BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE AVENAL ENERGY PROJECT	DOCKET NO. 08-AFC-1

AVENAL POWER CENTER, LLC'S PREHEARING CONFERENCE STATEMENT

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June 22, 2009

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE AVENAL ENERGY PROJECT	DOCKET NO. 08-AFC-1

AVENAL POWER CENTER, LLC'S PREHEARING CONFERENCE STATEMENT

I. INTRODUCTION

Pursuant to section 1718.5 of Title 20 of the California Code of Regulations and the Notice of Prehearing Conference and Evidentiary Hearing for the Avenal Energy Project, Avenal Power Center, LLC ("Avenal Power") hereby files its Prehearing Conference Statement for the Avenal Energy Project (the "Project").

II. TOPIC AREAS READY TO PROCEED TO EVIDENTIARY HEARING

All topics are ready to proceed to evidentiary hearing.

III. TOPIC AREAS NOT READY TO PROCEED TO EVIDENTIARY HEARING

There are no topics which are not ready to proceed to evidentiary hearing.

IV. TOPIC AREAS IN DISPUTE AND REQUIRING ADJUDICATION

Avenal Power is not aware of any areas of dispute with Energy Commission Staff ("Staff"). Intervenor Rob Simpson recently submitted a series of documents as his rebuttal testimony. In these documents, Mr. Simpson expressed disagreement with the particulate matter (PM) and ammonia slip analyses and possibly other air quality and greenhouse gas analyses

conducted for the Project. In his rebuttal testimony, Mr. Simpson also briefly touched upon his perceived issue with transmission capacity and the potential consequences to development of renewable energy sources.

On June 18, 2009, Avenal Power filed a motion to strike most of Mr. Simpson's rebuttal testimony, including the exhibits filed in support thereof. The amount of hearing time required to address Mr. Simpson's concerns with air quality and public health issues will depend on which documents from Mr. Simpson's rebuttal testimony and exhibits are ultimately admitted into evidence. Avenal Power is not aware of any areas of dispute with any other party, as no other party has filed direct or rebuttal testimony.

V. AVENAL POWER'S WITNESS LIST

Set forth below is a list of hearing topics, associated witnesses, summaries of the topics of the witnesses' testimony, and estimated time for their direct testimony, based upon current information. Avenal Power anticipates that evidence and testimony for most subject areas will be entered into the record by declaration. However, based on the documents recently filed as rebuttal testimony by Mr. Simpson, Avenal Power understands Mr. Simpson may have some issues with the Project's analysis in the areas of Air Quality (including Greenhouse Gas emissions) and Public Health. Therefore, Avenal Power intends to have witnesses in these topic areas available at the hearing to respond to Mr. Simpson's testimony and answer any questions from Mr. Simpson, Staff, or the Committee.

All witnesses have professional expertise in the discipline of their testimony. The witnesses' qualifications were included in Avenal Power's Exhibit 25 – Written Testimony, Witness Declarations and Resumes, filed on June 8, 2009. Through previously filed written testimony and live direct testimony if necessary, each witness will testify as to the project's compliance with applicable laws, ordinances, regulations and standards (LORS), the environmental impacts of the Project, and the proposed conditions intended to mitigate potential impacts.

DIRECT TESTIMONY WITNESS LIST			
Topic	**Witness**	**Summary of Testimony**	**Time**
Executive Summary	- Jimmy Rexroad, Avenal Power Center, LLC - Joseph Stenger, TRC Companies, Inc.	Sponsoring the Application for Certification (AFC).	5 minutes, if not presented by declaration.
Project Description	- Jimmy Rexroad, Avenal Power Center, LLC - Joseph Stenger, TRC Companies, Inc. - Alan Mackenzie, Fluor	Sponsoring the AFC.	5 minutes, if not presented by declaration.
Air Quality	- Gary Rubenstein, Sierra Research - Eric Walther, Sierra Research - Jimmy Rexroad, Avenal Power Center, LLC	The Avenal Energy Project complies with applicable Air Quality LORS and will not create a significant adverse environmental impact.	Approximately 1 hour, depending on which documents submitted by Intervenor Simpson are ultimately admitted into the record.
(Greenhouse Gas Emissions)	- Gary Rubenstein, Sierra Research - Eric Walther, Sierra Research - Jimmy Rexroad, Avenal Power Center, LLC - Richard Lauckhart, Black & Veatch	The Avenal Energy Project complies with applicable Greenhouse Gas LORS and will not create a significant adverse environmental impact.	Approximately 1 hour, depending on which documents submitted by Intervenor Simpson are ultimately admitted into the record.
Biological Resources	- Elisha Back, TRC Companies, Inc. - Joseph Stenger, TRC Companies, Inc. - Jimmy Rexroad, Avenal Power Center, LLC	The Avenal Energy Project complies with applicable Biological Resources LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Cultural Resources	- Thomas Jackson, Pacific Legacy, Inc. - Wendy Tinsley, Urbana Preservation and Planning - Joseph Stenger, TRC	The Avenal Energy Project complies with applicable Cultural Resources LORS and will not create a significant adverse	5 minutes, if not presented by declaration.

DIRECT TESTIMONY WITNESS LIST			
Topic	**Witness**	**Summary of Testimony**	**Time**
	Companies, Inc.	environmental impact.	
Hazardous Materials	- Todd Stanford, TRC Companies, Inc. - Joseph Stenger, TRC Companies, Inc.	The Avenal Energy Project complies with applicable Hazardous Materials LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Land Use	- Joseph Stenger, TRC Companies, Inc. - Jimmy Rexroad, Avenal Power Center, LLC	The Avenal Energy Project complies with applicable Land Use LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Noise and Vibration	- Robert Mantey, Alliance Acoustical Consultants, Inc. - Joseph Stenger, TRC Companies, Inc.	The Avenal Energy Project complies with applicable Noise and Vibration LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Public Health	- Gary Rubenstein, Sierra Research - Eric Walther, Sierra Research	The Avenal Energy Project complies with applicable Public Health LORS and will not create a significant adverse environmental impact.	Approximately 1 hour, depending on which documents submitted by Intervenor Simpson are ultimately admitted into the record.
Socioeconomics	- Jimmy Rexroad, Avenal Power Center, LLC - Joseph Stenger, TRC Companies, Inc.	The Avenal Energy Project complies with applicable Socioeconomic Resources LORS and will not create a significant adverse environmental impact.	5 minutes if not presented by declaration.
Soil and Water Resources	- Joseph Stenger, TRC Companies, Inc. - Jimmy Rexroad, Avenal Power Center, LLC	The Avenal Energy Project complies with applicable Soil and Water Resources LORS and will not create a significant	5 minutes, if not presented by declaration.

DIRECT TESTIMONY WITNESS LIST			
Topic	**Witness**	**Summary of Testimony**	**Time**
		adverse environmental impact.	
Traffic and Transportation	- Joseph Stenger, TRC Companies, Inc. - Charles Clouse, TPG Consulting, Inc.	The Avenal Energy Project complies with applicable Traffic and Transportation LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Transmission Line Safety and Nuisance	- Joseph Stenger, TRC Companies, Inc.	The Avenal Energy Project complies with applicable Transmission Line Safety and Nuisance LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Visual Resources	- Joseph Stenger, TRC Companies, Inc.	The Avenal Energy Project complies with applicable Visual Resources LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Waste Management	- Joseph Stenger, TRC Companies, Inc.	The Avenal Energy Project complies with applicable Waste Management LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Worker Safety and Fire Protection	- Joseph Stenger, TRC Companies, Inc. - Jimmy Rexroad, Avenal Power Center, LLC	The Avenal Energy Project complies with applicable Worker Safety LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Facility Design	- Alan Mackenzie, Fluor	The Avenal Energy Project complies with applicable Facility Design LORS and will not create a significant	5 minutes, if not presented by declaration.

DIRECT TESTIMONY WITNESS LIST			
Topic	**Witness**	**Summary of Testimony**	**Time**
		adverse environmental impact.	
Geology and Paleontology	- Joseph Stenger, TRC Companies, Inc.	The Avenal Energy Project complies with applicable Geology and Paleontology LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Power Plant Efficiency	- Jimmy Rexroad, Avenal Power Center, LLC - Alan Mackenzie, Fluor	The Avenal Energy Project complies with applicable Power Plant Efficiency LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Power Plant Reliability	- Jimmy Rexroad, Avenal Power Center, LLC - Alan Mackenzie, Fluor	The Avenal Energy Project complies with applicable Power Plant Reliability LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Transmission System Engineering	- Jimmy Rexroad, Avenal Power Center, LLC - Paul Schwartz, Fluor - David Larsen, Navigant Consulting, Inc.	The Avenal Energy Project complies with applicable Transmission System Engineering LORS and will not create a significant adverse environmental impact.	5 minutes, if not presented by declaration.
Alternatives Analysis	- Jimmy Rexroad, Avenal Power Center, LLC - Joseph Stenger, TRC Companies, Inc. - Alan Mackenzie, Flour	There are no feasible alternatives.	5 minutes, if not presented by declaration.

VI. CROSS-EXAMINATION

Avenal Power would like to reserve the right to cross-examine all witnesses presented by Mr. Simpson. In addition, Avenal Power reserves the right to cross-examine Staff's witnesses on greenhouse gas issues (approximately 5 minutes). Avenal Power does not yet know which of the documents submitted as rebuttal testimony by Mr. Simpson will ultimately be admitted into the record. Avenal Power also does not know how many witnesses Mr. Simpson intends to call, nor does Avenal Power know the identity of any such witnesses. If Mr. Simpson does call witnesses, Avenal Power would like to reserve approximately twenty minutes to cross-examine each of his witnesses.

VII. EXHIBIT LIST

Attachment A below sets forth a list of exhibits Avenal Power expects to present at the evidentiary hearings. Since Avenal Power filed its exhibits on June 8, 2009, the U.S. Environmental Protection Agency (EPA) has issued a proposed Prevention of Significant Deterioration (PSD) permit for the Project. This proposed PSD permit is included as Attachment B to this prehearing conference statement. Mr. Simpson expressed interest in this permit in the documents he filed as his rebuttal testimony. Avenal Power has added the proposed PSD permit to its exhibit list and would like to offer the proposed PSD permit into evidence as Exhibit 62.

As discussed above, on June 18, 2009 Avenal Power filed a motion to strike the rebuttal testimony submitted by Mr. Simpson. Avenal Power reserves the right to submit new responsive information should its motion to strike be denied. Avenal Power is not specifically referencing any LORS as exhibits, but will rely on applicable LORS, case law and decisions of this Commission and the Public Utilities Commission.

VIII. SCHEDULING MATTERS

In order to allow sufficient time for the evidentiary hearing transcript to become available, Avenal Power proposes setting a deadline of July 21, 2009 for the opening brief or response to comments, if needed. If a reply brief is needed, Avenal Power proposes setting a deadline of July 28, 2009 for the reply brief. Avenal Power does not anticipate vacation schedules to impact the schedule for the Project proceedings.

IX. PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

Avenal Power submitted its comments regarding the conditions of certification listed in the Final Staff Assessment (FSA) as part of its testimony filed on June 8, 2009. In that testimony, Avenal Power proposed a change to only a single condition of certification, TRANS-1, located at page 4.10-12 of the FSA. Avenal Power's comment read as follows:

> The third bullet of Condition of Certification TRANS-1 reads as follows: "Project truck traffic shall avoid using the Jayne Road/Avenal Cutoff Road intersection." (FSA at 4.10-12.) Applicant understands this Condition of Certification to prevent the Project's larger truck traffic from turning at the intersection of Jayne Road and Avenal Cutoff Road. Therefore, Applicant requests the condition be modified to read as follows: "Project truck traffic shall avoid turns at the Jayne Road/Avenal Cutoff Road intersection."

