requires confirmation of the black-start engine operation.

DATA REQUEST

11. Please confirm the maximum daily and annual operating basis for the black-start engine.

RESPONSE

11. It was assumed that the black-start engine may also serve as an emergency engine in very rare instances when local power is interrupted, but the need to start the turbines would not exist. For NSR offset and for BACT applicability, an operating profile similar to that used by SCAQMD to manage NSR offset policy for emergency engine permitting was used to determine emissions inventories, except that potential annual operations were restricted below those levels typically assumed by SCAQMD. The resulting emissions inventory reflects an assumed potential daily maximum operation of three hours and a potential annual maximum operation of 54 hours. The 54 hour maximum annual operation complements limits placed on a similar engine located at the RPU Springs substation facility.

    Emergency engines or black start engines are not required by SCAQMD to be submitted to an ambient air quality impact analyses (AQIA). For the CEC SPPE submittal, RPU included typical black-start operations based upon a schedule of ½ hour per day in the AQIA. The ½ hour operating schedule more accurately reflects typical operations of the engine and more accurately estimates typical impacts. The results of the AQIA indicate, however, that even with extended operations the black-start engine would not significantly affect ambient air quality.

Technical Area: Air Quality
Author: William Walters

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 12, 13 & 14

BACKGROUND

Operating Model – Existing Gas Turbine Emissions

The current application's modeling analysis uses a few emission rates that are inconsistent with the values in the RERC 1&2 Final Initial Study (FIS) for the existing gas turbines. Staff needs to understand the source of the existing gas turbine emission rates.

DATA REQUEST

12. The FIS for the RERC 1&2 provides a PM10 emission rate basis of 3.0 lbs/hour while the current application's modeling file inputs use 3.2 lbs/hour. Please describe the basis for the revision from the FIS gas turbine PM10 emission rate.

13. The FIS for the RERC 1&2 provides an annual NOx emission rate of 4.8 tons/year per turbine while the current application's modeling file inputs use 4.3 tons/year. Please describe the basis for the revision from the FIS gas turbine NOx annual emission rate.

14. The FIS for the RERC 1&2 provides a normal operating CO emission rate of 6.89 lbs/hour while the current application's modeling file inputs use 6.58 lbs/hour. Please describe the basis for the revision from the FIS gas turbine CO emission rate.

RESPONSE

12. The FIS for RERC 1&2 appropriately reflects RPU's application and General Electric emission rate guarantees. After the FIS was issued, SCAQMD determined that PM10 would be permitted upon U.S. AP-42 emission factors, regardless of General Electric emission rate guarantees. The selected AP-42 factor resulted in an emission rate of 3.2 lb/hr and is reflected in SCAQMD permit conditions A63.1 and A63.2. Because RPU is not proposing to modify the SCAQMD permit conditions for Units 1&2, the permitted emission rate was selected for the AQIA. These rates differ from the emission rates that are assumed to be permitted for Units 3&4, due to Rule 1309.1 applicability thresholds.

13. The FIS reflected an annual operating schedule of 1,330 hours per turbine. Because of the SCAQMD adjustment to hourly PM10 emission rates, annual operations for turbines 1&2 would subsequently be reduced to the equivalent of 1,206 hours. Annual NO_x emissions would also be reduced due to the assumed lower operating hours. Additionally, the FIS reflected an

assumption that 20 hours per year would be allocated to each turbine for maintenance operations. SCAQMD subsequently limited maintenance operations to the equivalent of only 10 hours per year for each turbine. The resulting annual emissions profile is less than 4.3 tons per year, per turbine (3,290 pounds per year from 796 normal operating hours; 3,294 pounds per year from 200 startup hours; 1,320 pounds per year from 200 shutdown hours; and 450 pounds per year from 10 maintenance operating hours)

14. The FIS emission rate for CO was based upon General Electric's specifications that showed uncontrolled mass emission rates, combined with an assumed 85% control factor. The FIS emission rate for CO was not calculated based upon SCAQMD methods and a controlled CO concentration of 6 ppmv. The FIS data slightly overstated CO rates.

    Because Units 1&2 are identical to Units 3&4, the newer General Electric specifications for controlled emissions at 100% load were used to support modeling. The newer General Electric rates are in line with the calculated rates for Units 3&4 using SCAQMD methods (0.01345 lb/mmBtu) and also in line with SCAQMD's calculated emission rate for Units 1&2.

Technical Area: Air Quality
Author: William Walters

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 15, 16 & 17

BACKGROUND

Cumulative Impacts Modeling Analysis

The cumulative impacts modeling analysis has not yet been submitted. The applicant is waiting for a cumulative project list from SCAQMD to determine if cumulative modeling beyond the inclusion of the existing RERC 1&2 sources needs to be completed. Staff needs the cumulative modeling analysis to complete the staff analysis for cumulative air quality impacts.

DATA REQUEST

15. Please provide a copy of the cumulative modeling analysis including electronic copies of the modeling files.

16. Please provide a copy of the cumulative project list provided by SCAQMD.

17. Please identify any projects or additions at the adjacent waste water treatment plant that would have significant emission increase potential and that have occurred within the past three years or that are approved for construction.

