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COMPILATION OF THE CONDITIONS OF CERTIFICATION

FOR

BOTTLE ROCK GEOTHERMAL POWER PLANT

79-AFC-4C

SEPTEMBER 2013

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BOTTLE ROCK
GENERAL PROVISIONS

As requested in the June, 28 2013, **Bottle Rock Geothermal Power Plant Amendment Committee Scheduling Order, Order Granting Petition to Intervene, and Other Orders**, staff has published a compilation of the Bottle Rock Geothermal Power Plant Conditions of Certification as they presently exist after previous amendments. As stated by the committee, "[n]o later than their prehearing identification of witnesses and exhibits, the parties shall identify any corrections necessary to accurately reflect the current state of the Conditions." It is the committee's intent "…to create a current set of conditions for convenient reference, not to revisit conditions that are unrelated to this amendment request." The committee "…encourage[s] the parties to discuss their proposals during the Staff Assessment Workshop; any unresolved differences will be discussed during the Committee Hearing."

INTRODUCTION

Section 25532 of the Public Resources Code provides that the California Energy Commission (CEC) shall establish a monitoring system to assure that any facility certified is constructed and operated in compliance with air and water quality, public health and safety, and other applicable regulations, guidelines, and conditions adopted or established by the CEC or specified in the written decision on the application. The following plan is formulated to satisfy that directive for the Department of Water Resources (DWR) Bottle Rock Geothermal project.

Significant features of the plan include:

- Utilization of delegate agencies, where possible, to monitor specific elements of the compliance plan;
- Compliance verification of each condition by a qualified professional;
- Periodic compliance reports to be filed by DWR;
- An annual compliance report to be filed by DWR; and
- A dispute resolution procedure.

DELEGATE AGENCIES

The Warren-Alquist Act provides the CEC with exclusive siting authority for thermal power plants and related facilities. To the extent permitted by law, the CEC will delegate authority for compliance verification to various state and local agencies who have expertise in subject areas where specific requirements have been established as a condition of site certification. In the event that a delegate agency is unwilling or unable to participate in this program, the CEC will establish an alternative method of verification.

VERIFICATION OF COMPLIANCE

Verification of compliance with the terms and conditions of certification shall be accomplished either by periodic compliance reports filed by DWR, by appropriate letters from delegate agencies verifying compliance, by auditing project records, or by inspecting the power plant site and related facilities.

PERIODIC COMPLIANCE REPORTS

Information required by the compliance plan to be submitted by DWR to the CEC shall be filed as periodic compliance reports. These reports shall be filed at least once each quarter, numbered consecutively, and contain as a minimum:

- The current project construction or operating status;
- A listing of compliance plan requirements scheduled during the reporting period, with a corresponding description of the status of the requirement, i.e., completed, not started, or in progress;
- For those compliance plan requirements which DWR had expected to satisfy during the reporting period but which were not satisfied, include a statement of how and when DWR intends to satisfy the requirements;
- A listing of any changes to the compliance plan which has resulted from negotiations between DWR and the CEC or its delegate agencies; and
- Notification of any filings made with other governmental agencies having permitting authority over any aspect of the project.

ANNUAL COMPLIANCE REPORT

DWR will submit an annual compliance report to the CEC, which will contain the information required by the compliance plan to be filed on an annual basis. An explanation will be provided for any missing information, including an estimate as to when the information will be provided. The annual report shall summarize the primary compliance activities during the previous year.

COMPLIANCE AUDITOR

The CEC shall designate a compliance auditor for the DWR Bottle Rock Geothermal project. The auditor will be responsible for implementing the approved compliance plan after certification, for maintaining the compliance record files, and for initiating the dispute resolution procedure.

All correspondence pertaining to the DWR Bottle Rock Geothermal project compliance matters should be addressed as follows:

Compliance Auditor (79-AFC-4C)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

NONCOMPLIANCE

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the CEC and can result in proceedings pursuant to Title 20, California Administrative Code, Article 4, Sections 1230 et. seq.