DATED: June 22, 2009 DOWNEY BRAND LLP

By: /s/
Nicholas H. Rabinowitsh
Downey Brand LLP
Attorney for Avenal Power Center, LLC

ATTACHMENT A

Avenal Power's Exhibit List

AVENAL POWER'S EXHIBIT LIST

Documents Produced By Avenal Power

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
1.	Avenal Energy Project Application for Certification; dated February 2008, and docketed on February 21, 2008. Sponsored by Applicant, and admitted into evidence on _____.	All Areas
2.	Air Quality and Public Health Modeling Files; dated February 12, 2008, and docketed February 21, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Air Quality Modeling Files	Air Quality
	(b) Public Health Modeling Files	Public Health
3.	Supplement to the Avenal Energy Project Application for Certification; dated March 27, 2008, and docketed March 28, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Section 2.0 - Air Quality	Air Quality
	(b) Section 3.0 – Biological Resources	Biological Resources
	(c) Section 4.0 – Cultural Resources	Cultural Resources
	(d) Section 5.0 - Socioeconomics	Socioeconomics
	(e) Section 6.0 – Transmission System Design	Transmission System Engineering
	(f) Section 7.0 – Water Resources	Soil and Water Resources

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	(g) Attachment A.1 – Air Permit Application Completeness Letters	Air Quality
	(h) Attachment A.2 – Corrected AFC Page 6.2-20	Air Quality
	(i) Attachment C.1 – CHRIS Record Search	Cultural Resources
	(j) Attachment C.2 – Letters to Local Historical and Archaeological Societies	Cultural Resources
	(k) Attachment C.3 – Historical Architectural Survey Report	Cultural Resources
	(l) Attachment C.4 – Letter to NAHC	Cultural Resources
	(m) Attachment S.1 – Agency Contacts for Socioeconomics	Socioeconomics
	(n) Attachment W.1 – Existing Site Drainage	Soil and Water Resources
	(o) Attachment W.2 – 100 Year Flood Zone	Soil and Water Resources
	(p) Attachment W.3 – Pre-Construction Runoff and Drainage Plan	Soil and Water Resources
	(q) Attachment W.4 – Existing Groundwater Wells Within One Half Mile	Soil and Water Resources
	(r) Attachment W.5 – Land Option and Water Agreement	Soil and Water Resources
	(s) Attachment W.6 – Conceptual Sanitary Sewer System and Leaching Field/Septic System	Soil and Water Resources

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	(t) Attachment W.7 – Ground Water Drawdown Modeling Report	Soil and Water Resources
	(u) Attachment T.1 – Interconnection Feasibility Study Report	Transmission System Engineering
	(v) Attachment T.2 – One Line Diagram for Gates Substation	Transmission System Engineering
	(w) Attachment T.3 – System Impact Study Agreement	Transmission System Engineering
4.	CHRIS Cultural Resource Reports for the Avenal Energy Application for Certification; dated April 1, 2008, and docketed April 2, 2008. Sponsored by Applicant, and received into evidence on _____.	Cultural Resources
5.	Applicant's Response to Department of Conservation's April 4, 2008 Letter Regarding the Avenal Application for Certification; dated May 15, 2008, and docketed May 16, 2008. Sponsored by Applicant, and received into evidence on _____.	Land Use
6.	Avenal Power Center, LLC's Objection to California Energy Commission Staff Data Requests (Set 1); dated June 10, 2008, and docketed June 10, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Objections to Data Request 16	Cultural Resources
	(b) Objections to Data Request 53	Soil and Water Resources
	(c) Objections to Data Requests 66, 67, and 68	Waste Management
7.	Response to California Energy Commission Data Requests 1-74 for Avenal Energy; dated June 20, 2008, and	

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	docketed June 20, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Responses 1-6; Exhibit 2-1	Air Quality
	(b) Responses 7-10; Exhibits 7-1, 7-2, 7-3, 10-1	Biological Resources
	(c) Responses 11-20; Exhibits 17-1, 17-2	Cultural Resources
	(d) Response 21	Hazardous Materials Management
	(e) Responses 22-23; Exhibits 22-1, 23-1	Land Use
	(f) Responses 24-53; Exhibits 25-1, 35-1, 38-1, 48-1, 48-2	Soil and Water Resources
	(g) Responses 54-58; Exhibit 58-1	Transmission System Engineering
	(h) Responses 59-68; Exhibit 61-1	Waste Management
	(i) Responses 69-74	Worker Safety and Fire Protection
8.	Avenal Energy's Response to California Energy Commission Data Request Workshop for Avenal Energy (Site Cut and Fill Depth Plan); dated July 11, 2008, and docketed July 14, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Site Cut and Fill Depth Plan	Facility Design
	(b) Cover Letter; Will-Serve Letter from Kings County	Worker Safety and Fire

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	Fire Department	Protection
9.	Phase I Environmental Site Assessment and Appendices; dated October 30, 2007, and docketed July 23, 2008. Sponsored by Applicant, and received into evidence on _____.	Waste Management
10.	Additional Pipeline Details for Avenal Energy Project; dated August 1, 2008, and docketed August 4, 2008. Sponsored by Applicant, and received into evidence on _____.	Facility Design
11.	Letter from Avenal Power to United States Fish and Wildlife Service Regarding Migratory Buffer for Kit Fox; dated August 15, 2008. Not docketed. Sponsored by Applicant, and received into evidence on _____.	Biological Resources
12.	Memorandum Regarding SR 198 EB Ramps at Avenal Cutoff Road; dated August 25, 2008, and docketed August 26, 2008. Sponsored by Applicant, and received into evidence on _____.	Traffic and Transportation
13.	Response to CEC Data Request Set 1 and Workshop for Avenal Energy (System Impact Study); dated September 19, 2008, and docketed September 22, 2008. Sponsored by Applicant, and received into evidence on _____.	Transmission System Engineering
14.	Response to California Energy Commission Data Requests Set 2 (# 75-94) for Avenal Energy; dated September 24, 2008, and docketed September 24, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Responses 75-77	Air Quality
	(b) Responses 78-88; Exhibits 79-1, 80-1, 83-1, 83-2, 83-3, 84-1	Cultural Resources

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	(c) Response 89; Exhibit 89-1	Waste Management
	(d) Responses 90-94; Exhibits 92-1, 93-1	Soil and Water Resources
15.	Avenal Power Center's Response to September 8, 2008 Letter from United States Fish and Wildlife Service to United States Environmental Protection Agency, Region 9; dated October 1, 2008, and docketed October 3, 2008. Sponsored by Applicant, and received into evidence on _____.	Biological Resources
16.	Supplemental Information Regarding a Buffer Along the San Luis Canal for Avenal Energy; dated October 6, 2008, and docketed October 7, 2008. Sponsored by Applicant, and received into evidence on _____.	Biological Resources
17.	Avenal Power Center LLC's Objections to California Unions for Reliable Energy's Data Requests; dated October 16, 2008, and docketed October 21, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Objections to Data Request 2	Air Quality
	(b) Objections to Data Requests 6(a), 6(c), 7(a), and 7(b)	Waste Management
	(c) Objection to Data Request 9	Facility Design
	(d) Objections to Data Requests 10-30	Transmission System Engineering
	(e) Objections to Data Request 35 and 41	Traffic and Transportation
	(f) Objections to Data Request 47	Soil and Water Resources

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	(g) Objections to Data Request 48	Biological Resources
	(h) Objections to Data Request 53	Biological Resources
18.	Letter from Avenal Energy to San Joaquin Valley Air Pollution Control District Regarding Avenal Energy Carbon Monoxide Emission Limit Reduction; dated October 28, 2008, and docketed November 13, 2008. Sponsored by Applicant, and received into evidence on _____.	Air Quality
19.	Response to CURE Data Request Set 1 for Avenal Energy; dated October 30, 2008, and docketed November 3, 2008. Sponsored by Applicant, and received into evidence on _____.	
	(a) Responses 1-5	Air Quality
	(b) Responses 6-7; Exhibit C6	Waste Management
	(c) Response 8	Soil and Water Resources
	(d) Response 9	Geology and Paleontology
	(e) Responses 10-30	Transmission System Engineering
	(f) Responses 31-44; Exhibits C31-1, C31-2, C31-3, C31-4, C32, C40	Traffic and Transportation
	(g) Responses 45-59	Biological Resources
20.	Supplement to the System Impact Study; dated November 21, 2008, and docketed November 21, 2008. Sponsored by Applicant, and received into evidence on _____.	Transmission System Engineering

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
21.	Applicant's Final Comments to Avenal Energy Preliminary Staff Assessment; dated March 4, 2009, and docketed March 5, 2009. Sponsored by Applicant, and received into evidence on _____.	
	(a) Attachment 1, Pages 1-4	Air Quality
	(b) Attachment 1, Pages 5-21	Biological Resources
	(c) Attachment 1, Pages 22-28	Cultural Resources
	(d) Attachment 1, Pages 29-33	Land Use
	(e) Attachment 1, Pages 34-35	Noise and Vibration
	(f) Attachment 1, Page 36	Public Health
	(g) Attachment 1, Pages 37-39	Soil and Water Resources
	(h) Attachment 1, Pages 40-42	Traffic and Transportation
	(i) Attachment 1, Pages 43-44	Geology and Paleontology
	(j) Attachment 1, Pages 45-46	Visual Resources
	(k) Attachment 1, Pages 47-48	Waste Management
	(l) Attachment 1, Page 49	Transmission System Engineering
	(m) Attachment 1, Page 50	Alternatives
	(n) Attachment 2 (Revised Exhibit 83-3 from Response to California Energy Commission Data Requests	Project Description

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	Set 2)	
	(o) Attachment 3 (Revised Exhibit 83-2 from Response to California Energy Commission Data Requests Set 2)	Project Description
	(p) Attachment 4 (Kettleman Hills Facility Cumulative Impact Considerations)	Socioeconomics
22.	Avenal Project System Impact Study Determining Re-Rate Potential for Impacted Lines; dated April 17, 2009, and docketed April 21, 2009. Sponsored by Applicant, and received into evidence on _____.	Transmission System Engineering
23.	Study Regarding Change in Carbon Emissions from the Base Case When the Avenal Energy Power Plant Is Added; dated May 7, 2009, and docketed May 14, 2009. Sponsored by Applicant, and received into evidence on _____.	Air Quality
24.	Environmental Analysis for Gates Substation and Surrounding Property Owned by PG&E; dated May 21, 2009, and docketed May 22, 2009.	Transmission System Engineering
25.	Written Testimony, Witness Declarations and Resumes; dated June 8, 2009, and docketed June 8, 2009. Sponsored by Applicant, and received into evidence on _____. (a) Executive Summary (b) Project Description (c) Air Quality (d) Biological Resources (e) Cultural Resources (f) Hazardous Materials Management (g) Land Use (h) Noise and Vibration (i) Public Health (j) Socioeconomics (k) Soil and Water Resources	All Areas

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
	(l) Traffic and Transportation (m) Transmission Line Safety and Nuisance (n) Visual Resources (o) Waste Management (p) Worker Safety and Fire Protection (q) Facility Design (r) Geology and Paleontology (s) Power Plant Efficiency (t) Power Plant Reliability (u) Transmission System Engineering (v) Alternatives	
26.	Supplemental Testimony Regarding Greenhouse Gas Issues; dated June 8, 2009, and docketed June 8, 2009. Sponsored by Applicant, and received into evidence on _____.	Air Quality
Remaining numbers reserved for additional exhibits.		

Documents Produced by Other Agencies

EXHIBIT	DOCUMENT NAME	TECHNICAL AREAS
50.	Letter from Department of Conservation Regarding Avenal Power Center, LLC Application for Certification; dated April 4, 2008, and docketed April 8, 2008. Sponsored by Applicant, and received into evidence on _____.	Land Use
51.	Report of Conversation with TRC Solutions Regarding Avenal Energy AFC Socioeconomics Questions; dated May 9, 2008, and docketed July 9, 2008. Sponsored by Applicant, and received into evidence on _____.	Socioeconomics
52.	Letter from California Department of Fish and Game to the California Energy Commission Summarizing Department of Fish and Game's Comments from the March 18, 2008 Meeting; dated May 27, 2008, and docketed May 30, 2008. Sponsored by Applicant, and received into evidence on _____.	Biological Resources
53.	California Air Resources Board's Comments on the Avenal Power Center; dated June 16, 2008; and docketed June 17, 2008. Sponsored by Applicant, and received into evidence on _____.	Air Quality
54.	Kings County Fire Department Service Support Letter for Avenal Energy; dated June 27, 2008, and docketed June 30, 2008. Sponsored by Applicant, and received into evidence on _____.	Worker Safety and Fire Protection
55.	Letter From United States Environmental Protection Agency to United States Fish and Wildlife Service Regarding Request for Formal Consultation Under Section 7 of the Federal Endangered Species Act; dated July 10, 2008, and docketed July 11, 2008. Sponsored by Applicant, and received into evidence on _____.	Biological Resources
56.	Letter from City of Avenal to Avenal Power Center in	Soil and Water Resources

	Response to Request Regarding Potable Water Availability; dated September 22, 2008, and docketed January 13, 2009. Sponsored by Applicant, and received into evidence on _____.	
57.	Letter from Environmental Protection Agency to United States Fish and Wildlife Service; dated October 22, 2008. Not docketed. Sponsored by Applicant, and received into evidence on _____.	Biological Resources
58.	Final Determination of Compliance; dated October 30, 2008, and docketed November 4, 2008. Sponsored by Applicant, and received into evidence on _____.	Air Quality
59.	Letter from Westlands Water District Withdrawing Its May 29, 2008 Letter; dated January 12, 2009, and docketed January 26, 2009. Sponsored by Applicant, and received into evidence on _____.	Soil and Water Resources
60.	Letter from Kings County Economic Development Corporation Supporting Avenal Energy Project; dated April 1, 2009, and docketed April 1, 2009. Sponsored by Applicant, and received into evidence on _____.	Land Use
61.	Letter from San Joaquin Valley Air Pollution Control District Clarifying Questions from CEC Staff During February 18, 2009 PSA Workshop; dated May 27, 2009 and docketed June 2, 2009. Sponsored by Applicant, and received into evidence on _____.	Air Quality
62.	Proposed Prevention of Significant Deterioration Permit, Avenal Energy Project; dated June 2009. Not docketed. Sponsored by Applicant, and received into evidence on _____.	Air Quality
Remaining numbers reserved for additional exhibits.		

