

TECHNICAL REPORT

TRACY PEAKER PROJECT
(01-AFC-16)

PETITION FOR
MINOR AIR QUALITY AMENDMENT

SEPTEMBER 2003

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1.0 OVERVIEW

GWF Energy, LLC received approval on July 17, 2002 from the California Energy Commission (CEC) for the Tracy Peaker Project (TPP), a 169 MW peak load power plant located in San Joaquin County, California. The TPP commenced operation in February 2003.

This petition is being submitted to substitute a 300 kilowatt (kW) (471 horsepower (hp)) emergency diesel engine generator (“emergency generator”) for the 250 kW (382 hp) emergency generator that was originally licensed and to modify four air quality conditions related to that emergency generator, AQ-71 through AQ-74, to reflect the lower emission rates and to delete one air quality condition, AQ-68, limiting daily hours of operation, that is no longer necessary. The proposed substitute emergency generator utilizes a “cleaner” ARB certified Clean Diesel Engine.

This petition is consistent with recent action taken by the San Joaquin Valley Air Pollution Control District (SJVAPCD) to approve the requested emergency generator substitution. Appendix B includes the complete SJVAPCD proposed decision, supporting engineering analysis and final SJVAPCD Authority to Construct issued on September 11, 2003.

This petition for a post-certification amendment for the TPP is being submitted under the provisions of Section 1769 of Title 20, California Administrative Code (CEC *Rules of Practice and Procedure and Power Plant Site Certification Regulations*) to seek a minor modification to the air quality conditions of certification. The petition is organized to address the informational requirements of Section 1769 in the order they appear in the section. The requirement appears in ***bold italics*** followed by a narrative response.

2.0 INFORMATION REQUIRED BY SECTION 1769

(A) A complete description of the proposed modifications, including new language for any conditions that will be affected

This petition is to revise four air quality conditions of certification AQ-71, AQ-72, AQ-73 and AQ-74, to reflect the proposed substitution of a 300 kW (471 hp) lower-emitting emergency generator for the 250 kW (382 hp) emergency generator originally approved. The

operation of the emergency generator would continue to be limited to less than 200 hours per year. In addition, total facility annual emission limits will remain unchanged. The specific language of the proposed amended conditions is included in Appendix A. The SJVAPCD has already approved these amendments (see Appendix B). The proposed changes are based on maintaining consistency with the SJVAPCD Authority to Construct. The changes are summarized in Table 1 and each item is discussed below.

Table 1. Summary of Requested Changes to Air Quality Conditions

Parameter	CEC Condition	Original Limit	Proposed Limit
Engine NOx emissions	AQ-71	5.09 g/hp-hr	4.69 g/hp/hr
Engine CO emissions	AQ-72	1.13 g/hp-hr	0.12 g/hp/hr
Engine VOC emissions	AQ-73	0.14 g/hp-hr	0.04 g/hp/hr
Engine PM10 emissions	AQ-74	0.13 g/hp-hr	0.029 g/hp/hr
Limitation on Hours of Operation per Day	AQ-68	11 hr/day	No limit

The applicable emission limits in the CEC Conditions of Certification are all expressed in units of grams per horsepower-hour (g/hp-hr) instead of pounds per hour (lb/hr). Because the proposed substitute emergency generator will be a slightly larger in size than the emergency generator originally proposed, the maximum hourly emission rate for NOx would increase by

approximately 0.6 lb/hr, from a maximum of 4.29 lb/hr to a maximum of 4.87 lb/hr. The maximum hourly emission of SO₂ would also increase from a maximum of 0.137 lb/hr to a maximum of 0.158 lb/hr (assuming 0.05% maximum sulfur fuel). It is important to note that unless there is an emergency event at the power plant, the emergency generator will normally only operate approximately 15 minutes per week for reliability testing and scheduled maintenance. Therefore, the potential NO_x and SO₂ emission increases will be 25% of the aforementioned values during normal operation. The maximum hourly emissions of CO, VOC and PM₁₀ will all decrease, despite the larger size of the substitute emergency generator .