ENFORCEMENT

The CEC's legal authority to impose legal sanctions for noncompliance is specified in Title 20, California Administrative Code, Sections 1230 et seq. and California Public Resources Code, Sections 25531(c), 25532, 25534, and 25900 et seq. Moreover, delegate agencies, as set forth in this document, are authorized to take any action allowed by law in accordance with the delegate agencies' statutory authority, regulations, and administrative procedures to ensure compliance with the terms and conditions of certification and applicable laws, ordinances, and standards.

CEC may exercise all administrative measures authorized by applicable law in the event of noncompliance.

COMPLIANCE RECORD

DWR will maintain for the life of the project files of all "as-built" documents referenced in this report. Staff of the CEC and delegate agencies will, upon reasonable notification, be given access to the files.

The CEC will maintain as a public record:

- All attestments to the fulfillment of legal requirements,
- All periodic and annual compliance reports filed by DWR,
- All documents relative to complaints of noncompliance filed with the CEC, and
- All documents relative to this compliance plan brought before the CEC.

CONFIDENTIAL INFORMATION

Any information which DWR deems proprietary shall be submitted to the Executive Director pursuant to Title 20, California Administrative Code, Section 2505(d). Any information which is determined to be confidential shall be kept confidential as provided for in Title 20, California Administrative Code, Sections 2501 et seq.

DISPUTE RESOLUTION PROCEDURE

The following mediation procedure is designed to resolve informally, when possible, disputes concerning interpretation of compliance with the requirements of the DWR Bottle Rock Geothermal project compliance plan. Either DWR, the CEC, or any other party may initiate this procedure when time is critical in resolving a problem or when the alleged noncompliance does not appear significant enough to warrant a more formal investigation and proceeding.

The procedure is not intended to be a substitute for or prerequisite to the more formal complaint and investigation procedure specified in Title 20, California Administrative Code, Sections 1230 et seq. Nor may the procedure be used to change the terms and conditions of certification as approved by the CEC.

The procedure encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a matter cannot be resolved, then the matter must be referred to the CEC for consideration.

Request for Informal Investigation--Any individual, group, or agency may request the CEC to conduct an informal investigation of an alleged noncompliance with the CEC's terms and conditions of certification for the DWR Bottle Rock Geothermal project. All requests for an informal investigation shall be made to the CEC compliance auditor by either telephone or letter.

Upon receipt of a request for investigation, the compliance auditor shall promptly notify DWR by telephone and subsequently by letter of the allegation. All known and relevant information of the alleged noncompliance shall be provided to DWR and to the CEC staff. DWR shall promptly investigate the matter and within seven working days shall provide a written report of the results of the investigation, as well as all corrective measures undertaken to the compliance auditor and the person requesting such investigation. If the exigencies of the noncompliance demand otherwise, the compliance auditor may request the applicants to provide an initial report within 48 hours by telephone, followed by a written report filed within 7 days.

Request for Informal Meeting--In the event that either the party requesting an investigation or the CEC staff is not satisfied with the DWR report and investigation of the event, as well as the corrective measures undertaken, either may, by written request to the compliance auditor with a copy to DWR, request a meeting with DWR. Such request shall be made within 14 days of DWR's filing of its written report as described above. Upon receipt of such a request, the compliance auditor shall:

- Immediately schedule a meeting with the requesting party and DWR to be held promptly at a mutually convenient time and place,
- Secure the attendance of appropriate CEC staff and staff of any other agency with general jurisdiction and expertise in the subject area of concern,
- Conduct such meeting in an informal and objective manner to encourage the voluntary settlement of any dispute in a manner which is fair and equitable to the interests of all parties, and
- Promptly after the conclusion of such meeting, prepare a memorandum which fairly and accurately sets forth the positions of all parties and any conclusions reached and distribute copies to all attendees.

Request for Commission Hearing--If either DWR, CEC staff, or the party requesting an investigation is not satisfied with the results of said informal meeting, such party may, within 10 working days, request in writing a hearing before the Committee of the Commission, designated for the hearing of such matters. The Committee shall, upon receipt of a written request stating the basis of the dispute and the attempt at informal resolution thereof, grant a prompt hearing on the matter consistent with the

requirements of noticing provisions and shall have authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction.