ATTACHMENT B

Proposed Prevention of Significant Deterioration Permit
Avenal Energy Project
June 2009

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE AVENAL ENERGY PROJECT	DOCKET NO. 08-AFC-1

PROOF OF SERVICE
(Revised 6/17/09)

APPLICANT Jim Rexroad, Project Manager Avenal Energy Center, LLC 500 Dallas Street, Level 31 Houston, TX 77002 jim.rexroad@macquarie.com	**COUNSEL FOR APPLICANT** Jane Luckhardt, Esq. Downey Brand, LLP 555 Capitol Mall, 10th Floor Sacramento, CA 95814 jluckhardt@downeybrand.com	Rob Simpson Environmental Consultant 27126 Grandview Avenue Hayward, CA 94542 rob@redwoodrob.com
Tracy Gilliland Avenal Power Center, LLC 500 Dallas Street, Level 31 Houston, TX 77002 tracey.gilliland@macquarie.com	**INTERESTED AGENCIES** California ISO 151 Blue Ravine Road Folsom, CA 95630 e-recipient@caiso.com **Electronic Copy**	**ENERGY COMMISSION** Jeffrey D. Byron Commissioner & Presiding Member jbyron@energy.state.ca.us
APPLICANT CONSULTANT Joe Stenger, Project Director TRC Companies 2666 Rodman Drive Los Osos, CA 93402 jstenger@trcsolutions.com	**INTERVENORS** Loulena A. Miles Marc D. Joseph Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080 mdjoseph@adamsbroadwell.com lmiles@adamsbroadwell.com	Arthur Rosenfeld Commissioner and Associate Member arosenfe@energy.state.ca.us Gary Fay Hearing Officer gfay@energy.state.ca.us
	Ingrid Brostrom Center on Race, Poverty & the Environment 47 Kearny Street, Ste. 804 San Francisco, CA 94108 ibrostrom@crpe-ej.org John E. Honnette, Vice Chair Tihipite Chapter, Sierra Club 2543 15th Avenue Kingsburg, CA 93631-1110 jhonnette@aol.com	Joseph Douglas Project Manager jdouglas@energy.state.ca.us Lisa DeCarlo Staff Counsel ldecarlo@energy.state.ca.us Public Adviser's Office publicadviser@energy.state.ca.us

Declaration of Service

I, Lois Navarrot, declare that on June 18, 2009, I served and filed copies of the attached **Avenal Power Center, LLC's Prehearing Conference Statement.** The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: www.energy.ca.gov/sitingcases/avenal. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service List) and to the Commission's Docket Unit, in the following manner:

(check all that apply)

For Service to All Other Parties

__X__ sent electronically to all email addresses on the Proof of Service list;

__X__ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service List above to those addresses **NOT** marked "email preferred."

AND

For Filing with the Energy Commission

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1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

/s/
Lois Navarrot

EXHIBIT 62

Statement of Basis and Ambient Air Quality Impact Report; June 2009

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX

STATEMENT OF BASIS AND
AMBIENT AIR QUALITY IMPACT REPORT

For a Clean Air Act
Prevention of Significant Deterioration Permit

Avenal Energy Project
PSD Permit Number SJ 08-01

June 2009

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PROPOSED PREVENTION OF SIGNIFICANT DETERIORATION PERMIT
AVENAL ENERGY PROJECT
Statement of Basis and Ambient Air Quality Impact Report
(PSD Permit SJ 08-01)

Table of Contents

Acronyms & Abbreviations

AFC	Application for Certification
APN	Assessor Parcel Number
APCD	Air Pollution Control District
BACT	Best Available Control Technology
BTU	British thermal units
CEC	California Energy Commission
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CTG	Combustion Gas Turbine
DLN	Dry Low-NOx
DOC	Determination of Compliance
GE	General Electric
EAB	Environmental Appeals Board
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FLM	Federal Land Manager
FWS	U.S. Fish and Wildlife Service
HHV	Higher Heating Value
g	grams
gr	grains
hp	horsepower
hr	hour
HRSG	Heat Recovery Steam Generator
IC	Internal Combustion
kW	kilowatt
lb, lbs	pound, pounds
MMBTU	Million British thermal units
MW	Megawatts (of electrical power)
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NO	Nitrogen oxide or nitric oxide
NO_2	Nitrogen dioxide
NO_x	Oxides of Nitrogen ($NO + NO_2$)
NSPS	New Source Performance Standards, 40 CFR Part 60
NSCR	Non-Selective Catalytic Reduction
NSR	New Source Review
O_2	Oxygen
Ox-Cat	Oxidation Catalyst

PM	Total Particulate Matter
PM_{10}	Particulate Matter less than 10 micrometers (μm) in diameter
ppm	parts per million
PPMVD	Parts per Million by Volume, on a Dry basis
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RBLC	U.S. EPA RACT/BACT/LAER Information Clearinghouse
SCR	Selective Catalytic Reduction
SIL	Significant Impact Level
SOx	Oxides of sulfur
STG	Steam Turbine Generator
tpy	tons per yer
yr	year

Proposed Prevention of Significant Deterioration (PSD) Permit Statement of Basis and Ambient Air Quality Impact Report

AVENAL ENERGY PROJECT

Executive Summary

The Avenal Power Center, LLC has applied for a Prevention of Significant Deterioration (PSD) permit under the federal Clean Air Act (CAA), 42 U.S.C. Section 7401 et seq., for the Avenal Energy Project, a new power plant that will generate 600 megawatts (MW, nominal) of electricity while firing natural gas. The power plant will be located in Kings County, California, within the San Joaquin Valley Air Pollution Control District. The proposed PSD permit is consistent with the requirements of the PSD program for the following reasons:

- The proposed permit requires the Best Available Control Technology (BACT) for Nitrogen Oxides (NO_2), Carbon Monoxide (CO), Total Particulate Matter (PM) and Particulate Matter under 10 micrometers (PM_{10});

- The proposed emission limits will protect the National Ambient Air Quality Standards (NAAQS) for NO_2, CO, and PM_{10}. There is no NAAQS set for Total Particulate Matter (PM);

- The facility will not adversely impact soils and vegetation, or air quality, visibility, and deposition in Class I areas, which are parks or wilderness areas given special protection under the Clean Air Act;

- Formal consultation with the U.S. Fish and Wildlife Service under Section 7 of the federal Endangered Species Act (ESA) concerning the Avenal Energy Project is ongoing and is nearing completion. After completion of the ESA Section 7 consultation process, EPA Region 9 will ensure compliance with ESA Section 7 requirements prior to its issuance of a final PSD permit decision for the Avenal Energy Project.

1. Purpose of this Document

This document serves as the Statement of Basis and Ambient Air Quality Impact Report for the proposed PSD permit for the Avenal Power Center, LLC's Avenal Energy Project. This document describes the legal and factual basis for the proposed permit per 40 CFR 124.7, including requirements under the PSD regulations at 40 CFR 52.21.

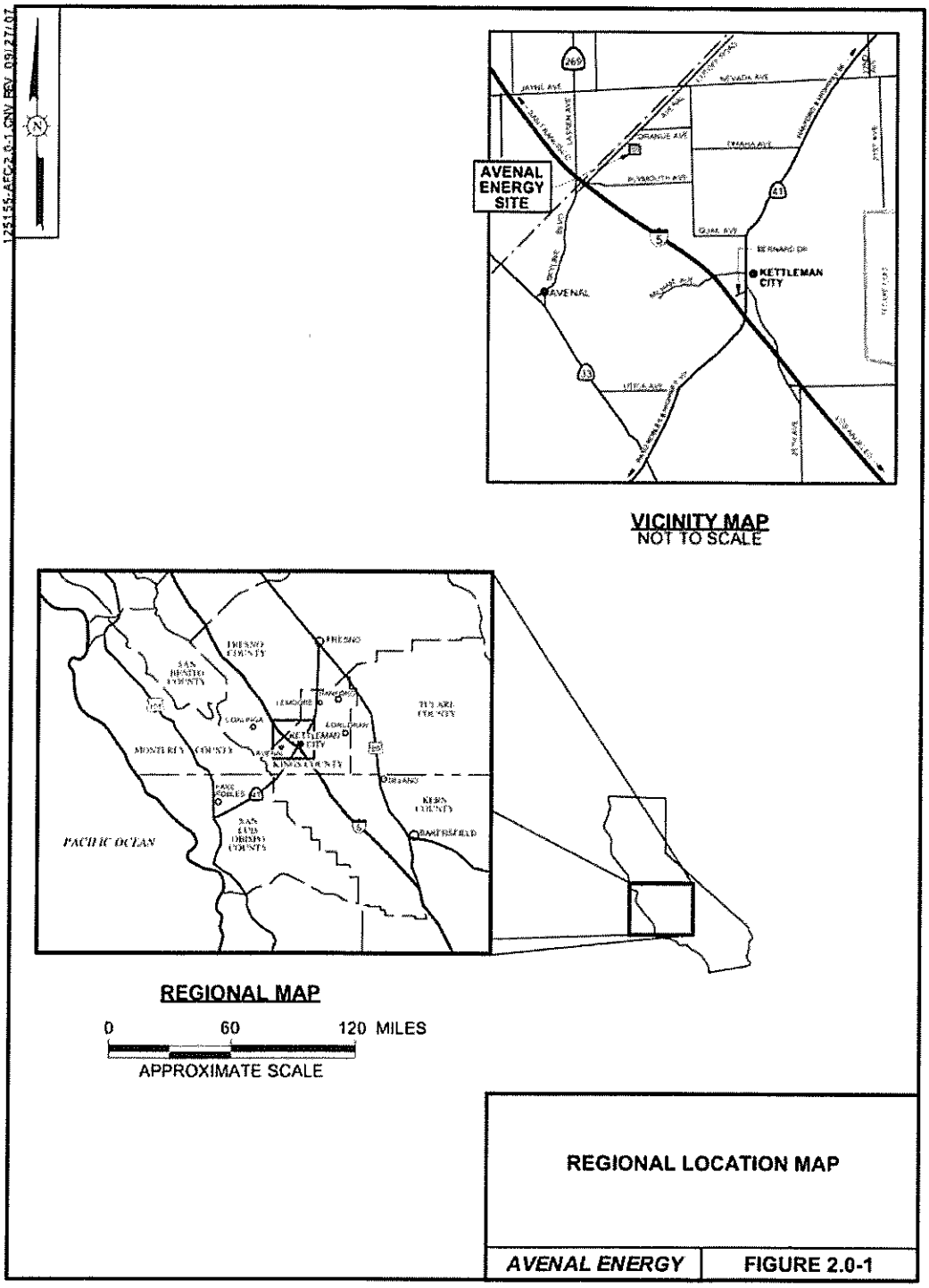
2. Applicant

Avenal Power Center, LLC
500 Dallas Street, Level 31
Houston, TX 77002

3. Project Location

The proposed location for the Avenal Energy Project (or Facility) constitutes the majority of the northeast quarter of Section 19, Township 21 South, Range 18 East, Mt. Diablo Base and Meridian. The proposed site is located approximately 2 miles east of Interstate 5, on a 148-acre parcel, in Kings County, California, surrounded by open farmland except for the City of Avenal water treatment facility to the Northeast. The San Luis Canal – California Aqueduct (Canal) right-of-way abuts the northeast corner of the parcel. The parcel, Kings County Assessor's Parcel Number (APN) 36-170-035, is currently in agricultural production, is zoned industrial by the City of Avenal and is owned by the applicant. The proposed project is within the San Joaquin Valley Air Pollution Control District (APCD).

The map on the following page shows the approximate location of the proposed Avenal Energy Project.


AVENAL ENERGY SITE
KETTLEMAN CITY
AVENAL
VICINITY MAP
NOT TO SCALE
FRESNO COUNTY
SAN BENITO COUNTY
MONTEREY COUNTY
KINGS COUNTY
TULARE COUNTY
KERN COUNTY
SAN LUIS OBISPO COUNTY
PACIFIC OCEAN
REGIONAL MAP
0
60
120 MILES
APPROXIMATE SCALE
REGIONAL LOCATION MAP
AVENAL ENERGY
FIGURE 2.0-1

4. Project Description

The Avenal Power Center, LLC has submitted to EPA an application for a PSD permit for an approval to construct the Avenal Energy Project to produce approximately 600 megawatts (MW, nominal) net electrical output from natural gas-fired combined-cycle generating equipment. The Avenal Power Center, LLC also has submitted applications for state and local construction approvals, respectively referred to as an Application for Certification (AFC) submitted to the California Energy Commission (CEC)[1] and an application for a Determination of Compliance (DOC) submitted to the San Joaquin Valley APCD.[2]

The PSD application submittal was compiled from the CEC AFC sections as follows: 2.0 (Project Description and Engineering), 6.2 (Air Quality), 6.4.2 (Agriculture and Soils), 6.6.2 (Biological Resources), 6.9.3 (Land Use), 6.10.2 (Socioeconomic Resources), and 6.16 (Public Health). Furthermore, throughout the PSD application review and permit preparation process, EPA also considered information provided by the applicant that was presented in the AFC process (i.e., supplement to the AFC, data responses) and that was presented in the San Joaquin Valley APCD's DOC process (i.e., engineering evaluation, Preliminary DOC, Final DOC). For a more detailed description of the facility design, please see Section 2.0 of Avenal Energy Project's AFC to the CEC[3].

The facility will be operated in combined-cycle mode because two combustion turbine generators (CTGs) will connect to a dedicated heat recovery steam generator (HRSG), where hot combustion exhaust gas will flow through a heat exchanger to generate steam. The facility will be equipped with natural gas-fired duct burners to augment steam production during peaking operation.

Electrical power will be generated from the combustion of natural gas in two 180 MW (nominal) CTGs. Exhaust from each gas turbine will flow through the dedicated HRSG to produce steam to power a shared 300 MW (nominal) Steam Turbine Generator (STG).

The following figures show the equipment schematics and process schematics of the proposed Avenal Energy Project.