Although the maximum hourly emissions of NO_x and SO₂ from the emergency generator will increase very slightly, GWF is committed to maintaining compliance with all existing daily and annual emission limits for the facility. Accordingly, there will be no increase in maximum NO_x or SO₂ emissions from the facility on either a daily or an annual basis. Based on this commitment and the requirements of the existing conditions, there is no need to modify the previously provided facility mitigation.

The original condition AQ-68 limited the operation of the emergency generator to less than 11 hours per day. The condition was deemed necessary by the SJVAPCD to ensure that there would be no potential impact exceeding 5 µg/m³, the 24-hr PM₁₀ Prevention of Significant Deterioration (PSD) significance threshold. Based on the lower PM₁₀ emission rate of the proposed substitute emergency generator (0.03 lb/hr versus the original emission rate of 0.11 lb/hr), SJVAPCD has concluded that there is no possibility of the impacts exceeding the PSD significance threshold, even if the emergency generator were operated 24 hours per day. Therefore, SJVAPCD has eliminated the corresponding limitation on hours per day of operation and we are respectfully requesting that the CEC do likewise. Again, it is noteworthy that the emergency generator will only operate for approximately 15 minutes per week for reliability testing and would only operate for a longer period in the unlikely event of a power plant emergency.

(B) A discussion of the necessity for the proposed modifications

This modification is needed in order to establish consistency with the SJVAPCD modified Authority to Construct and to accurately reflect the emergency generator that is installed

(C) If the modification is based on information that was known by the petitioner during the certification proceeding, an explanation why the issue was not raised at that time

This modification petition is not based on information that was known by the petitioner at the time of the certification proceeding. The request is based on information that has become available to GWF as a result the final inspection of the constructed facility by SJVAPCD. At that time, it was discovered that Black & Veatch (B&V), the constructor of the power plant, had installed a 300 kW emergency generator with a “cleaner” ARB Certified Clean Diesel engine in lieu of the 250 kW generator originally requested and specified by GWF Energy LLC. B&V installed the proposed 300 kW emergency generator because it had superior emissions performance, a faster delivery schedule and would continue to be limited to operate at less than 250 kW (since the connected total emergency electrical load for the power plant is less than 250 kW). It is important to emphasize that the “connected” emergency load has not changed. At the time of discovery, SJVAPCD requested that GWF submit an application for Authority to Construct to amend the model number designation and to correct the emission characteristics of the emergency generator. Subsequently, an application was submitted to and subsequently approved by the SJVPACD. A similar request is now being submitted to the CEC.

(D) If the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, an explanation of why the change should be permitted

This modification petition is generally consistent with the existing evidentiary record regarding annual emissions impacts, and mitigation (offsets) and does not undermine any of

the rationale, findings or other bases of the final decision. The proposed change would result in a 300 kW larger emergency generator that would have slightly different physical exhaust parameters. While the emergency generator would be limited to operating less than 200 hours per year, in order to ensure that the emissions would not cause any significant air quality or public health impacts, the SJVAPCD completed an air quality impact analysis and public health risk screening of the proposed substitute emergency generator. The SJVAPCD analysis demonstrates that proposed emergency generator will comply with all applicable laws, ordinances, regulations and standards and there is no potential for the proposed emergency generator change to exceed any PSD significance threshold, any applicable AAQS or SJVAPCD public health risk screening thresholds. Since daily and annual emission rate limits for the facility will remain unchanged, there is no change in the facility's long term emissions profile that would require a change in the amount of emission offsets that have already been surrendered to ensure there is no significant air quality impact. Accordingly, the proposed change will have no significant impact on air quality or public health.

(E) *An analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts*

A complete analysis of the proposed changes completed by the SJVAPCD has shown that there are no significant impacts to the environment from the proposed change. Since the proposed change will no increase allowable daily or annual emissions from the facility, no additional air quality mitigation is needed.