Appeal from Committee to Commission--Pursuant to Title 20, California Administration Code, Section 1215, the Applicants, CEC staff, or the party requesting an investigation may request review of any committee order or decision.

All recommended amendments to conditions of certification resulting from Committee investigations shall be approved by the full Commission.

BOTTLE ROCK
CONDITIONS OF CERTIFICATION

SECTION 1: AIR QUALITY

1-1 The LCAQMD shall perform all duties and functions normally conducted by the APCD District and shall have authority to issue a Permit to Operate, collect the permit fees, levy fines, order correction of operational or mechanical procedures or functions, and perform compliance tests. The established LCAQMD appeal procedures shall apply for all contested LCAQMD actions.

Verification: The project owner shall summarize in an annual compliance report any interactions with the LCAQMD. The project owner shall immediately inform the CEC CPM and ARB in writing of any formal appeals filed with the LCAQMD.

1-2 The project owner shall comply with the requirements specified in the "Modified Determination of Compliance," dated February 22, 1982, with modifications in the LCAQMD Authority to Construct for the Bottle Rock Power Plant (Permit # 80-034A) as amended and with the conditions of the Authorities to Construct listed below The project owner shall comply with the LCAQMD requirements for initiating commercial operation upon commencing renewed commercial operation of the Bottle Rock Power Plant.

- A/C 2006-20 Mechanical Liquid Seal Ring Vacuum Pump Addition
- A/C 2006-21 Stretford Process Equipment Modifications
- A/C 2006-22 Sulfur Cake Process, Spare Vacuum Filter Addition
- A/C 2006-23 Mercury Scrubber Addition
- A/C 2006-24 Condensate H2S Abatement System Modifications
- A/C 2006-25 Automated Supervisory Control System Modifications
- A/C 2006-26 Steam Transmission Line Modifications

Verification: The project owner shall annually request a letter from the LCAQMD verifying the status of the project owner's compliance with the conditions of each Authority to Construct and the modified Determination of Compliance. The project owner shall provide the CEC CPM with a copy of this letter in the annual compliance report. In addition, the project owner shall provide a copy of all quarterly reports and testing/monitoring summary reports submitted to the LCAQMD.

DOC CONDITIONS

District Permit # A/C 80-034A, Modified Determination of Compliance

DOC-1 Hydrogen sulfide (H2S) emissions from the Bottle Rock Power Plant (BRPP) shall be limited to a maximum of five (5) pounds per hour during power plant generation and all possible generation outages. All untreated steam or condensate shall be returned to a treatment or reinjection point to ensure this level of emissions is maintained.

DOC-2 The atmospheric emissions control system (AECS) described in the AFC and revision to the AFC, April 18, 1980, shall be utilized. The system as described, which constitutes the best available control technology, shall consist of the following concurrently available major components:

a) A surface condenser to facilitate the partitioning of H2S into the non condensable gas phase;

b) A Stretford unit as specified in the AFC to reduce the H2S concentration in the non condensable gases to 10 parts per million by volume (ppmv) or less;

c) Secondary condensate treatment which includes sufficient hydrogen peroxide (H2O2) and catalyst injection and reaction time to ensure the power plant will comply with the emission limitation specified in Condition **DOC-1**;

d) A turbine by-pass system sufficiently sized to accept 100 percent of full steam flow during generating outages so that the power plant emission control system can be utilized to treat steam normally stacked during the outage.

e) The air emissions control system specified above shall be properly winterized.

f) If a solids removal system is necessary as a result of solids formation in the condensate, such facility shall be incorporated into the system.

g) In the event of Bottle Rock generation loss, an alternate source of power to enable the continued use of the air emissions control system specified above shall be available.

h) A stand by generator capable of sustaining station power and the Emergency Stacking System shall be available and fueled with low sulfur fuel of 0.5 percent or less for use in case of concurrent transmission line and generator failure.