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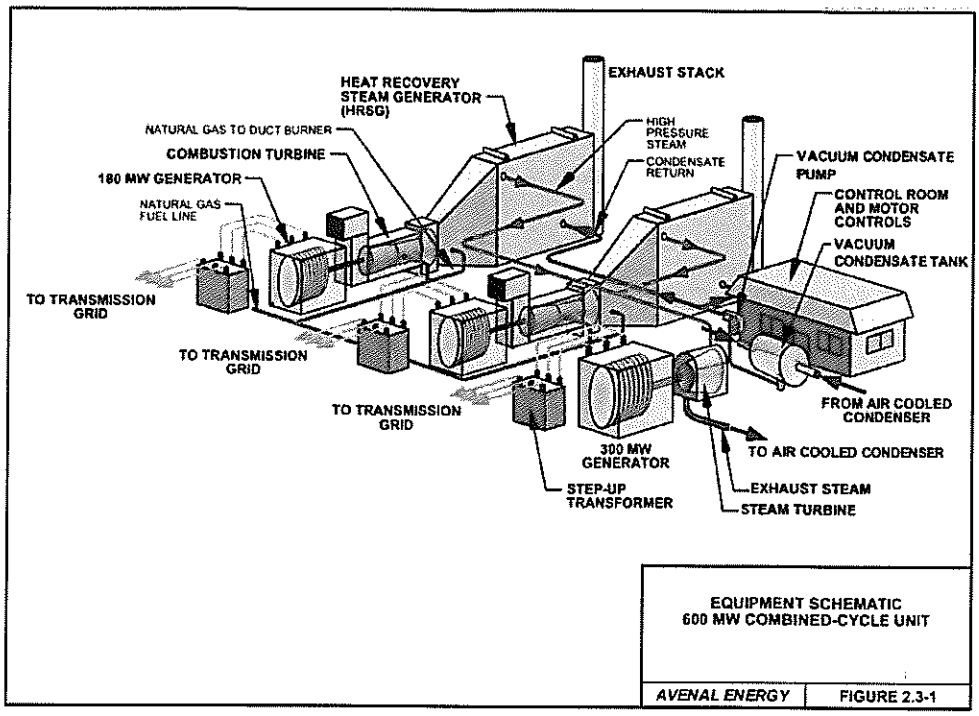
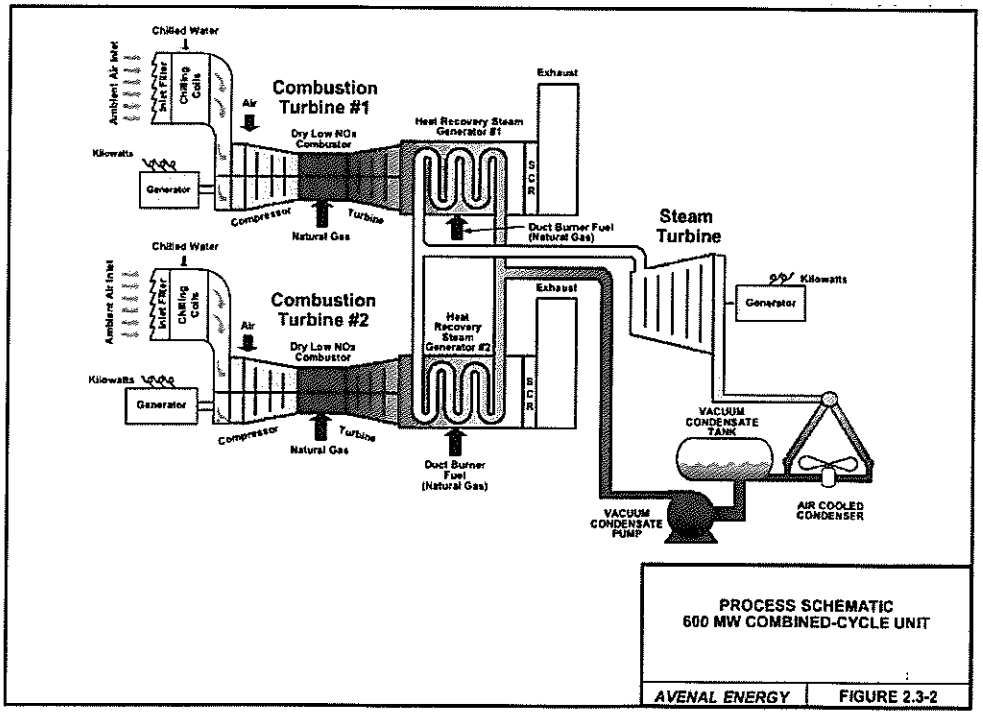
[1] Avenal Energy Power Plant Licensing Case (08-AFC-01), http://www.energy.ca.gov/sitingcases/avenal/index.html
[2] San Joaquin Valley APCD, Project # C-1080386.
3 CEC 08-AFC-01, Documents and Reports, http://www.energy.ca.gov/sitingcases/avenal/documents/index.html



EQUIPMENT SCHEMATIC
600 MW COMBINED-CYCLE UNIT

AVENAL ENERGY | FIGURE 2.3-1



PROCESS SCHEMATIC
600 MW COMBINED-CYCLE UNIT

AVENAL ENERGY | FIGURE 2.3-2

Air Pollution Control

Each of the Avenal Energy Project's CTGs will be equipped with dry low-NOx (DLN) combustors. The facility will install selective catalytic reduction (SCR) and oxidation catalyst (Ox-Cat) systems. SCR will be used to reduce NO_x emissions from the combustion turbine generators. Diluted ammonia vapor will be injected into the exhaust gas before it reaches the SCR catalyst located in each of the two HRSGs. The catalysts facilitate reaction of the ammonia with NO_x to create atmospheric nitrogen (N_2) and water.

The Avenal Energy Project will use an Ox-Cat to reduce emissions of carbon monoxide and volatile organic compounds. Although carbon monoxide is regulated in this proposed PSD permit, volatile organic compounds will be regulated by a New Source Review (NSR) permit issued by the San Joaquin Valley APCD, as explained in Section 5 below.

Additional equipment includes a natural gas-fired auxiliary boiler equipped with an ultra low-NOx burner, a natural gas-fired emergency generator equipped with a non-selective catalytic reduction (NSCR) system, and a diesel-fired emergency firewater pump engine with a turbocharger and an intercooler/aftercooler.

Permitted Equipment

Table 1 lists the equipment that will be regulated by this PSD permit:

Table 4-1: Equipment List

Two natural gas-fired GE 7FA combustion turbine generators (CTG) with Heat Recovery Steam Generators (HRSG)	• Rated at 180 MW (nominal) output each, with a maximum heat input rate of 2,356.5 MMBtu/hr (HHV) each • Each equipped with DLN combustors • Each vented to a dedicated HRSG with duct burners and a shared 300 MW Steam Turbine Generator (STG) • Equipped with SCR and Ox-Cat systems to reduce nitrogen oxides, and to reduce carbon monoxide
Auxiliary Boiler	• 37.4 MMbtu/hr (HHV) with ultra low-NO_x burner
Emergency natural gas-fired Internal Combustion (IC) Engine	• 550 KW (860 hp) • Equipped with non-selective catalytic reduction (NSCR) to reduce nitrogen oxides, carbon monoxide
Emergency Diesel-fired Firewater Pump IC Engine	• 288 hp • Equipped with a turbocharger and an intercooler/aftercooler

5. Emissions from the Proposed Project

This chapter describes what pollutants are covered by the PSD program in this area, the PSD applicability thresholds, and our conclusion that NO_2, CO, PM, and PM_{10} will be regulated by the permit. For a more detailed description of the air quality pollutant emissions, please see Section 6.2 of Avenal Energy Project's AFC to the CEC[4] and the San Joaquin Valley APCD Final DOC[5].

The Clean Air Act contains two preconstruction permitting programs. First, the PSD program is intended to protect air quality in "attainment areas"[6], which are areas that meet the National Ambient Air Quality Standards (NAAQS). The U.S. EPA is responsible for issuing PSD permits for pollutants in attainment with the NAAQS in the San Joaquin Valley APCD.

Second, the NSR program applies in areas where pollutant concentrations exceed the NAAQS ("nonattainment areas"). The San Joaquin Valley APCD implements the

[4] *Ibid.*
[5] San Joaquin Valley APCD, Project # C-1080386, Section VII, General Calculations
[6] PSD also applies to pollutants where the status of the area is uncertain (unclassified), which is not relevant for this project.

nonattainment NSR program for facilities emitting nonattainment pollutants, and their precursors (e.g., volatile organic compounds and nitrogen oxides are precursors to ambient ozone). Pollutants with concentrations that are in nonattainment with the NAAQS will be regulated in the NSR permit issued by the San Joaquin Valley APCD. Table 5-1 presents the pollutant attainment status for the San JoaquinValley APCD.

Table 5-1: National Ambient Air Quality Standard Attainment Status for San Joaquin Valley APCD

Pollutant	Attainment Status	Permit Program
Nitrogen Dioxide (NO_2)	Attainment	PSD
Oxides of Sulfur (SO_x)	Attainment	PSD
Carbon Monoxide (CO)	Attainment	PSD
Particulate Matter (PM)	n/a[7]	PSD
Particulate matter under 10 micrometers diameter (PM_{10})	Attainment	PSD
Particulate Matter under 2.5 micrometers diameter ($PM_{2.5}$)	Nonattainment	NSR
Ozone	Nonattainment[8]	NSR

The PSD program (40 CFR 52.21) applies to "major" new sources of attainment pollutants. A fossil fuel-fired steam electric plant with a heat input capacity of 250 MMBtu/hr or greater, such as this facility, that emits or has the potential to emit (PTE) 100 tons per year (tpy) or more of any pollutant regulated under the Clean Air Act[9], is defined as a "major source."

6. Applicability of the Prevention of Significant Deterioration Regulations

The estimated emissions in Table 6-1 show that the Facility will be a major source for NO_x, CO, PM, and PM_{10},. The annual emission data in Table 6-2 (based on allowable operations) are based on the applicant's maximum expected emissions, while considering

[7] There is no NAAQS for PM. However, in addition to other pollutants for which no NAAQS have been set, PM is listed as a regulated pollutant with a defined applicability threshold under the PSD regulations (40 CFR 52.21).
[8] Because NO_x is also a precursor to ozone in this area, it will be regulated by a separate San Joaquin Valley APCD ozone non-attainment NSR permit in addition to this PSD permit.
[9] Other types of "source categories" are subject to either the same 100 tpy threshold or a 250 tpy threshold.

hour restrictions on equipment usage and while including emissions from startup and shutdown cycles. The applicant assumes that all emissions of PM are of diameter less than 10 microns (i.e., PM_{10}).

Once a source is considered major for a PSD pollutant, PSD also applies to any other regulated pollutant that is emitted in a significant amount. The data in Table 6-1 show that emissions of oxides of sulfur (SO_x) will be less than the major source threshold and less than the significant emission rate. Therefore, PSD does not apply for SO_x. Estimated emissions from each emission unit of the PSD-regulated pollutants are listed in Table 6-2.

Table 6-1: Avenal Energy Project Estimated Emissions (tons/year, or tpy) and PSD Applicability

Pollutant	Estimated Annual Emissions (tons/year)	Major Source Threshold (tons/year)	Significant Emission Rate (tons/year)	Does PSD apply?
CO	602.7	100	100	Yes
NO_2	144.3	100	40	Yes
PM/PM_{10}	80.7	100	25/15	Yes
SO_x	16.7	100	40	No

Table 6-2: Avenal Energy Project Estimated Emissions (tpy) of PSD-regulated pollutants by Emission Unit[10]

	CO	NO_x	PM/PM_{10}
Total Facility	**602.7**	**144.3**	**80.7**(a)
CTG+HRSG (2)	601.8	143.9	80.7
Auxiliary Boiler	0.86	0.26	0.12
Emergency Natural Gas-fired IC Engine	0.029	0.048	0.002
Emergency Diesel-fired Firewater Pump IC Engine	0.007	0.054	0.001

[10] Emission units' tpy values are rounded-up for estimated emissions purposes.

(a) Emission units' PM/PM_{10} tons per year values are rounded up for estimated emissions purposes.

7. Best Available Control Technology

This chapter describes the Best Available Control Technology (BACT) for the control of NO_x, CO, PM, and PM_{10} emissions from this facility. Section 169(3) of the Clean Air Act defines BACT as follows:

> "The term 'best available control technology' means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under the Clean Air Act emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of BACT result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 (NSPS) or 112 (NESHAPS) of the Clean Air Act."

In accordance with 40 CFR 52.21(j), a new major stationary source is required to apply BACT for each regulated NSR pollutant that it would have the potential to emit (PTE) in significant amounts. BACT is defined as "an emission limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under [the] Act ... which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable for such source." 40 CFR 52.21(b)(12). In no event may application of BACT result in emissions of any pollutant which would exceed emissions allowed by any applicable New Source Performance Standards (NSPS) under 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants (NESHAP) under 40 CFR Part 61. See id. EPA outlines the process it will use to do this case-by-case analysis (referred to as "top-down" BACT analysis) in a June 13, 1989 memorandum. The top-down BACT analysis is a well-established procedure that the Environmental Appeals Board (EAB) has consistently considered as guidance in adjudicating PSD permit appeals. See, e.g., *In re Knauf*, 8 E.A.D. 121, 129-31 (EAB 1999); In re Maui Electric, 8 E.A.D. 1, 5-6 (EAB 1998).

In brief, the top-down process provides that all available control technologies be ranked in descending order of control effectiveness. The PSD applicant first examines the most stringent technology. That technology is established as BACT unless it is demonstrated

that technical considerations, or energy, environmental, or economic impacts, justify a conclusion that the most stringent technology is not achievable for the case at hand. If the most stringent technology is eliminated, then the next most stringent option is evaluated until BACT is determined. The top-down BACT analysis is a case-by-case exercise for the particular source under evaluation. In summary, the five steps involved in a top-down BACT evaluation are:

1. Identify all available control options with practical potential for application to the specific emission unit for the regulated pollutant under evaluation;

2. Eliminate technically infeasible technology options;

3. Rank remaining control technologies by control effectiveness;

4. Evaluate the most effective control alternative and document results; if top option is not selected as BACT, evaluate next most effective control option; and

5. Select BACT, which will be the most stringent technology not rejected based on technical, energy, environmental, and economic considerations.