(F) *A discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards*

The proposed changes will comply with all applicable laws, ordinances, regulations and standards as demonstrated by the attached SJVAPCD analysis and approved Authority to Construct (Appendix B).

(G) A discussion of how the modification affects the public

The proposed revisions will have a positive impact on the public. The proposed amendments will implement a minor change to the size of an emergency generator that will be rarely operated. The proposed change has no significant environmental effects and will improve the availability of the emergency generator to support plant emergency functions for a full 24-hour period in the unlikely event that extended operation is needed (the emergency generator was previously limited to 11 hours per day). In addition, a publicly noticed and reviewed analysis by the SJVAPCD has demonstrated that the proposed change will have no significant impact on the public.

(H) A list of property owners potentially affected by the modification

There are no property owners that will be affected by the proposed modification. The property owner's list previously made a part of the evidentiary record is current, and is attached (See Appendix C).

(I) A discussion of the potential effect on near by property owners, the public and the parties in the application proceedings

The proposed revisions will have a no significant impact on near by property owners. The proposed amendments will implement a minor change to the size of an emergency generator that will be rarely operated. The proposed change has no significant environmental effects and will improve the availability of the emergency generator to support plant emergency functions for a full 24-hour period in the unlikely event that extended operation is needed (the emergency generator was previously limited to 11 hours per day). In addition, a publicly noticed and reviewed analysis by the SJVAPCD has demonstrated that the proposed change will have no significant impact on near by property owners.

3.0 SCHEDULE

The SJVAPCD proposed approval of the Authority to Construct for the requested change on August 6, 2003. A 30-day public comment period was completed, no adverse public comments were received, and the SJVAPCD final Authority to Construct is included in Appendix B. We respectfully request that the CEC incorporate these changes in the license as expeditiously as is possible.

4.0 SUMMARY

This minor amendment will only affect air quality impacts. There are no changes to any other environmental impact area. The effect of the proposed changes is to allow a slightly larger, lower emitting emergency generator to be used instead of the emergency generator originally proposed. The analysis that has already been performed by CEC staff and reviewed by the CEC prior to approving the license is not undermined or negatively impacted as a result of the proposed changes. SJVAPCD reviewed and approved the proposed change on September 11, 2003. The proposed change will not significantly impact air quality or public health and will not jeopardize the TPP's ability to comply with all applicable laws, ordinances, regulations and standards.

APPENDIX A

PROPOSED REVISIONS TO CONDITIONS OF CERTIFICATION

Proposed Revisions to Conditions of Certification

(Additions in **boldface**, deletions in ~~strikeout~~)

1. Revise the equipment description preceding condition AQ-64 as follows:

SJVAPCD Permit No. UNIT N-4597-~~43~~-0 – ~~471382~~ HP CATAPILLER MODEL **3456** ~~3306~~
~~DI TA AAATAAC~~ DIESEL-FIRED EMERGENCY IC ENGINE POWERING A **300** ~~250~~
KW ELECTRICAL GENERATOR.

2. Delete Condition AQ-68 as follows:

~~AQ-68 Operation of the engine shall not exceed 11 hours per day. [District Rule 2201]~~

~~Verification: The project owner/operator shall make records available for inspection by representatives of the District, CARB and the Commission upon request.~~

3. Revise Condition AQ-71 as follows:

AQ-71 NO_x emissions shall not exceed **4.69** ~~5.09~~ g/hp-hr. [District Rule 2201]

Verification: The project owner/operator shall provide records of compliance for the above condition as part of the quarterly reports of Condition **AQ-40**.

4. Revise Condition AQ-72 as follows:

AQ-72 CO emissions shall not exceed **0.12** ~~4.13~~ g/hp-hr. [District Rule 2201]

Verification: The project owner/operator shall provide records of compliance for the above condition as part of the quarterly reports of Condition **AQ-40**.