DOC-3 The major components of the air emissions control system, Stretford, Turbine by-pass, and condensate abatement shall incorporate a design to enable a 99 percent availability excluding scheduled maintenance on these individual major components. If such design criteria cannot be established, abatement systems shall be retrofitted as necessary to achieve performance at this level.

DOC-4 Upon failure of H2S abatement equipment, the project owner shall curtail to a level necessary to comply with the five (5) lbs/hr H2S emissions limitation or provide for a mechanism allowing an immediate determination of prevailing atmospheric conditions to enable the LCAPCO to make a decision as to whether it is acceptable to continue operation at a higher emissions level.

DOC-5 The cooling tower shall have a guaranteed drift rate of no more than 0.00002 as described in the AFC.

DOC-6 The off-gas vent to the atmosphere shall be used only during legitimate emergencies and to enable the cold start-up of the power plant turbine. Steam

flows shall not exceed 25,000 lbs/hr to the power plant during direct venting of untreated non condensable gases in the steam. The turbine by-pass shall be used if possible to avoid direct venting into the atmosphere of undiluted non-condensables. The LCAQMD shall be notified when cold start-ups in excess of 5 lbs H2S/hr are to occur and may cancel such activity if deemed necessary.

DOC-7 The project owner shall install alarms and switches on the following units to ensure immediate corrective action is initiated to prevent outages and potential stacking. Alarm/trip conditions noted with an asterisk have a separate alert and trip alarm function and those alarm/trip conditions without an asterisk are coincident alarm/trip functions:

Turbine Generator Unit –

1. Excessive vibration switch, alarm and trip;
2. Lateral motion switch on the turbine shaft, alarm and trip;
3.* High lube oil temperature switch, alarm and trip;
4.* Low lube oil pressure switch with indicating light in control room;
5.* Low lube oil sump level switch, alarm;
6. Over-speed switch, alarm and trip;
7.* High hydrogen gas temperature and low purity hydrogen alarm and trip;
8.* Seal oil level switch and alarm;
9.* Differential pressure switch to prevent low differential pressure between the seal oil and hydrogen pressure, alarm and trip;
10.* Generator moisture detector and alarm;
11.* Vacuum switch to prevent low vacuum in the seal oil detaining tank, alarm and trip;
12.*Turbine bearing metal temperature alarm and trip.

Condensers -

1.* Pressure switch to prevent condenser pressures from exceeding design levels, alarm and trip;
2.* Condensate level switches to start and stop pump, prevent excessively high condensate levels in hot well;
3.* High or low condensate levels alarms.

Cooling Towers -

1.*Float switches and indicators to start and stop the pump in the cooling tower overflow basin and provide alarms;
2. Vibration switches and alarms on each cooling tower fan.

Electrical System -

1. Generator differential current trip and alarm;
2. Generator over-current trip and alarm;
3. Generator ground fault trip and alarm;
4. Generator anti-motoring trip and alarm;

5. Generator field ground trip and alarm;
6.* Generator stator over temperature alarm and trip;
7. Loss of excitation trip and alarm;
8. System negative phase sequence trip and alarm;
9. Transformer differential current trip and alarm;
10. Transformer over-current trip and alarm;
11. Transformer ground fault trip and alarm;
12. Transformer sudden pressure trip and alarm;
13.* Transformer winding temperature alarm;
14.* Transformer oil temperature alarm.

DOC-8 The LCAQMD shall be notified within one hour following any power plant outage or malfunction resulting in emissions in excess of five (5) pounds per hour H2S at (707) 263-7000, or a number to be provided by the LCAQMD. The project owner shall maintain a log of power plant outages along with explanations for the outages and malfunctions. In the event that power plant outages recur because of equipment malfunctions that are not indicated by alarms, the project owner shall retrofit alarms on the malfunctioning equipment as possible. The log shall be available for inspection upon the request of the staffs of the LCAQMD, ARB, CEC, and EPA.

