

To: Chairman Karen Douglas, Presiding Member
Commissioner Arthur H. Rosenfeld, Associate Member
Hearing Officer Raoul Renaud

From: California Energy Commission – Alan Solomon, Project Manager
1516 Ninth Street
Sacramento, CA 95814-5512

DOCKET	
08-AFC-7	
DATE	NOV 24 2009
REC'D	NOV 24 2009

Subject: **AIR QUALITY ERRATA**

On Monday, November 23, 2009, staff discovered an inconsistency between Conditions of Certification for the ongoing GWF Hanford Energy Peaker Project Amendment and GWF Tracy Final Staff Assessment. This inconsistency relates to the lubricating oil system wet surface air cooler (WSAC) and the mist eliminator guaranteed mist reduction rate. The WSAC is exempt from the Air District's review and therefore staff would like to add a condition ensuring that it meets and maintains the manufacturer's guaranteed mist reduction rate.

In addition, staff also wants to clarify their original statement concerning lube oil cooler emissions. The original statement (on FSA p. 4.1-22) was open to misinterpretation and the revised statement clarifies the information in Air Quality Table 15 and is consistent with the information provided in the AFC.

This errata was reviewed by GWF and they do not contest the changes. Staff proposes the following two errata:

1) Edit to Final Staff Assessment, page 4.1-22

Air Quality Table 15 lists maximum potential annual emissions from each source of the proposed project. Annual emissions reflect each turbine operating with 325 startups (25 cold, 50 warm, and 250 hot) and shutdowns per year, 3,100 hours of operation with duct firing and the lube oil cooler (WSAC) operating, and 4,900 hours of operation at base load with ~~WSAC operating and no duct firing~~. The auxiliary boiler emissions are based on 4,000 operating hours per year, and the lube oil cooler (WSAC) emissions are based on 550 operating hours per year (AFC p. 5.1-33).

2) New Condition of Certification

AQ-SC9 The wet surface air cooler (WSAC) shall have a mist eliminator with a manufacturer guaranteed mist reduction rate of 0.005 percent or less of the water recirculation rate. The wet surface air cooler spray water shall be tested for total dissolved solids and that data shall be used to determine and report the particulate matter emissions from the wet surface air cooler. The wet surface

air cooler spray water shall be tested at least once annually during the anticipated summer operation peak period (July through September). The wet surface air cooler annual particulate matter emissions shall be limited to 110 lb/year PM10. The project owner shall estimate annual particulate emissions from the wet surface air cooler using the water quality testing data and estimated spray water use. Compliance with the wet surface air cooler PM10 emission limit shall be demonstrated as follows: $PM_{10} = \text{cooling water recirculation} * \text{total dissolved solids concentration in the blowdown water} * \text{design drift rate}$.

Verification: The project owner shall provide the CPM a copy of the manufacturer guarantee for the mist eliminator 30 days prior to installation of the wet surface air cooler. The project owner shall provide the water quality test results and the wet surface air cooler particulate matter emissions estimates to the CPM as part of the fourth quarter's quarterly operational report (AQ-SC8).

**DECLARATION OF
James Brewster Birdsall**

I, James Brewster Birdsall, declare as follows:

1. I am presently under contract with Aspen Environmental Group to provide environmental technical assistance to the California Energy Commission. Under Contract No. 700-05-002, I am serving as an Air Quality Specialist and Project Manager to provide Peak Workload Support for the Energy Facility Siting Program and for the Energy Planning Program.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the final staff testimony and errata on Air Quality and Greenhouse Gas Emissions for the GWF Tracy Combined Cycle Power Plant Project based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony and errata is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and errata and if called as a witness could testify competently thereto.

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

Dated: November 24, 2009 Signed: Original signature in Dockets

At: San Francisco, California



Aspen Environmental Group

BREWSTER BIRDSALL, P.E., QEP
Senior Associate, Air Quality and Engineering

ACADEMIC BACKGROUND

M.S., Civil Engineering, Colorado State University, 1993

B.S., Mechanical Engineering, Lehigh University, 1991

PROFESSIONAL EXPERIENCE

Mr. Birdsall is an environmental scientist who specializes in air quality and noise analyses for land development related projects and air quality risk assessments. He has nine years of consulting experience with expertise in environmental impact assessment under the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and the Clean Air Act. His focus is on air permitting, and air quality and noise-impact modeling, which includes field monitoring for traffic and other community noise sources.