5. Revise Condition AQ-73 as follows:

AQ-73 VOC emissions shall not exceed **0.04** ~~0.44~~ g/hp-hr. [District Rule 2201]

Verification: The project owner/operator shall provide records of compliance for the above condition as part of the quarterly reports of Condition **AQ-40**.

6. Revise Condition AQ-74 as follows:

AQ-74 PM10 emissions shall not exceed **0.029** ~~0.43~~ g/bhp-hr based on U.S EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102]

Verification: The project owner/operator shall provide records of compliance for the above condition as part of the quarterly reports of Condition **AQ-40**.

APPENDIX B

SJVAPCD ENGINEERING ANALYSIS AND AUTHORITY TO CONSTRUCT

APPENDIX C

**PROPERTY OWNERS LIST
(Appendix D of Original AFC)**

Appendix D

Property Owners within 1,000 Feet of the GWF Tracy Peaker Project and within 500 Feet of Associated Linear Facilities

Assessor's Parcel No.	Property Owner	Address
209-230-03	United States of America	Re: 15178 W. Schulte Road Tracy, CA 95377 P.O. Box 92007, Los Angeles CA 90009
209-230-05	Frederick G Orlando	Re: 26722 S. Hansen Road 3535 Lariat Loop Road Cameron Park, CA 95682
209-230-16	Union Pacific Railroad Company	Attn: Barbara Holder Re: 997877 S. Hansen Road, Tracy, CA, T2S R4E Sec 35 1416 Dodge Street, Room 830 Omaha, NE 68179
209-230-17	Union Pacific Railroad Company	Attn: Barbara Holder Re: 997878 S. Hansen Road, Tracy, CA, T2S R4E Sec 35 1416 Dodge Street, Room 830 Omaha, NE 68179
209-230-18	Union Pacific Railroad Company	Attn: Barbara Holder Re: 997879 S. Hansen Road, Tracy, CA, T2S R4E Sec 35 1416 Dodge Street, Room 830 Omaha, NE 68179
209-230-20	Harold & P H Timmins	Re: 26666 S. Hansen Road 27001 S. Hansen Road Tracy, CA 95377
209-230-23	David J Pombo	Re: 997108 S. Hansen Road 25726 S Hansen Road Tracy, CA 95377
209-240-03	George Cheng	Re: 14250 W. Schulte Road 44908 Winding Lane Fremont, CA 94539
209-240-10	Cheun Hee Lee	Re: 26788 S. Hansen Road 414 33 rd Avenue San Francisco, CA 94121

Assessor's Parcel No.	Property Owner	Address
209-240-11 APN for Project Site TBD	Russell Kagehiro Jepson Webb Ranch LLC	Re: 26977 S. Lammers Road 7200 W. 11 th Street Tracy, CA 95377
209-240-21	Union Pacific Railroad Company	Attn: Barbara Holder Re: 997883 S. Lammers Road, Tracy, CA, T2S R4E Sec 35 1416 Dodge Street, Room 830 Omaha, NE 68179
209-240-24	Owens Illinois Glass Container Inc. Owens-Brockway Glass Container Inc.	Re: 14700 W. Schulte Road Ernst & Young / Jim Beckman One Seagate, Suite 1200 Toledo, OH 43604
209-240-25	Nutting-Rice Tracy LLC	Re: 15000 W. Schulte Road Attn: Charles C. Wallace, Jr. One Websters Landing Syracuse, NY 13202
240-140-01	John & A Zambetti	Re: 13350 W. Valpico Road 13203 W. Valpico Road Tracy, CA 95377
240-140-02	Roger Traina, Anthony Traina et al.	Re: 13100 W. Valpico Road 27320 Fair Oaks Road Tracy, CA 95377
251-040-01	Gene Panella	Re: 27004 S. Hansen Road, Tracy 2025 E. Cliff Drive Santa Cruz, CA 95062
251-040-06	Frederick G. Orlando	Re: 27009 S. Lammers Road 3535 Lariat Loop Road Cameron Park, CA 95682
251-040-08	Valley Land Co Corp	Re: 28321 S. Lammers Road Attn: John A Christie 7700 College Town Drive, Suite 101 Sacramento, CA 95826
251-040-09	James A & Mary Stokley	27550 S. Lammers Road Tracy, CA 95377
251-040-10	F A & C K Robertson	Re: 26900 S. Hansen Road 704 Wimbledon Lane Livermore, CA 94550
251-040-13	Paul & Barbara Swartzle	27150 S. Hansen Road Tracy, CA 95377
251-040-14	Laurel Eckert	27240 S. Hansen Road Tracy, CA 95377