With respect to the Avenal Energy Project, BACT is required for NO_x, CO, PM, and PM_{10} for the following emission units: the two combustion turbine generators, the 37.4 MMBtu/hr auxiliary boiler, the 550 kW natural gas-fired emergency IC engine, and the 288 hp diesel-fired firewater pump emergency IC engine. Table 7-1 lists the BACT determinations for NO_x, CO, PM, and PM_{10} from the CTGs, boiler, and engines. For those emission units fired on natural gas, PUC-quality pipeline natural gas is required.

Table 7-1: Summary of BACT Limits and Requirements for Testing and Monitoring[11]

	NO_x	CO	PM and PM_{10}	Restrictions on Usage
2-Combustion Turbines (each, no duct burning)	• 13.55 lb/hr • 1-hr average • 2.0 ppmvd, 15% O_2 • CEMS • Annual Performance Testing • Quarterly and Annual RATA for CEMs	• 8.35 lb/hr • 1-hr average • 2.0 ppmvd, 15% O_2 • CEMS • Annual Performance Testing • Quarterly and Annual RATA for CEMs	• 8.91 lb/hr • 12-mo. average • PUC natural gas • Monthly natural gas fuel testing (sulfur < 0.36 gr/100 scf 12-mo. average) • Annual Performance Testing	• Startup/Shutdown hours 1,248 hrs/yr operations, cumulative (i.e., annually for both turbines combined)
2-Combustion Turbines (each, with duct burning)	• 17.20 lb/hr • 1-hr average • 2.0 ppmvd, 15% O_2	• 13.55 lb/hr • 1-hr average • 2.0 ppmvd,15% O_2	• 11.78 lb/hr • 12-mo average • PUC natural gas • Monthly natural gas fuel testing (sulfur < 0.36 gr/100 scf 12-mo. average) • Annual Performance Testing	• Total duct burning, each ≤ 800 hrs/yr
Boiler 37.4 MMBtu/hr (HHV)	• 9 ppm, 3% O_2 • 1-hr average • Annual Performance Testing	• 50 ppm, 3% O_2 • 1-hr average • Annual Performance Testing	• PUC natural gas • Monthly natural gas fuel testing (sulfur < 0.36 gr/100 scf 12-mo. average)	• 1,248 hrs/yr • Non-resettable elapsed time meter
Natural Gas-fired IC engine 550 kW (860 hp)	• 1.0 g/hp-hr • Performance Testing, upon EPA notification	• 0.6 g/hp-hr • Performance Testing, upon EPA notification	• 0.34 g/hp-hr • PUC natural gas • Performance Testing, upon EPA notification • Monthly natural gas fuel testing (sulfur < 0.36 gr/100 scf 12-mo. average)	• 50 hrs/year • Non-resettable elapsed time meter
Diesel-fired Firewater Pump 288 hp	• 3.4 g/hp-hr • Performance Testing, upon EPA notification	• 0.447 g/hp-hr • Performance Testing, upon EPA notification	• Exclusive use of ultra low sulfur fuel, not to exceed 15 ppmvd sulfur • Fuel Supplier Certification • Performance Testing, upon EPA notification	• 50 hrs/year • Non-resettable elapsed time meter

[11] Avenal Energy Project must keep all records of all testing, fuel use, and fuel testing requirements for a period of five (5) years and must report excess emissions to EPA on a quarterly basis.

7.1. BACT for Natural Gas Combustion Turbine Generators

7.1.1. Oxides of Nitrogen

NO_x is formed when nitrogen and oxygen are present at high temperatures in the combustion process. The applicant has proposed a 2.0 parts per million by volume on a dry basis (ppmvd) NO_x limit, averaged over a 1-hour time period, excluding startups and shutdowns. BACT for periods of startup and shutdown are discussed in Section 7.1.4. The SCR and DLN combustors proposed by the applicant are well-established control technologies for this type of source. Excess ammonia emissions from the SCR (ammonia slip) will be limited to 10 ppmvd. Table 7-2 shows some determinations for NO_x emission limitations at similar facilities. EPA agrees that 2.0 ppmvd NO_x represents BACT, as we are not aware of any similar operating facility with a lower emission rate that has been permitted or achieved in practice.

7.1.2. Carbon Monoxide

Carbon monoxide (CO) occurs due to incomplete combustion of natural gas in the gas turbine, and in the duct burners when they are operated. The applicant has proposed to install an oxidation catalyst (Ox-cat) to control CO. The initial application stated that the facility will achieve 4.0 ppmvd CO over a 1-hour averaging period during periods with and without duct firing, excluding startups and shutdowns. However, public comments were received during the San Joaquin Valley APCD Preliminary DOC process. Subsequent to the closing of the public comment period, the applicant proposed 2.0 ppmvd CO over a 1-hour averaging period during periods with and without duct firing, excluding startups and shutdowns. BACT for periods of startup and shutdown are discussed in Section 7.1.3. Table 7-3 shows several recent BACT determinations that have the lowest limits achieved at similar facilities. Similar facilities using oxidation catalysts have been permitted at between 2.0 to 4.0 ppm for CO. We believe 2.0 ppmvd CO is the lowest emission rate that has been included in a permit or in practice for a facility of this type.

Table 7-2: Select NOx Determinations for Combustion Turbines/Duct Burners*						
Facility	**Location**	**NOx Limits**	**Avg Period**	**Control**	**Permit Date**	**Source**
Blythe Energy LLC (Blythe II)	California	2.0 ppm	3-hr	SCR/DLN	Apr 2007	PSD permit
Elk Hills Power	California	2.5 ppm	1-hr	SCR/DLN or SCONOX	Jan 2006	PSD permit modification
La Paloma - PG&E	California	2.5 ppm	1-hr	SCR	Dec 2004	PSD permit modification
Los Esteros - Calpine	California	2.0 ppm	1-hr	SCR & water injection	Mar 2005	Local construction permit (PDOC)
Los Medanos - Calpine	California	2.5 ppm	1-hr	SCR	11/9/2004	Title V permit
Palomar Escondido - Sempra	California	2.0 ppm	3-hr when duct burners firing or transient periods; 1-hr all other times	SCR/DLN	Dec 2002	Final Determination of Compliance
Pastoria Energy LLC	California	2.5 ppm	1-hr	SCR/DLN or XONON	Dec 2004	PSD permit
San Joaquin Valley Energy Center	California	2.0 ppm	1-hr	SCR/DLN	Aug 2006	PSD permit
Mountainview Power Company	California	2.0 ppm	1-hr	SCR	2005	PSD permit modification
Sacramento Municipal Utility District	California	2.0 ppm	1-hr	SCR	--	CARB BACT Database
Three Mountain Power	California	2.5 ppm	1-hr	SCR	10/10/2003	CARB BACT Database
Western Midway Sunset	California	2.0 ppm	1-hr	SCR	12/12/.2003	CARB BACT Database
Magnolia Power Project	California	2.0 ppm	3-hr	SCR	5/27/2003	CARB BACT Database
McDonough Combined-Cycle Generating Units	Georgia	6.0 ppm (applies btw May 1 through Sept 30 each year) 15 ppm	30-day rolling avg	SCR/Low NOx burners	1/7/2008 (Effective date)	Title V/Part 70 Operating Permit Amendment (non-PSD)
Rocky Mountain Energy Center	Colorado	3.0 ppm	Hourly	SCR/Low NOx burners	5/2/2006	RBLC # CO-0056
PSO Southwestern Power Plant	Oklahoma	9.0 ppm	--	DLN	2/9/2007	RBLC # OK-0117
Sierra Pacific Power Company	Nevada	2.0 ppm	3-hr	SCR	8/16/2005	RBLC # NV-0035
Wanapa Energy Center	Oregon	2.0 ppm	3-hr	SCR/DLN	8/8/2005	RBLC # OR-0041
Crescent City Power, LLC	Louisiana	3.0 ppm	Annual	SCR/Low NOx burners	6/6/2005	RBLC # LA-0192
Berrien Energy, LLC	Michigan	2.5 ppm	24-hr	SCR/DLN	4/13/2005	RBLC # MI-0366
Turner Energy Center, LLC	Oregon	2.0 ppm	1-hr	SCR	1/6/2005	RBLC # OR-0046
Florida Power and Light – Turkey Point	Florida	2.0 ppm	3-run stack test; 24-hr for CEMs	DLN/SCR (natural gas-fired)	2/8/2005	PSD permit & RBLC # FL-0263
BP Cherry Point Cogeneration	Washington	2.5 ppm	3-hr	SCR/DLN	1/11/2005	2004 final PSD permit & RBLC # WA-0328
ANP Blackstone	Massachusetts	2.0 ppm, loads >50%; 3.5 ppmvd, loads >100% + steam augmentation	1-hr	SCR	4/16/1999 (PSD permit)	2005 final Title V permit (conditions from PSD permit) & RBLC # MA-0024

(* ppm values are corrected to 15 percent O_2)

Table 7-3: Recent CO Determinations for Combustion Turbines/Duct Burners *						
Facility	**Location**	**CO Limits**	**Avg Period**	**Emission Control**	**Permit Date**	**Source**
Blythe Energy LLC (Blythe II)	California	4.0 ppm	3-hr	--	Apr 2007	PSD permit
Elk Hills Power	California	4.0 ppm	3-hr	SCR/DLN or SCONOX	Jan 2006	PSD permit modification
La Paloma - PG&E	California	6.0 ppm (10 ppm for loads below 221 MW)	3-hr	Oxidation catalyst	Dec 2004	PSD permit
Los Esteros Energy Center	California	9.0 ppm	3-hr	Oxidation catalyst	Mar 2005	Local construction permit (PDOC)
Los Medanos Energy Center	California	6.0 ppm	3-hr	Oxidation catalyst	11/9/2004	Title V permit
Palomar Escondido - Sempra	California	4.0 ppm	3-hr	Oxidation catalyst	Dec 2002	Local construction permit (PDOC)
Pastoria Energy LLC	California	9.0 ppm	3-hr	SCR/DLN or XONON	Dec 2004	PSD permit
San Joaquin Valley Energy Center	California	4.0 ppm	1-hr	Oxidation catalyst	Aug 2006	PSD permit
Mountainview Power Company	California	--	--	--	2005	PSD permit modification
Sacramento Municipal Utility District	California	4.0 ppm	3-hr	--	--	CARB BACT Database
Three Mountain Power	California	4.0 ppm	3-hr	Oxidation catalyst	10/10/2003	CARB BACT Database
Western Midway Sunset	California	4.0 ppm	3-hr	Oxidation catalyst	12/12/2003	CARB BACT Database
Magnolia Power Project	California	2.0 ppm	1-hr	Oxidation catalyst	5/27/2003	CARB BACT Database
McDonough Combined-Cycle Generating Units	Georgia	1.8 ppm	3-hr	Oxidation catalyst	1/7/2008 (Effective date)	Title V/Part 70 Operating Permit Amendment
Rocky Mountain Energy Center	Colorado	3.0 ppm	--	Oxidation catalyst & good combustion	5/2/2006	RBLC # CO-0056
PSO Southwestern Power Plant	Oklahoma	25.0 ppm	--	Combustion control	2/9/2007	RBLC # OK-0117
Sierra Pacific Power Company	Nevada	3.5 ppm	3-hr	Oxidation catalyst	8/16/2005	RBLC # NV-0035
Wanapa Energy Center	Oregon	2.0 ppm	3-hr	Oxidation catalyst	8/8/2005	RBLC # OR-0041
Crescent City Power, LLC	Louisiana	4.0 ppm	Annual	Oxidation catalyst & good combustion	6/6/2005	RBLC # LA-0192
Berrien Energy, LLC	Michigan	2.0 ppm	3-hr	Oxidation catalyst	4/13/2005	RBLC # MI-0366
Turner Energy Center, LLC	Oregon	2.0 ppm at >70% load; 3.0 ppm at <70% load	3-hr	Oxidation catalyst	1/6/2005	RBLC # OR-0046
Florida Power and Light -- Turkey Point	Florida	4.1 ppm CT normal 7.6 ppm CT + DB	Stack test 3-run avg	Good combustion	2/8/2005	PSD permit & RBLC # FL-0263
		8.0 ppm	24-hr block avg			
BP Cherry Point Cogeneration	Washington	2.0 ppm	3-hr	Oxidation catalyst	1/11/2005	PSD permit & RBLC # WA-0328
ANP Blackstone	Massachusetts	3.0 ppm	1-hr	Oxidation catalyst	4/16/1999 (PSD permit)	2005 final Title V permit (PSD Conditions) & RBLC # MA-0024

(* ppm values are corrected to 15 percent O_2)

7.1.3. Particulate Matter (PM) and Fine Particulate (PM_{10})

Particulate emissions from the gas turbine trains result from fuel sulfur, inert trace contaminants, and incomplete combustion of hydrocarbons. The applicant has assumed, for this proposed project, that combustion emissions of PM are considered equivalent to those of PM_{10} emissions[13], and hence, the analysis in the application is presumed to be for both particulate parameters.[14] We do not believe that any add-on particulate emission controls have been demonstrated in practice for this type of source. Thus, the proposed particulate matter emissions are based on equipment manufacturer emissions information, as well as exclusively firing PUC-quality pipeline natural gas, which is defined in this case to be not more than 1.0 grains per 100 dry standard cubic feet, with an annual average (12-months rolling) of not more than 0.36 grains per 100 dry standard cubic feet. We are aware of similar natural gas-fired facilities and are proposing for BACT to limit particulate emissions (PM and PM_{10}) to 8.91 lbs/hr from each turbine without duct burner firing, and 11.78 lbs/hr with duct burner firing.