Aspen Environmental Group

2001 to present

Mr. Birdsall's project experience at Aspen includes the following:

Technical Studies for CEC Contract – Review of Power Plant AFCs. Mr. Birdsall assists the California Energy Commission (CEC) as a technical specialist by reviewing and providing testimony on Applications for Certification (AFC) for new power plants throughout California.

- **Tesla Power Plant.** Lead technical staff for air quality assessment and analyst of visible plumes for new 1,120 MW combined cycle power plant and 11-mile recycled water pipeline in rural eastern Alameda County near Tracy.
- **Inland Empire Energy Center.** Lead technical staff for air quality assessment for new 670 MW combined cycle power plant near Romoland in Riverside County.
- **Palomar Energy.** Lead technical staff for air quality assessment and supporting staff for cooling system studies for new 540 MW combined cycle power plant in northern San Diego County.
- **Kings River Conservation District Peaking Power Plant.** Lead technical staff for air quality assessment of new 97 MW simple cycle power plant in Fresno County.
- **Avenal Energy.** Lead technical staff for air quality assessment and analyst of visible plumes for large new combined cycle power plant near Avenal in Kings County.
- **Blythe Energy Project Phase II.** Lead technical staff for air quality assessment for new 520 MW combined cycle power plant and affiliated 118-mile transmission line, in the Mojave Desert and Coachella Valley of Riverside County.
- **Russell City Energy Center.** Lead technical staff for noise assessment of new 600 MW combined cycle power plant adjacent to shoreline recreational areas in Hayward.
- **Los Esteros Critical Energy Facility.** Lead technical staff for noise assessment and analyst of visible plumes for new 180 MW simple cycle power plant adjacent to recreational areas in San Jose.

- **Environmental Performance Report.** Technical review and editorial assistance for environmental portion of the first Integrated Energy Policy Report for the Governor and Legislature.
- **Air Quality Compliance.** Technical staff for analysis of modifications to permit conditions at the Moss Landing Power Plant. Prepared independent analysis of permit requirements and environmental consequences of increasing the capacity of the Midway-Sunset Cogeneration Project.
- **Alternative Cooling Technology Studies.** Supporting staff for analyses of dry cooling and hybrid cooling alternatives for the Cosumnes Power Plant and Palomar Energy Project. Coordinated and edited documentation from design engineers and other specialists.

For the **California Public Utilities Commission:**

- **San Onofre Nuclear Generating Station and Diablo Canyon Power Plant, Steam Generator Replacement Projects.** Currently serving as Deputy Project Manager for Environmental Impact Reports on the proposed improvements to these controversial nuclear power plants. Preparing certain administrative and technical portions of reports and coordinating the environmental documents with team of analysts.
- **Miguel-Mission 230 kV #2 Transmission Line.** Conducted the air quality and noise review for a system that would reduce transmission constraints between San Diego County and generators within the U.S. and Mexico. Provided oversight of the engineers studying impacts to traffic and transportation and the transmission system design.
- **Jefferson-Martin 230 kV Transmission Line.** Prepared air quality and noise studies for construction and operation of a 27-mile transmission line through urban and rural San Mateo County. The project is proposed to meet the projected electric demand in the Cities of Burlingame, Millbrae, San Bruno, South San Francisco, Brisbane, Colma, Daly City, and San Francisco.
- **Viejo System Transmission Project.** Prepared air quality, noise, and traffic analyses for construction of a controversial transmission improvement project in suburban south Orange County.
- **Looking Glass Networks Telecommunications Project.** Prepared the air quality and noise analyses for this Initial Study/Mitigated Negative Declaration (IS/MND) evaluating proposed fiber optic connections throughout the San Francisco Bay and Los Angeles areas, and developed programmatic mitigation measures for implementation of the metropolitan area network.

Presidio Trust, Presidio of San Francisco. Provided impact analysis for demolition, rehabilitation, and infill construction within the Public Health Service Hospital District, within the Golden Gate National Recreation Area and adjacent to sensitive San Francisco residences. Provided technical support and peer review of noise and vibration analyses related to the Doyle Drive Reconstruction through the Presidio of San Francisco. Involved protecting natural sounds consistent with National Park Service policy.

California State Lands Commission, Monterey Accelerated Research System Cabled Observatory. Providing technical analysis of air quality and noise effects of installing new underwater equipment in Monterey Bay. Supporting efforts of marine biologists with analysis of underwater noise.