DOC-9 The power plant abatement system shall have an operator on site at all times. The operator must be able to immediately take necessary corrective action in the event of power plant outage or equipment malfunction in order to meet the conditions of this Determination of Compliance. The project owner shall provide a telephone number at which the Bottle Rock operator or a representative can be reached to ensure LCAQMD entry for inspection purposes within one (1) hour of notification. If for considerations of safety, the project owner cannot comply with such a specific request, the project owner shall forward in writing within one week a letter explaining the reasons entry within one hour could not be allowed the LCAQMD staff.

DOC-10 The project owner‘s approved-for-construction drawings or other drawings acceptable to the LCAPCO of the Stretford unit, turbine bypass, and secondary abatement (condensate treatment) system shall be submitted to the LCAQMD and CEC for comment and review at the earliest possible date and in time for such drawings to be commented upon and modified if necessary. The project owner shall not be required to submit proprietary information unless specifically requested by the LCAPCO pursuant to Section 91010, Title 17, California Administrative Code.

DOC-11 The project owner shall submit to the LCAQMD, ARB, and CEC the results of the pilot test program performed by Bechtel National, Inc., no later than February 1, 1982, or within one month before the finishing of final design of the hydrogen peroxide/catalyst abatement system.

DOC-12 Although the applicant is to be licensed upon the use of BACT as described in Condition **DOC-2**, the project owner may use other means to comply provided

the LCAQMD, ARB and CEC are provided performance data indicating the other means are capable of achieving the same emissions limitations and reliability as those defined in Condition DOC-2. Any such changes shall be decided at a properly noticed public hearing to be convened jointly by the LCAQMD and CEC, no later than two years prior to anticipated power plant operation at which the ARB and all intervenors shall be invited to participate. The LCAQMD concurrence upon any changes must be given.

DOC-13 The access road from Bottle Rock Road to the power plant shall be paved to ensure that the generation of fugitive particulate matter is minimized.

DOC-14 Within sixty (60) days after initial power production, the project owner shall demonstrate that the applicable emissions limitations are being maintained during normal power plant operations. The project owner shall submit a detailed performance test plan to the LCAQMD at least thirty (30) days prior to such tests. Such plans shall also be designed to determine the particulate emissions rate and components of particulate emitted. The project owner's proposed test plan must receive LCAQMD and CEC staff approval before such tests may be conducted to determine compliance.

The ARB shall arbitrate difference if concurrence on a test procedure can not be reached between CEC, the project owner and the LCAQMD and recommend a binding procedure. Safe sampling access and ports to enable the LCAQMD to gather samples from the freshly treated condensate, cooling tower stack and treated gas from the Stretford system shall be provided.

DOC-15 Reports shall be issued quarterly to the LCAQMD detailing: a) hours of operation, b) any periods for which abatement equipment malfunctioned and the action taken; c) chemicals utilized for treatment of condensate; d) periods of scheduled and unscheduled outages and the reasons for such outages; and e) summary of the output of continuous emissions monitors with explanations of any irregularities.

DOC-16 Within ninety (90) days after commercial operation the project owner shall file with the LCAQMD an application for a Permit to Operate together with all appropriate information to ensure compliance with the certification and submit permit fees.

DOC-17 The project owner shall take all reasonable measures to comply with a any future air emittent or ambient standard or guideline adopted for present non criteria pollutants (i.e., mercury, boron, arsenic, radon- 222, etc.) by responsible State or Federal agencies and/or comply with guidelines established as part of the project owner's certification by the California Energy Commission.

DOC-18 The project owner shall promptly fund reasonable studies or tests as required by the LCAPCO to ascertain the impact of BRPP when operating, specifically at the residence located approximately 1,900 ft east of the Francisco pad, should the resident in good faith file complaints with the LCAPCO indicating the air quality is worsening or becoming a nuisance or unhealthful as a result

of Bottle Rock's operation. These studies shall include, but not be limited to, monitoring at the residence to determine H2S levels and particulate or other components which are believed or known to be in geothermal steam, tracer tests or source tests. Such studies shall be approved by the LCAPCO prior to initiation. Reasonable mitigation steps shall be applied upon request of the LCAPCO to attempt to remedy any unlawful impacts caused by the Bottle Rock power plant upon the residence.