RESPONSE

15. Please see response to Data Request 16. If subsequent cumulative analyses are conducted, copies of all files will be provided to CEC.

16. A copy of the cumulative project list is attached, (Air Quality Attachment 6), which includes 51 projects. RPU requested a list of all outstanding applications to construct or modify equipment, as well as a list of all construction permits issued since December 31, 2006 within a six-mile radius of the project. Some of the projects however, are outside the six-mile radius because the list includes zip code regions that intersect the radius.

    The sources listed are minor in nature and several fall outside of the six-mile radius. Twelve of the listed sources are emergency engines. Storage tanks, printing operations and small bulk loading operations make up the majority of the remaining sources. The highest NO_x emission rate listed for non-emergency engines is 0.12 lb/hr. The highest CO rate is 0.79 lb/hr. The highest PM10 emission rate is 0.13 lb/hr and the highest SO_x rate is 0.01 lb/hr. For many listed sources, the emission rate for pollutants other than VOC is 0.0 lb/hr.

Based upon the data provided by SCAQMD, it does not appear that further cumulative air quality analyses are warranted.

17. No significant projects are pending or approved for construction. During the last three years, the wastewater treatment plant took steps to discontinue operation of sludge drying beds. No projects have been implemented within the past three years that would result in significantly increased emissions, but in 2007 the wastewater facility did receive a permit to install a fuel cell that would displace gas that would otherwise be consumed in the on-site cogeneration engines and flare. Generally a fuel cell would emit much lower emissions than either the uncontrolled cogeneration engines or the flare that are operated at the wastewater facility.

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Data Request 18 & 19

BACKGROUND: AIR QUALITY PERMIT APPLICATION

A permit application will need to be submitted to the SCAQMD. Staff needs to coordinate with the air district to keep apprised of any air quality issues determined during their permit review, and to make sure that staff and the air district are using the same information to complete our respective analyses.

DATA REQUEST

18. Please provide copies of any permit application materials, other than duplication of SPPE application materials, submitted to the air district.

19. Please provide copies of any future submittals to the air district within 5 days of their submittal to the air district.

RESPONSE

18. A copy of the RERC 3&4 permit application is attached (Air Quality Attachment 7). A copy of the black-start engine permit application is also attached (Air Quality Attachment 8).

19. RPU will provide the CEC any future submittals related to the RERC 3&4 project that are made to the air district within 5 days of submittal to the air district.

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Data Request 20 & 21

BACKGROUND: AIR DISPERSION MODELING – METEOROLOGICAL DATA

The applicant's air dispersion modeling analysis uses the AERMOD modeling system with a local meteorological data source (Riverside Municipal Airport) for the surface data and upper air data from Miramar Air Station. Staff generally considers the use of this dispersion model along with local surface meteorological data and regional upper air data to be acceptable. However, the meteorological data has a remarkably high number of calm hours (just over one-third of all hours) which calls into question the accuracy of the data and/or the acceptability of the precision of the monitoring station's anemometer. Additionally, for continuity of staff and SCAQMD analyses, staff needs the applicant to provide information from SCAQMD demonstrating acceptance of this meteorological data.

DATA REQUEST

20. Please describe the relative accuracy and the minimum measurable wind speed for the anemometer at the Riverside Municipal Airport.

21. Please provide confirmation from SCAQMD that they have accepted the surface and upper air meteorological data used for the project's air dispersion modeling analysis.

RESPONSE

20. The following data is taken directly from the ASOS Users Guide, NOAA/FAA, March 1998.

Parameter	Range	Accuracy	Resolution
Wind Speed	0 to 125 knots	± 2 knots - or - 5% (whichever is greater)	1 knot
Wind Direction	0 to 125 knots	± 5 degrees When wind speed is > 5 knots	Nearest degree

The standard ASOS measurement height for ws/wd is 10 meters.

21. Correspondence confirming SCAQMD's acceptance is attached (Air Quality Attachment 9)

Technical Area: Air Quality
Author: William Walters

Riverside Energy Resource Center Units 3&4
06-SPPE-1

Data Request 22

BACKGROUND: AIR DISPERSION MODELING – SITE ELEVATION

The site elevation would need to have been modified by the applicant from that which would appear in United States Geological Survey (USGS) Digital Elevation Model (DEM) files to account for man-made changes to the site elevation. Staff needs to confirm that appropriate revisions were made to the source heights to reflect the actual current elevations for both the existing and proposed equipment.

DATA REQUEST

22. Please describe the methods used to determine the site elevation for all of the existing and proposed equipment and confirm that they are based on actual conditions rather than unaltered USGS DEM file data.

RESPONSE

22. Project site elevations reflect surveys conducted after the site was graded. Modeling elevations for existing equipment reflect actual conditions and modeling elevations for proposed equipment reflect design elevations. Survey data utilizes NAVD 1929, and includes the 1970 Riverside County adjustment.