California State Lands Commission, Concord-Sacramento Pipeline. Provided technical analysis of air quality and noise effects of constructing a new 20-inch, 70-mile petroleum products pipeline, including upgrades to storage tank facilities in Concord and distribution systems in West Sacramento.

California Department of Water Resources, Piru Creek Erosion Repairs and Bridge Seismic Retrofit Project. Provided assessment of air quality and noise impacts for construction of upgrades.

Ventura County Resource Conservation District, Casitas Springs *Arundo Donax* Removal Demonstration Project. Prepared estimates of community noise impacts and air quality assessment for cutting and removing non-native plants for improving flood control along the Ventura River.

Technical Support for U.S. Army Corps of Engineers. Analyzed construction noise and air quality effects and described applicability of general conformity rule for various flood control improvements in Arizona and Southern California.

Technical Support for Los Angeles Unified School District. Provided technical analysis of air quality and noise effects for school expansion, play area expansion, and temporary classroom projects, including reviews of cumulative, regional air quality consequences of temporary projects.

EIP Associates

1998 to 2001

As a Senior Environmental Scientist at **EIP Associates**, Mr. Birdsall performed comprehensive analyses of air quality and noise impacts for Environmental Impact Reports/Statements and independent studies. His projects at EIP included:

- **Bay Area Rapid Transit District, Oakland Airport Connector EIS/EIR.** Prepared noise impact evaluation and mitigation strategies. Conducted community noise monitoring and assessment according to Federal Transit Administration methodology.
- **Presidio Trust Implementation Plan EIS and Letterman Complex Supplemental EIS.** Prepared community noise impact assessment and traffic noise mitigation strategies. Air quality management policy consistency analysis. The plan was awarded the 2003 Outstanding Land Use Plan from the Association of Environmental Professionals.
- **San Francisco International Airport, Offshore Runway Construction Concepts, AGS Design Team.** Conducted preliminary environmental review of design and construction concepts for runway expansion. Prepared emission control strategies for general conformity rule.
- **Sacramento Metropolitan Airport Master Plan EIS/EIR, Sacramento County Department of Environmental Review and Assessment.** Baseline emission inventory and regulatory constraints.
- **Desert Resorts Regional Airport, Thermal, Riverside County.** Emission inventory and general conformity determination for runway extension and taxiway improvements.
- **San Joaquin Area Flood Control Agency, Stockton Areawide Flood Control Projects.** Reviewed emission inventories and retroactive general conformity rule applicability for construction activities.
- **Alameda County Flood Control and Water Conservation District, Zone 7, Altamont Water Treatment Plant EIR.** Analyzed air quality and community noise effects of three potential water plant sites in remote eastern Alameda County.
- **Santa Clara Valley Water District, Coyote Watershed, Lower Silver Creek Project.** Analyzed air quality and community noise effects for Initial Study/Environmental Assessment of constructing flood control improvements and habitat restoration.
- **University of California, Davis.** Prepared campuswide health risk assessment update, which included toxic air contaminant emission inventory and dispersion modeling using ISC.

- **University of California, Berkeley.** Prepared initial air quality and noise technical studies for Long Range Development Plan Update EIR and analyses for Northeast Quadrant Science and Safety Project (Stanley Hall replacement building) EIR.
- **Merced County, Draft University Community Plan.** Prepared air quality and noise background studies and policy discussion papers for the new Merced Campus of the University of California.
- **Allegro Jack London Square Project, SNK Development.** Provided expert testimony on the pile driving noise impacts to residents in a revitalized, high-density City of Oakland neighborhood. Conducted field surveys with City Staff and evaluated compliance with City noise ordinance.
- **Maranatha High School and Playing Fields Project, City of Sierra Madre.** Prepared the community noise technical study for a new private high school with outdoor amphitheater and athletic facilities. Characterized noise from events to determine impact level on sensitive residential community.
- **State Route 275 Modification Project, City of West Sacramento.** Prepared noise technical studies on the realignment of the State Route 275 Modification Project. Required assessment of new traffic noise impacts caused by rerouting traffic to grade level in close proximity of existing sensitive land uses and identification of feasible measures to insulate lodging uses.
- **City of Mountain View, Whisman Road Transit Oriented Development MND.** Deputy Project Manager for Negative Declaration related to high-density office development at the Middlefield-Ellis-Whisman Superfund Site. Prepared various technical sections, managed traffic subconsultant, and coordinated preparing the environmental documents with the city staff.