7.1.4. Startup and Shutdown Emissions

Startup and shutdown periods are a normal part of the operation of combined-cycle natural gas-fired power plants. BACT applies during all modes of operation, including startup and shutdown periods. The BACT limits established in the previous sections for the gas turbines are for steady-state operation, which are not technically feasible during startup and shutdown of the gas turbines. Therefore, alternate BACT limits must be specified for these modes of operation.

Startup and shutdown periods, when compared to emissions generated at steady-state operation, generate elevated emissions for various reasons. For example, lower turbine loads can result in incomplete combustion and lead to excess CO emissions. Also, decreased temperatures during these periods that fall outside of the optimal temperature range for the SCR control can cause too little or too much ammonia injection in the SCR system which may result in excess NOx emissions or ammonia slip. Furthermore, the decreased temperatures that fall outside of the optimal temperature range for the control equipment (SCR and Ox-cat) may lead to non-operation of the control equipment for all or part of the duration of startup and shutdown periods. Since startup and shutdown emissions from the gas turbines are much higher in both concentration (ppm) and mass rates (lb/hr), it is important to quantify and minimize emissions during these periods.

[13] PM_{10} emissions include both front and back half as those terms are used in U.S. EPA Method 5.
[14] Applicant March 13, 2008 response letter to U.S. EPA.

As part of our evaluation, we reviewed the emission estimates information provided in the PSD application, other Region IX PSD permit actions, and the San Joaquin Valley APCD engineering evaluation[15].

The estimates are based on data provided by the gas turbine vendor and engineering assumptions, as well as what was considered in the air quality impacts analysis, and are specific to the configuration and operational characteristics for the proposed Avenal facility. For the Avenal Energy Project, hourly emissions are limited for each CTG/HRSG startup and shutdown event, as well as for the combined emissions of both CTG/HRSG whenever the equipment startup or shutdown events occur during the same hour. The total hours of any startup and shutdown event are limited, and a shutdown event also is limited. Furthermore, the combined hours of both CTG/HRSG operations in startup and shutdown modes are limited. Table 7-4 presents these emission limits and hours duration for the Avenal Energy Project.

Table 7-4: BACT Limits for Startup and Shutdown, For Each CTG/HRSG and for Both CTG/HRSG

	NO_x	CO
Each CTG and HRSG Startup / Shutdown	160 lb/hr	1,000 lb/hr
Both CTG and HRSG Combined Startup / Shutdown	240 lb/hr	1,902 lb/hr

	Event Duration	Annual Limit for Both CTG and HRSG Combined
Each CTG and HRSG Startup / Shutdown	6.0 hours	1,248 hours/yr
Each CTG and HSRG Shutdown	2.0 hours	

Based on the above information, EPA proposes these emission levels for startup and shutdown periods to represent BACT for the proposed Avenal Energy Project.. If continuous emissions monitoring information demonstrates that these emission rates are not achievable, then these BACT limits, as well as the air quality impact modeling based on the proposed emission limits, must be re-evaluated.

[15] San Joaquin Valley APCD Project #C-1080386, Final Determination of Compliance.

7.2. BACT for Auxiliary Boiler

The permit applicant has proposed a BACT emission rate of 9 ppmvd NO_x and 50 ppmvd CO for the 37.4 MMBtu auxiliary boiler (used to reduce startup times by providing additional steam for facilitating startup of the turbines). We have determined that the NOx emissions rate is also the lowest achieved by any similar source included among recent U.S. EPA RACT/BACT/LAER Information Clearinghouse (RBLC) database entries.[16] Therefore, we have determined that 9 ppmvd NO_x represents BACT for these units.

For particulate matter emissions, we are not aware of any post-combustion emission controls that are feasible for the small amount of fine particulate emissions expected from small boilers, and we have set BACT for fine particulates based on the combustion of natural gas. The proposed permit also limits the maximum sulfur content of the fuel and the 12-month rolling average sulfur content of the fuel for the PUC pipeline quality natural gas, which would therefore limit any sulfate particulate emissions.

7.3. BACT for Emergency Internal Combustion Engines

The 550 kW (860 hp) emergency natural gas-fired internal combustion (IC) engine will be equipped with a nonselective catalytic reduction (NSCR) system, and its usage will be limited to 50 hours per year of use. The 288 hp emergency firewater pump will meet the applicable California Tier emission standard for NO_x, CO, and PM_{10}, and its usage (for emergencies) will also be limited to 50 hours per year of use. Non-emergency use of the firewater pump will be limited to the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 – "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". We are not aware of any similar, low-use emergency IC engines with lower emission rates, and we have included the applicant's proposed emission limits in the proposed permit. While some IC engines in the South Coast BACT database have used an add-on air pollution control device, none are operated as infrequently as these units (maximum of 50 hours per year). Therefore, EPA determines that these performance standards without add-on control devices represent BACT for the firewater pump engine. We are also limiting fuel use to ultra-low sulfur fuel with a maximum sulfur content of the fuel of 15 ppmvd in order to limit the fine particulate emissions from the engines.

[16] Our search covered 2005, 2006, and 2007 up to the most recent entry dated May 3, 2007, for units listed under process type 13.1.

8. Air Quality Impacts

The PSD regulations require an examination of the impacts of the proposed project on ambient air quality. The applicant must determine, using air quality models, whether emissions of the PSD-regulated air pollutants would cause a violation of (1) the NAAQS or (2) the applicable PSD increments (explained below in Section 8.4). This chapter includes a discussion of the background data, air quality modeling, and our conclusion that the project will not adversely affect air quality.

8.1. Background Ambient Air Quality and Conditions

The air quality impact analysis used meteorological data from the Hanford, CA station. Existing ambient air quality data for the project during 2004-2006 were obtained from the following monitoring sites nearest to the proposed Avenal Energy Project as follows: PM_{10} data from the Corcoran-Patterson Avenue site, CO data from the Visalia-North Church Street site, and ozone and NO_2 from the Hanford-South Irwin Street site. The Corcoran and Hanford stations are operated by the San Joaquin Valley APCD; the Visalia station is operated by the California Air Resources Board.

8.2. Modeling Methodology

The applicant modeled impacts of the facility using AERMOD in accordance with the EPA Guidelines on Air Quality Models (as incorporated in Appendix W of 40 CFR Part 51). The modeling analyses included the maximum air quality impacts during start-ups and shut-downs, as well as a variety of conditions to determine worst-case short-term air impacts. These variables included operating levels and duct firing, as well as determining emissions from maximum plant operation for modeled annual impacts. The applicant conducted a Good Engineering Practice (GEP) stack height analysis using the EPA Building Profile Input Program – Plume Rise Model Enhancements (BPIP-PRIME, version 04274) to calculate the impacts of building downwash. The stack parameters are described in Section 6.2. Table 8-1 presented the results of the modeling analysis.

Table 8-1: Summary of Air Quality Modeling Results

Pollutant	Averaging Period	Normal Operations AERMOD	Startup/Shutdown AERMOD	Fumigation SCREEN3
NO_2	Annual	0.6	(a)	(b)
PM_{10}	24-hour	2.9	2.9	1.2
CO	1-hour	154	2,175	6.4
CO	8-hour	12.3	337	3.8

(a) Not applicable; startup/shutdown emissions included in the modeling for annual average.
(b) Not applicable; inversion breakup is a short-term phenomenon and as such is evaluated only for short-term averaging periods.

8.3. Significant Impact Levels (SILs) Analysis

EPA has established Significant Impact Levels (SILs) to characterize air quality impacts. A SIL is the ambient concentration resulting from the facility's emissions, for a given pollutant and averaging period, below which the source is assumed to have an insignificant impact. For the maximum modeled concentrations below the SIL, no further air quality analysis is required for the pollutant. For maximum concentrations that exceed the SIL, a cumulative modeling analysis, that incorporates the combined impact of nearby sources of air pollution, is required to determine compliance with the NAAQS and PSD increments.

Table 8-2 presents a summary of the modeled concentrations compared to the SIL for each pollutant and its respective NAAQS averaging period. Based on the results, project impacts are below the SIL, with the exception of the 1-hour CO impacts. Modeled impacts of NO_2 (annual averaging period), PM_{10} (24-hour averaging period), and CO (8-hour averaging period) modeled impacts are below the SIL. The 1-hour CO modeled impact is 2,175 $\mu g/m^3$ compared to the SIL threshold of 2,000 $\mu g/m^3$. Therefore, compliance with the NAAQS and PSD increments was further evaluated for the CO 1-hour averaging period.

Table 8-2: Summary of Modeled Significant Impact Levels

Pollutant	Averaging Period	Background ($\mu g/m^3$)	Maximum Project Impact ($\mu g/m^3$)	Significant Impact Level (SIL) ($\mu g/m^3$)
NO_2	Annual	22.6	0.5	1
PM_{10}	24-hour	304	2.9	5
CO	1-hour	4,111	2,175	2,000
CO	8-hour	2,489	337	500

8.4. National Ambient Air Quality Standards and PSD Class II Increment Consumption Analysis

PSD increments are limits on cumulative air quality degradation. They are set to prevent the air quality in areas with pollutant concentrations lower than the NAAQS from being degraded to the level of the NAAQS. Increments have been established for some PSD pollutants, such as NO_2 and PM_{10}, however, there are currently no PSD increments set for CO.

The Avenal Energy Project impacts are below the SIL for all pollutants, with the exception of the 1-hour CO impacts. The CO significant impact does not require a PSD increment consumption analysis because there is not a maximum allowable increment for CO. Furthermore, the total potential CO impact is below the NAAQS. Table 8-3 presents a summary of the CO modeled impacts compared to the NAAQS.

Table 8-3. Summary of CO Modeled Impacts

Pollutant	Averaging Period	Background ($\mu g/m^3$)	Maximum Project Impact ($\mu g/m^3$)	Total Impact ($\mu g/m3$)	NAAQS ($\mu g/m^3$)
CO	1-hour	4,111	2,175	6,286	40,000

8.5. Class I Analysis, Visibility and Deposition

The PSD regulations contain two levels for the NO_2 increments that apply to this project: one for Class II areas and another for Class I areas. Class I areas are national or regional areas of special natural, scenic, recreational, or historic value. These areas are given special protection through stricter increments, as well as other protections discussed further in Section 9. Currently, all areas of the United States that are not designated as Class I areas are designated as Class II areas.

The nearest Class I areas are located as follows:

- Pinnacles National Monument: 113 km
- Sequoia National Park: 113 km
- Ventana Wilderness: 127 km

The USEPA provided the appropriate Federal Land Managers (FLMs) with the Project modeling protocol to determine if a Class I area impact analysis is required for a proposed new source. The FLMs evaluated the Project in terms of its maximum emissions and distance to each Class I area. The FLMs confirmed that an analysis of potential impacts on impairment to visibility, deposition, or other air quality-related values at Class I areas is not required for the Project; this is based on the information that the Class I areas listed above are beyond 100 km and the the proposed project is unlikely to have an impact on these areas,

9. Additional Impact Analysis

In addition to assessing the ambient air quality impacts expected from a proposed new source, the PSD regulations require that EPA evaluate other potential impacts on 1) soils and vegetation; 2) visibility impairment analysis; and 3) growth.

9.1 Soils and Vegetation

For most types of soils and vegetation, ambient concentrations of criteria pollutants below the secondary NAAQS will not result in harmful effects because the secondary NAAQS are set to protect public welfare, including animals, plants, soils and materials. Two sections of the CEC's AFC provide a discussion of the Facility's potential impacts on soils and vegetation: Section 6.4 –Agriculture and Soils (pp. 6.4-8 - 6.4-9) and Section 6.6 – Biological Resources. These sections were included as part of the PSD permit application.

Additionally, the applicant used the EPA "Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils and Animals" (1980) [17] to determine if maximum

[17] Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals," EPA 450/2-81-078,

modeled ground-level concentrations of NO_2 and CO could have an impact on plants, soils, and animals. As shown in Table 9-1, the maximum modeled concentrations from the Project are well below (i.e., ranging between 0.02% and 34%) the thresholds. (The modeled maximum concentrations are presented in Table 6.2-31 of the Air Quality Section 6.2 in the portion of the CEC application, which was submitted as part of the PSD permit application.)

Based on our review of the analyses provided by the applicant as described above, we do not expect any adverse impacts on plants and soils.

Table 9-1
Project Maximum Concentrations and EPA Guidance Levels

Criteria Pollutant and Guidance Averaging Time	EPA Screening Concentration ($\mu g/m^3$)	Modeled Maximum Concentrations ($\mu g/m^3$)	Averaging time
NO_2 4-Hours	3,760	190	1 hour
NO_2 1-Month	564	190	1 hour
NO_2 Annual	94	0.5	Annual
CO Weekly	1,800,000	337	8 hour

9.2 *Visibility Impairment Analysis*

U.S. EPA's "New Source Review Workshop Manual, Prevention of Significant Deterioration and Nonattainment Area Permitting" states the following:

> *Although each applicant for a PSD permit must perform an additional impacts analysis, the depth of the analysis generally will depend on existing air quality, the quantity of emissions, and the sensitivity of local soils, vegetation, and visibility in the source's impact area.*

The Project's maximum modeled ground-level concentrations of two visibility-related criteria pollutants - NO_2 and PM_{10} - were compared with the following PSD SIL as described in Table 8-2:

- NO_2 (annual average): 1 $\mu g/m^3$
- PM_{10} (24-hour average): 5 $\mu g/m^3$

None of the project's maximum potential concentrations of $NO_2$and PM_{10} would exceed the applicable PSD SIL, therefore, hence, no significant impact area exists within which

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to analyze potential Class II area visibility impacts.