Assessor's Parcel No.	Property Owner	Address
251-040-15	Robert & Emily Richardson	Re: 27380 S. Hansen Road PO Box 10871 Fort Mojave, AZ 86427
251-040-16	Harold & P H Timmins	27001 S. Hansen Road Tracy, CA 95377
251-040-17	Frederick G. Orlando	Re: 999756 S. Lammers Road 3535 Lariat Loop Road Cameron Park, CA 95682
251-050-01	Charles J & Marilyn Tusso et al.	Re: 27191 S. Lammers Road Steve S & Kandi L Tusso 27210 S. Lammers Road Tracy, CA 95377
251-050-03	Sam & Marie Tusso	Charles Tusso 27249 S. Lammers Road Tracy, CA 95377

San Joaquin Valley Unified Air Pollution Control District

MEMORANDUM

DATE: July 2, 2003

TO: Nick Peirce, AQE—Permit Services

FROM: Kathi Crump, AQS—Technical Services

SUBJECT: AAQA and RMR Modeling Results for GWF Energy (N-4597-4-0)

As per your request, Technical Service performed a RMR and Ambient Air Quality Analysis on a 471 hp Caterpillar Model 3456 DI TA AA diesel-fired emergency IC engine powering a 300kW electrical generator.

RMR Modeling

Pollutant dispersion was determined from ISCST3 using the stack parameters provided by the engineer and building down-wash and meteorological data for Tracy 1998 supplied by the applicant. The results below reflect the worse case cancer risk.

Device	Emergency IC Engine
Acute Index	N/A
Chronic Index	N/A
Cancer Risk (per million)	0.3
TBACT Required?	No

The carcinogenic risk of 0.3 in a million was below the 10.0 in a million limit for diesel IC engines emitting $\leq 0.149\text{g PM}_{10}/\text{bhp}/\text{hr}$. **The project is approved, and TBACT is not required.** The following permit conditions are required to ensure compliance with the assumptions made for the risk management review:

1. Only CARB certified fuel containing not more than 0.05% sulfur by weight is to be used in this engine.
2. PM₁₀ emission rate shall not exceed **0.029 g/HP-hr (note method)**.
3. The exhaust stack shall not be fitted with a rain cap, or any other similar device, that impedes upward vertical exhaust flow.

4. The engine shall only be operated for maintenance, testing, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance and testing purposes shall not exceed **200 hours per year**.

AAQA

For the Ambient Air Quality Analysis, the engineer supplied the emission rates for each criteria pollutant on an hourly and annual basis. Background concentrations for the pollutants were drawn from EPA data for San Joaquin Co 2002 and Kern County (2001 for SO_x).

The results from Criteria Pollutant Modeling are as follows:

AAQA Results*

Device – 4-0 Emergency ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass**	Pass**

*See the attached PSD spreadsheet for pollutant concentrations.

**The PM₁₀ emissions for this project are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

X = Not a designated averaging time for this pollutant.

Conclusion

The AAQA indicates that the emissions from the emergency diesel IC engine will not have an adverse impact on the State or National AAQS. Therefore, no further modeling will be required and permitting may proceed as proposed.