Trinity Consultants

1994 to 1998

Mr. Birdsall prepared compliance strategies, evaluated modeled impacts, and negotiated air permits while a Project Supervisor at **Trinity Consultants**, an environmental firm specializing in air quality.

- **Browning-Ferris Gas Services.** Coordinated nationwide Title V program implementation, secured numerous new source and operating permits, supported rollout of federal new source performance standards for municipal solid waste landfills and landfill gas to energy facilities.
- **Newmont Mining Joint Venture, Batu Hijau Project.** Environmental impact studies for open-pit metallic mineral mining facility and independent power production facility. Included noise assessment for “greenfield” power plant and air quality impacts evaluation in complex, coastal terrain.
- **Questar Pipeline, TransColorado Pipeline Project.** Secured new source permits for air quality effects related to construction and operation of major natural gas pipeline including compressor stations.
- **Coastal Field Services, Altamont Gas Plant.** Negotiated Title V operating permits for upstream natural gas processing plant and associated field compressor stations.
- **Solvay Soda Ash Joint Venture.** Developed particulate matter modeling protocol with State agency.
- **Potlatch Corporation.** Facilitywide emission inventory and permitting for a wood products plant. Included regionwide analyses of ambient air quality standards and resolving existing modeled violations.

NOISE IMPACT ASSESSMENT MODELS

- Federal Highway Administration Traffic Noise Model
- California Department of Transportation Traffic Noise Model (SOUND32)
- FTA Transit Noise Assessment and Mitigation Methodology

AIR QUALITY MODELING EXPERTISE

MVEI/EMFAC; URBEMIS; CALINE4; SCREEN; ISC; CTDM; TANKS; Landfill Gas Emissions Model.

ADDITIONAL TRAINING AND COURSES

- Fundamentals of Noise and Vibration for the California Energy Commission
- Expert Witness Training, California Energy Commission
- Co-Instructor, Air Permitting Issues for Municipal Solid Waste Landfills, Trinity Consultants
- Fundamentals of New Source Review Workshop, Air and Waste Management Association
- Title V and Compliance Assurance Monitoring Workshops, Air and Waste Management Association
- NATO Advanced Studies Institute, Wind Climates in Cities

PROFESSIONAL AFFILIATIONS AND AWARDS

- Professional Engineer (Mechanical, California #32565)
- Qualified Environmental Professional, Institute of Professional Environmental Practice (#03030005)
- 2001 Outstanding Performance Award presented by the California Energy Commission
- Air and Waste Management Association since 1994

PUBLICATIONS

Smith, P.J., J.B. Birdsall, and P.E. Delamater. "A Discussion of Air Permitting Issues for Landfill Gas-To-Energy Projects." 88th Annual Meeting and Exhibition of the Air and Waste Management Association, San Antonio, Texas, 1995.

Meroney, R.N., D.E. Neff, and J.B. Birdsall. "Wind-Tunnel Simulation of Infiltration Across Permeable Building Envelopes: Energy and Air Pollution Exchange Rates." 7th International Symposium on Measurement and Modeling of Environmental Flows. International Mechanical Engineering Congress and Exposition, San Francisco, California, 1995.

Birdsall, J.B. and R.N. Meroney. "Model Scale and Numerical Evaluation of Tracer Gas Distribution Due to Wind-Forced Natural Ventilation." 9th International Conference on Wind Engineering, New Delhi, India, 1995.

Birdsall, J.B. Physical and Numerical Simulation of Wind-Forced Natural Ventilation, MS Thesis, Colorado State University, Fort Collins, Colorado, 1993.



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION
FOR THE *GWF TRACY COMBINED CYCLE
POWER PLANT PROJECT***

**Docket No. 08-AFC-7
PROOF OF SERVICE**

(Revised 2/25/2009)

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DECLARATION OF SERVICE

I, April Albright, declare that on November 24, 2009, I served and filed copies of the attached Staff's Air Quality Errata, dated November 24, 2009. 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:

[<http://www.energy.ca.gov/sitingcases/tracyexpansion/index.html>]. 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:

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

 ✓ 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:

 ✓ **sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);**

OR

 depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-7
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

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

Original signed by _____
April Albright