With respect to the impact area, EPA describes this as follows: "The *impact area* is a circular area with a radius extending from the source to (1) the most distant point where approved dispersion modeling predicts a significant ambient impact will occur, or (2) a modeling receptor distance of 50 km, whichever is less." Although the Avenal Energy Project has no impact area, the Class II region that surrounds the Project within 50 km was reviewed by the Applicant for potentially sensitive state or federal parks, forests, monuments, or recreation areas. The nearest park is Colonel Allensworth State Historic Park, located 66 km east-southeast of the Project, on Route 43 just south of its intersection with State Route J22 near Earlimart. Therefore, no such state or federal areas are located in this rural part of the Central Valley per the surrounding 50 km of the project site.

9.3. Growth

We do not expect this project to result in any significant growth. The less-than-significant potential growth inducing impacts on population, housing, schools, utilities, and emergency and other services are discussed in the CEC's AFC, Section 6.10 – Socioeconomics, pages 6.10-19 through 6.10-32.

10. Endangered Species

Pursuant to Section 7 of the Endangered Species Act (ESA), 16 U.S.C. 1536, and its implementing regulations at 50 C.F.R. Part 402, EPA is required to ensure that any action authorized, funded, or carried out by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of such species' designated critical habitat. EPA has determined that this PSD permitting action is subject to ESA Section 7 requirements.

On May 14, 2008, EPA received a document titled "Consultation Initiation Package" that served as the Biological Assessment (BA) prepared by the applicant's consultant, TRC Solutions. The BA consisted of excerpts from the "Application for Certification docketed with the California Energy Commission on February 21, 2008." The BA also was received by the U.S. Fish and Wildlife Service (FWS) on May 13, 2008.

In a letter dated July 10, 2008, EPA requested formal consultation under Section 7 of the ESA with the FWS regarding the San Joaquin kit fox. EPA additionally requested concurrence from FWS that the project is not likely to adversely affect the blunt-nosed leopard lizard (*Gambelia sila*), California jewelflower (*Calanthus californicus*), and San Joaquin wooly-threads (*Lambertia congdonii*).

FWS's response to EPA's request for formal consultation, dated September 8, 2008, indicated that formal consultation would not be initiated until additional information requested of the applicant, as outlined in the FWS correspondence, was received, and also noted the following: (a) FWS agreed to accept the BA for the proposed Avenal Energy Project; (b) the project as proposed was unlikely to adversely affect the blunt-nosed leopard lizard, California jewelflower, and San Joaquin wooly-threads; (c) the proposed project may adversely affect the San Joaquin kit fox; and (d) FWS was discussing a setback from the nearby canal with the applicant to benefit the kit fox.

In a letter dated October 22, 2008, EPA responded to the FWS request for additional information to supplement the BA, submitting information provided by the applicant. Subsequent to this submittal, EPA provided further clarification to FWS via email and confirmed on November 28, 2008 with the FWS that the additional information provided was sufficient for the FWS to prepare its draft Biological Opinion (BO).

At this time, the FWS is in the process of preparing its draft BO. EPA will proceed with issuance of its final PSD permit decision after review of the FWS's final BO and after making a determination that issuance of the permit will be consistent with ESA requirements. In making this determination, EPA will consider actions taken, or to be taken, by the applicant to ensure ESA compliance.

11. Clean Air Act Title IV (Acid Rain Permit) and Title V (Operating Permit)

The applicant must apply for and obtain an Acid Rain permit and a Title V operating permit. On July 28, 2008, the applicant provided copies of its application for an Acid Rain permit. The applicant will apply for the Title V operating permit, which will incorporate the acid rain permit after the facility is constructed, as these permits are not required prior to construction. The San Joaquin Valley APCD has jurisdiction to issue the Acid Rain permit and the operating permit for the facility.

12. Conclusion and Proposed Action

EPA is proposing to issue a PSD permit to the Avenal Power Center, LLC for the Avenal Energy Project. We believe that the proposed project will comply with PSD requirements including the installation and operation of BACT, and will not cause or contribute to a violation of the NAAQS, or of any PSD increment. We have made this determination based on the information supplied by the applicant, our review of the analyses contained in the permit application, and other relevant information contained in the administrative record for this proposed action. EPA will provide the proposed permit and this AAQIR to the public for review, and make a final decision after considering any public comments on our proposal.

AVENAL ENERGY PROJECT (SJ 08-01)
PREVENTION OF SIGNIFICANT DETERIORATION PERMIT
PROPOSED PERMIT CONDITIONS

PROJECT DESCRIPTION

The proposed Facility is a combined-cycle power plant capable of generating up to 600 megawatts (MW, nominal) of net power. Electrical power will be generated from the combustion of natural gas in two 180 MW (nominal) combustion turbine generators (CTG). Exhaust from each gas turbine will flow through a dedicated Heat Recovery Steam Generator (HRSG) to produce steam to power a shared 300 MW (nominal) Steam Turbine Generator (STG). Each HRSG will be equipped with natural gas-fired duct burners to augment steam production during peaking operation. Each of the CTGs will be equipped with dry low-NOx (DLN) combustors. The Facility will install selective catalytic reduction (SCR) and oxidation catalyst (Ox-Cat) systems. Additional equipment includes a natural gas-fired auxiliary boiler equipped with an ultra low-NOx burner, a natural gas-fired emergency generator equipped with a non-selective catalytic reduction (NSCR) system, and a diesel-fired emergency firewater pump engine with a turbocharger and an intercooler/aftercooler.

The Facility is subject to the Prevention of Significant Deterioration (PSD) Program for emissions of Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), Particulate Matter (PM), and Particulate Matter under 10 micrometers (μm) in diameter (PM_{10}).

EQUIPMENT LIST

The following devices are subject to this PSD permit:

Unit ID	Description
GEN1	• 180 MW Combustion Turbine Generator (CTG), with a maximum heat input rate of 2,356.5 MMBtu/hr, high heating value (HHV) • Natural gas-fired General Electric Model Frame 7FA • Vented to a dedicated Heat Recovery Steam Generator (HRSG) and a 300 MW Steam Turbine Generator (STG) shared with GEN2 • Emissions of NO_2 and CO controlled by Dry Low-NOx (DLN) Combustors, Selective Catalytic Reduction (SCR), and an Oxidation Catalyst (Ox-Cat)
GEN2	• 180 MW CTG, with a maximum heat input rate of 2,356.5 MMBtu/hr (HHV) • Natural gas-fired General Electric Model Frame 7FA • Vented to a dedicated HRSG and a 300 MW STG shared with GEN1 • Emissions of NO_2 and CO controlled by DLN combustors, SCR and an Ox-Cat

Unit ID	Description
DB1	• 562 MMBtu/hr (HHV) Duct Burner for GEN1, fired on natural gas
DB2	• 562 MMBtu/hr (HHV) Duct Burner for GEN2, fired on natural gas
D1	• 37.4 MMBtu/hr (HHV) Auxiliary Boiler with ultra low-NO_x burner, fired on natural gas
D2	• 550 kW (860 hp) Emergency Internal Combustion (IC) Engine, fired on natural gas • Emissions of NO_2 and CO controlled by a Non-Selective Catalytic Reduction (NSCR) system
D3	• 288 hp Emergency Diesel-fired IC Engine Firewater Pump Engine • Equipped with a turbocharger and an intercooler/aftercooler

PERMIT CONDITIONS

I. PERMIT EXPIRATION

As provided in 40 CFR § 52.21(r), this PSD Permit shall become invalid if construction:

A. is not commenced (as defined in 40 CFR § 52.21(b)(9)) within 18 months after the approval takes effect; or

B. is discontinued for a period of 18 months or more; or

C. is not completed within a reasonable time.

II. PERMIT NOTIFICATION REQUIREMENTS

Permittee shall notify EPA Region IX in writing or by electronic mail of the:

A. date construction is commenced, postmarked within 30 days of such date;

B. actual date of initial startup, as defined in 40 CFR § 60.2, postmarked within 15 days of such date;

C. date upon which initial performance tests will commence, in accordance with the provisions of Condition X.G, postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the performance test protocol required pursuant to Condition X.G; and

D. date upon which initial performance evaluation of the continuous emissions monitoring system (CEMS) will commence in accordance with 40 CFR §

60.13(c), postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the CEMS performance test protocol required pursuant to Condition X.F.

III. FACILITY OPERATION

At all times, including periods of startup, shutdown, shakedown, and malfunction, Permittee shall, to the extent practicable, maintain and operate the Facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA, which may include, but is not limited to, monitoring results, opacity observations, review of operating maintenance procedures and inspection of the Facility.

IV. MALFUNCTION REPORTING

A. Permittee shall notify EPA at R9.AEO@epa.gov within two (2) working days following the discovery of any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner, which results in an increase in emissions above the allowable emission limits stated in Section X of this permit.

B. In addition, Permittee shall provide an additional notification to EPA in writing or electronic mail within fifteen (15) days of any such failure described under Condition IV.A. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Section X, and the methods utilized to mitigate emissions and restore normal operations.

C. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or any law or regulation such malfunction may cause.

V. RIGHT OF ENTRY

The EPA Regional Administrator, and/or an authorized representative, upon the presentation of credentials, shall be permitted:

A. to enter the premises where the Facility is located or where any records are required to be kept under the terms and conditions of this PSD Permit;

B. during normal business hours, to have access to and to copy any records required to be kept under the terms and conditions of this PSD Permit;

C. to inspect any equipment, operation, or method subject to requirements in this PSD Permit; and

D. to sample materials and emissions from the source(s).

VI. TRANSFER OF OWNERSHIP

In the event of any changes in control or ownership of the facilities to be constructed, this PSD Permit shall be binding on all subsequent owners and operators. Permittee shall notify the succeeding owner and operator of the existence of this PSD Permit and its conditions by letter, a copy of that shall be forwarded to EPA Region IX within thirty (30) days.

VII. SEVERABILITY

The provisions of this PSD Permit are severable, and, if any provision of the PSD Permit is held invalid, the remainder of this PSD Permit shall not be affected.

VIII. ADHERENCE TO APPLICATION AND COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS

Permittee shall construct this project in compliance with this PSD permit, the application on which this permit is based and all other applicable federal, state, and local air quality regulations. This PSD permit does not release the Permittee from any liability for compliance with other applicable federal, state and local environmental laws and regulations, including the Clean Air Act.

IX. RESERVED

X. SPECIAL CONDITIONS

A. Annual Facility Emission Limits

1. Annual emissions, in tons per year (tpy) on a 12-month rolling average basis, shall not exceed the following:

	NO_x	CO	PM	PM_{10}
Total Facility	**144.3 tpy**	**602.7 tpy**	**80.7 tpy**	**80.7 tpy**

2. Only Public Utilities Commission (PUC)-quality pipeline natural gas shall be fired at this Facility. PUC-quality pipeline natural gas shall not exceed a sulfur content of 0.36 grains per 100 dry standard cubic feet on a 12-month rolling average basis and shall not exceed a sulfur content of 1.0 grains per 100 dry standard cubic feet, at any time.

B. Air Pollution Control Equipment and Operation

On or before the date of initial startup of the power plant (startup as defined in 40 CFR § 60.2), and thereafter, except as noted below in Condition X.D, the Permittee shall install, continuously operate, and maintain: (1) the SCR systems for control of NO_x and the Ox-Cat systems for control of CO for Units GEN1 and GEN2, and (2) the NSCR system for control of NO_x and of CO for D2. Permittee shall also perform any necessary operations to minimize emissions so that emissions are at or below the emission limits specified in this permit.

C. Combustion Turbine Generator (CTG) Emission Limits

1. Except as noted below under Condition X.D, on and after the date of initial startup, Permittee shall not discharge or cause the discharge of emissions from each CTG Unit (of GEN1 and GEN2) into the atmosphere in excess of the following:

	Emission Limit (per CTG) (no duct burning)	Emission Limit (per CTG) (with duct burning)
NO_2	• 13.55 lb/hr • 1-hr average • 2.0 ppmvd @ 15% O_2	• 17.20 lb/hr • 1-hr average • 2.0 ppmvd @ 15% O_2
CO	• 8.35 lb/hr • 1-hr average • 2.0 ppmvd @ 15% O_2	• 13.55 lb/hr • 1-hr average • 2.0 ppmvd @ 15% O_2
PM / PM10	• 8.91 lb/hr • 12-month rolling average • PUC-quality pipeline natural gas	• 11.78 lb/hr • 12-month rolling average • PUC-quality pipeline natural gas

2. Hours of operation for each duct burner (DB1 and DB2) shall not exceed 800 hours per 12-month rolling average. The Permittee shall ensure that the duct burners are not operated unless the associated turbine units are in operation.

D. Requirements during Gas Turbine (GEN1 and GEN2) Startup and Shutdown

1. Startup is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operations and demonstrate compliance with Conditions X.C after startup has ceased.

   a. A startup occurs when a CTG has not been in operation during the preceding 48 hours.

   b. Shutdown is defined as the period beginning with the lowering of equipment from normal operating load to minimum operating load and lasting until fuel flow is completely off and combustion has ceased.