DOC-19 The incoming steam to the power plant shall be analyzed quarterly and reported to the CEC and LCAQMD for radon-222 and its daughters, mercury, arsenic, silica, boron, benzene, ammonia, and total suspended solids for the first two years of operation. The results of these tests shall be reviewed by the LCAPCO to determine if thereafter annual testing will suffice. The project owner may join with the steam supplier in performing such tests. Results of any tests performed upon the cooling tower sludge shall also be forwarded to the LCAQMD.

DOC-20 H2S emissions shall be monitored continuously by measuring total volume flow rates and H2S concentrations at the following locations: a) incoming steam; b) outlet of the Stretford unit; and c) in the treated condensate. A log of such monitoring shall be maintained and be made available to LCAQMD staff upon request. The devices must have accuracies of +1 ppm, provide measurements at least every 15 minutes, and be accessible to LCAQMD staff. Flow rate measuring devices must have accuracies of +5 percent at 40 to 100 percent of the total flow rate and calibrations must be performed at least quarterly. Calibration records must be made available to LCAQMD staff upon request. Monitoring shall be required pursuant to Section 42303 of the California Health and Safety Code. In the event that acceptable continuous monitors are not available,

The project owner shall conduct testing no less than once every thirty (30) days to ensure the efficiencies of the H2S abatement systems are being maintained. The testing procedure used to determine compliance must be approved by the LCAPCO. A log of such testing shall be maintained and be available to LCAQMD staff upon request. The project owner shall on an annual basis after the date of the decision submit for approval by the LCAQMD, CEC and ARB a summary of the project owner’s efforts to develop, research, let for contract to research, or let for contract to implement use of equipment, that is to be a likely candidate for a continuous condensate and noncondensable gas monitor for hydrogen sulfide.

In either case, a summary of the monitoring and/or testing shall be forwarded to the LCAQMD every three (3) months.

DOC-21 The project owner shall, at the request of the APCO, install, operate and maintain an on-site meteorological station capable of determining wind direction, wind speed, standard deviation of the direction, and temperature. Such data shall be furnished to the LCAQMD on a monthly basis in an hourly/day format and quarterly in a summary format acceptable to the APCO.

DOC-22 Compliance monitoring shall be conducted for a minimum one (1) year period before initial operation and one (1) year period after initial operation. Constituents to be monitored include arsenic, boron, mercury, radon-222, benzene, silica, and particulates in addition to H2S. Constituents shall be measured both as suspended aerosols and fall-out. Monthly composite samples of fall-out shall be collected using a wet/dry collector. Constituents other than H2S may be measured every sixth day, per the ARB particulate sampling schedule. The project owner, CEC, and LCAQMD shall agree upon methods used in sampling and analysis. At the end of the indicated period, the monitoring program will be reviewed by the APCO and the feasibility and necessity for continuance determined. The site for such monitoring shall be in the Cobb Valley area unless the project owner and the LCAQMD agree upon a mutually acceptable alternative site. If the project owner enters into a combined effort with other developers or an alternative monitoring program acceptable to the LCAQMD and CEC, this condition shall not be exercised.

DOC-23 Added condition resulting from modification 1982 Modified Determination of Compliance.

A) Regarding secondary abatement:

LCAQMD shall incorporate into the Bottle Rock Power Plant construction the ability to control the pH of treated condensate, provide for the oxidation of H2S utilizing H2O2, ensure a residence time of 75 or more seconds, and incorporate the ability to add on a catalyst injection capability to the secondary system should operating experience show such is necessary. Chemical storage capacity shall be as specified in the AFC amendments and no less than one weeks supply shall remain on-site at all times. Alternatively, DWR the project owner can provide information acceptable to the LCAQMD and ARB establishing pH adjustment and control is not necessary at the Bottle Rock Power Plant or provide temporary facilities (portable) for the injection of NaOH during power plant start-ups until the question of pH control can be resolved.