2. During startup and shutdown periods emissions from each CTG and associated HRSG unit, verified by the CEMS, shall not exceed the following:

	NO_x	CO
Each CTG and HRSG Startup / Shutdown	160 lb/hr	1,000 lb/hr
Both CTG and HRSG Combined Startup / Shutdown	240 lb/hr	1,902 lb/hr

	Event Duration	Annual Limit for Both CTG Combined
Each CTG and HRSG Startup / Shutdown	6.0 hours	1,248 hours/yr
Each CTG and HSRG Shutdown	2.0 hours	

3. The Permittee must operate the CEMS during startups and shutdowns.

4. The Permittee must record the time, date, and duration of each startup and shutdown event. The records must include calculations of NO_x and CO emissions during each event based on the CEMS data. These records must be kept for five years following the date of such event.

5. During startup, the CTG and HRSG emissions shall comply with Condition X.D.2, and the SCR system, including ammonia injection, shall be operated in a manner to minimize emissions, as technologically feasible, and not later than when the load reaches 60% of plant net output.

E. Auxiliary Combustion Equipment Emission Limits

1. At all times, including equipment startup and shutdown, Permittee shall not discharge, or cause the discharge of emissions from each unit into the atmosphere, in excess of the following:

Unit ID	NO_x	CO	PM and PM_{10}	Restrictions on Usage
Unit D1 37.4 MMBtu/hr (HHV) Boiler	• 9 ppmvd @ 3% O_2 • 1-hr average	• 50 ppmvd @ 3% O_2 • 1-hr average	• PUC-quality pipeline natural gas	• 1,248 hrs/yr
Unit D2 550 kW (860 hp) engine	• 1.0 g/hp-hr	• 0.6 g/hp-hr	• PUC-quality pipeline natural gas • 0.034 g/hp-hr	• 50 hrs/yr
Unit D3 288 hp firewater pump	• 3.4 g/hp-hr	• 0.447 g/hp-hr	• Use of ultra-low sulfur fuel, not to exceed 15 ppmvd fuel sulfur	• 50 hrs/yr

2. Unit D1 shall not operate during normal operations of GEN1 or GEN2.

3. Unit D2 restrictions on usage shall be limited to operation of the engine for all maintenance and testing.

4. Unit D3 restrictions on usage shall be limited to the total hours of operations for all maintenance and testing.

5. Units D2 or D3 shall not operate during a startup hour of GEN1 or GEN2, except when Units D2 or D3 are required for emergency operations.

F. Continuous Emissions Monitoring System (CEMS) for GEN1 and GEN2

1. At the earliest feasible opportunity before beginning commercial operation, in accordance with the recommendations of the equipment manufacturer and the construction contractor, Permittee shall install, and thereafter operate, maintain, certify, and quality-assure a CEMS for each CTG that measures stack gas NO_x, CO, and O_2 concentrations in ppmv. The concentrations shall be corrected to 15% O_2 on a dry basis.

2. The NO_x and O_2 CEMS shall meet the applicable requirements of 40 CFR

Part 60 Appendix B, Performance Specifications 2 and 3, and 40 CFR Part 60 Appendix F, Procedure 1.

3. The CO CEMS shall meet the applicable requirements of 40 CFR Part 60 Appendix B, Performance Specification 4, and 40 CFR Part 60 Appendix F, Procedure 1, except the relative accuracy specified in section 13.2 of 40 CFR Part 60 Appendix B, Performance Specification 4 shall not exceed 20 percent.

4. Each CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute clock-hour period.

5. The CEMS shall be tested in accordance with Conditions X.F.2 and X.F.3.

6. The initial certification of the CEMS may either be conducted separately, as specified in 40 CFR § 60.334(b)(1) or as part of the initial performance test of each emission unit. CEMS must undergo and pass initial performance specification testing on or before the date of the initial performance test.

7. CEMS shall meet the requirements of 40 CFR § 60.13. Data sampling, analyzing, and recording shall also be adequate to demonstrate compliance with emission limits during startup and shutdown.

8. Not less than 90 days prior to the date of initial startup of the Facility, the Permittee shall submit to the EPA a quality assurance project plan for the certification and operation of the continuous emission monitors. Such a plan shall conform to EPA requirements contained in 40 CFR Part 60 Appendix F for CO, NO_x, and O_2, and 40 CFR Part 75 Appendix B for stack flow. The plan shall be updated and resubmitted upon request by EPA. The protocol shall specify how emissions during startups and shutdowns will be determined and calculated, including quantifying flow accurately if calculations are used.

9. The gas turbine CEMS shall be audited quarterly and tested annually in accordance with 40 CFR Part 60 Appendix F, Procedure 1. Permittee shall perform a full stack traverse during initial run of annual RATA testing of the CEMS, with testing points selected according to 40 CFR Part 60 Appendix A, Method 1.

10. Permittee shall submit a CEMS performance test protocol to the EPA no later than 30 days prior to the test date to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol and any changes required by EPA.

11. Permittee shall furnish the EPA a written report of the results of performance tests within 60 days of completion.

12. The stack gas volumetric flow rates shall be calculated in accordance with the fuel flowmeter requirements of 40 CFR Part 75 Appendix D in combination with the appropriate parts of EPA Method 19.

13. Prior to the date of initial startup of GEN1 and GEN2, Permittee shall install, and thereafter maintain and operate, continuous monitoring and recording systems to measure and record the following operational parameters:

    a. The ammonia injection rate of the ammonia injection system of the SCR system.

    b. The plant output as noted in Condition X.D.5.

G. Performance Tests

1. Stack Tests

   a. Within 60 days after achieving normal operation, but not later than 180 days after the initial start-up of equipment, and annually thereafter (within 30 days of the initial performance test anniversary), Permittee shall conduct performance tests (as described in 40 CFR § 60.8) as follows:

      i. NO_x, CO, PM, and PM_{10} emissions from each gas turbine (Units GEN1/DB1 and GEN2/DB2),

      ii. NO_x, CO, PM, and PM_{10} emissions from the 37.4 MMBtu/hr boiler (D1),

      iii. NO_x, CO, PM, and PM_{10} emissions from the 550 kW (860 hp) internal combustion engine (D2), only upon notification by EPA

      iv. NO_x, CO, PM, and PM_{10} emissions from the 288 hp firewater pump (D3), only upon notification by EPA

   b. Permittee shall submit a performance test protocol to EPA no later than 30 days prior to the test to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.

   c. Performance tests shall be conducted in accordance with the test methods set forth in 40 CFR § 60.8 and 40 CFR Part 60 Appendix A, as modified

below. In lieu of the specified test methods, equivalent methods may be used with prior written approval from EPA:

i. EPA Methods 1-4 and 7E for NO_x emissions measured in ppmvd

ii. EPA Methods 1-4, 7E, and 19 for NO_x emissions measured on a heat input basis

iii. EPA Methods 1-4 and 10 for CO emissions

iv. EPA Methods 5 and 202 for both PM and PM_{10}, in accordance with the test methods set forth in 40 CFR § 60.8 and 40 CFR Part 60 Appendix A. In lieu of Method 202, the Permittee may use EPA Conditional Test Methods for particulate matter: CTM-039 or OTM-027. If Method 202 is used, the test methodology must include:

a. one hour nitrogen purge
b. the alternative procedure described in section 8.1 of Method 202 to neutralize the sulfuric acid
c. evaporation of the last 1 ml of the inorganic fraction by air drying following evaporation of the bulk of the impinger water in a 105 degrees C oven as described in the first sentence of section 5.3.2.3 of Method 202.

v. the provisions of 40 CFR § 60.8 (f).

d. The initial performance test conducted after initial startup shall use the test procedures for a "high NO_2 emission site," as specified in San Diego Test Method 100, to measure NO_2 emissions. The source shall be classified as either a "low" or "high" NO_2 emission site based on these test results. If the emission source is classified as a:

i. "high NO_2 emission site," then each subsequent performance test shall use the test procedures for a "high NO_2 emission site," as specified in San Diego Test Method 100.

ii. "low NO_2 emission site," then the test procedures for a "high NO_2 emission site," as specified in San Diego Test Method 100, shall be performed once every five years to verify the source's classification as a "low NO_2 emission site."

e. The performance test methods for NO_x emissions specified in Condition X.G.1.c.i and ii., may be modified as follows:

i. Perform a minimum of 9 reference method runs, with a minimum time per run of 21 minutes, at a single load level, between 90 and 100 percent of peak (or the highest physically achievable) load.

ii. Use the test data both to demonstrate compliance with the applicable NO_x emission limit and to provide the required reference method data

for the RATA of the CEMS.

f. Upon written request and adequate justification from the Permittee, EPA may waive a specific annual test and/or allow for testing to be done at less than maximum operating capacity.

g. For performance test purposes, sampling ports, platforms, and access shall be provided on the emission unit exhaust system in accordance with the requirements of 40 CFR § 60.8(c).

h. Permittee shall furnish the EPA a written report of the results of performance tests within 60 days of completion.

2. Fuel Testing

a. Permittee shall take monthly samples of the natural gas combusted. The samples shall be analyzed for sulfur content using an ASTM method. The sulfur content test results shall be retained on site and taken to ensure compliance with Special Conditions X.C and X.E for Units GEN1/DB1, GEN2/DB2, D1, and D2.

H. Monitoring for Auxiliary Combustion Equipment

1. Permittee shall install and maintain an operational non-resettable totalizing mass or volumetric flow meter in each fuel line for the 37.4 MMBtu /hr boiler (Unit D1).

2. Permittee shall install and maintain an operational non-resettable elapsed time meter for the 37.4 MMBtu/hr heater (Unit D1), the 550 kW emergency use engine (Unit D2) and the 288 hp emergency-use firewater pump (Unit D3).

I. Recordkeeping and Reporting

1. Permittee shall maintain a file of all records, data, measurements, reports, and documents related to the operation of the Facility, including, but not limited to, the following: all records or reports pertaining to adjustments and/or maintenance performed on any system or device at the Facility; all records relating to performance tests and monitoring of auxiliary combustion equipment; for each diesel fuel oil delivery, documents from the fuel supplier certifying compliance with the fuel sulfur content limit of Special Condition X.E for Unit D3; and all other information required by this permit recorded in a permanent form suitable for inspection. The file must be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records.

2. Permittee shall maintain CEMS records that include the following: the occurrence and duration of any startup, shutdown, shakedown, or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance, duration of any periods during which a continuous monitoring system or monitoring device is inoperative, and corresponding emission measurements.

3. Permittee shall maintain records of all source tests and monitoring and compliance information required by this permit.

4. Permittee shall maintain records and submit a written report of all excess emissions to EPA semi-annually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The report is due on the 30^{th} day following the end of each semi-annual period and shall include the following:

    a. Time intervals, data and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;

    b. Applicable time and date of each period during which the CEMS was inoperative (monitor down-time), except for zero and span checks, and the nature of CEMS repairs or adjustments;

    c. A statement in the report of a negative declaration; that is, a statement when no excess emissions occurred or when the CEMS has not been inoperative, repaired, or adjusted;

    d. Any failure to conduct any required source testing, monitoring, or other compliance activities; and

    e. Any violation of limitations on operation, including but not limited to restrictions on hours of operation.

5. Excess emissions shall be defined as any period in which the Facility emissions exceed the maximum emission limits set forth in this permit.

6. A period of monitor down-time shall be any unit operating clock hour in which sufficient data are not obtained to validate the hour for NO_x, CO or O_2, while also meeting the requirements of Condition X.F.7.

7. Excess emissions indicated by the CEM system, source testing, or compliance monitoring shall be considered violations of the applicable emission limit for

the purpose of this permit.

8. All records required by this PSD Permit shall be retained for not less than five years following the date of such measurements, maintenance, and reports.

J. Shakedown Periods

The combustion turbine emission limits and requirements in Conditions X.C, X.D, and X.E shall not apply during combustion shakedown periods. Shakedown is defined as the period beginning with initial startup and ending no later than initial performance testing, during which the Permittee conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. The requirements of Section III of this permit shall apply at all times.

XI. ACROYNMS AND ABBREVIATIONS

AEP	Avenal Energy Project
APCD	Air Pollution Control District
ASTM	American Society for Testing and Materials
Btu	British Thermal Unit
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CTG	Combustion Turbine Generator
District	San Joaquin Valley Air Pollution Control District
DLN	Dry Low NOx
(d)scf	(dry) Standard Cubic Feet
EPA	Environmental Protection Agency
g	Grams
gr	Grains
HHV	Higher Heating Value
HRSG	Heat Recovery Steam Generator
hp	Horsepower
hr	Hour
kW	Kilowatt
lbs	Pounds
MMBtu	Million British Thermal Units
MW	Megawatt
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NSCR	Non-Selective Catalytic Reduction
OTM	Other Test Method
Ox-Cat	Oxidation Catalyst
O_2	Oxygen
PM	Total Particulate Matter
PM_{10}	Particulate Matter with aerodynamic diameter less than 10 micrometers
ppmvd	Parts Per Million by Volume, Dry basis
ppmv	Parts Per Million by Volume
PSD	Prevention of Significant Deterioration
PUC	Public Utilities Commission
RATA	Relative Accuracy Test Audit
SCR	Selective Catalytic Reduction
STG	Steam Turbine Generator
tpy	Tons Per Year
µm	micrometers
yr	Year

XII. AGENCY NOTIFICATIONS

All correspondence as required by this Approval to Construct must be forwarded to:

A. Director, Air Division (Attn: AIR-5)
EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Email: R9.AEO@epa.gov
Fax: (415) 947-3579

B. Air Pollution Control Officer
San Joaquin Valley Air Pollution Control District
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244

Email: sjvapcd@valleyair.org
Fax: (559) 230-6061