Required Future Reports & Documents:

The project owner shall forward the Bechtel H2S Oxidation Study final report immediately upon its being finalized. And, no less than two months prior to initiating construction of the condensate abatement system, a detail design of the condensate abatement system shall be submitted formally in writing to the LCAQMD to enable compliance with these DOC requirements to be established by the LCAQMD.

B) Regarding the turbine by-pass to power plant main condenser system:

The project owner shall incorporate reliable and proven valves, noise attenuation of the valving, and desuperheating of by-passed steam/or account for in the design of the system, the ability to successfully by-pass 100 percent of the steam load.

Required Future Reports & Documents:

The project owner shall submit to the LCAQMD within 60 days a report detailing at a minimum:

(1) The selection of the turbine by-pass valves, the operating experience with the selected valves, and the specific reason the valve design selected was chosen. To the extent possible, this report shall address the material presented in the Gibbs & Hill report on the subject.
(2) The design features incorporated and/or operating experience to ensure that the absence of desuperheating ability will not adversely affect the operation of the turbine by-pass or power plant emissions control system.

The project owner shall within sixty days prior to installation of the by-pass system provide detailed engineering drawings and a description in writing of the operation procedure for the turbine by-pass to power plant condenser system. The design shall incorporate the ability to by-pass during start-up and partial curtailment as well as total turbine failure.

The project owner, prior to operation of Bottle Rock shall with the steam supplier enter into an agreement detailing the responsibilities for operations of the turbine by-pass and emergency stacking abatement systems. Also, the interface between the stacking system controls shall be delineated by the steam supplier and the project owner and approved by the LCAQMD. A copy of the agreement shall be filed with the LCAQMD no less than 60 days prior to initial power plant operation.

District Permit # A/C 2006-20, Mechanical Liquid Seal Ring Vacuum Pump Addition

AC20-1 This Authority to Construct is to modify the existing non-condensable gas removal system, air emissions control system (AECS), and to blind flange the auxiliary steam non-condensable gas vent; all other permits, associated conditions, and limitations are not modified. The permitted modification is described in the application for modification and evaluated in the analysis accompanying this permit issuance. Equipment utilized and/or modified which is significantly different than that described in the permit application is subject to permit application and review. A permit to operate application shall be made within one year of initial operation, and the subject permit shall be incorporated into the general permit for the power plant.

AC20-2 The gas ejectors shall remain operable and available for use in the event of failure of the mechanical vacuum pump.

AC20-3 All drain or discharge seal water shall be directed to the rich condensate collection and disposal system.

AC20-4 This permit does not modify or make less restrictive any emission limitation, reporting, and/or monitoring/testing requirements that presently exist for this facility.

AC20-5 The applicant shall provide the District, no less than 30 days subsequent to the installation and operation of the herein authorized modification, with as-built drawings for the modification, including Non- Condensable line(s) and AECS showing gas flow, and rich condensate collection and disposal method (reinjection or reflashing in the condenser).

AC20-6 The operator shall provide safe access for representatives of the District, ARB, or EPA to inspect, review records, or collect samples as approved by the APCO, from this facility. Should the plant be secured by locks or gates, the District shall be provided keys, combinations of other means to gain immediate access for purpose of testing or inspection.

District Permit # A/C 2006-21, Stretford Process Equipment Modifications

AC21-1 This Authority to Construct is for the addition of a 10 inch diameter skimming pipe on the Delay Tank between the existing 6 inch skimming lines, the addition of two (2) Oxidizer Tank air spargers operated by the air blowers, and all necessary piping and valves at the Bottle Rock Power Plant Stretford H2S Treatment system; all other permits, associated conditions, and limitations are not modified, except as explicitly approved. The permitted modification is described in the application for modification and evaluated in the analysis accompanying this permit issuance. Equipment utilized and/or modified which is significantly different than that described in the permit application is subject to permit application and review. A permit to operate application shall be made within one year of initial operation, and the subject permit shall be incorporated into the general permit for the power plant. The installation and operation of the modification shall not hinder the operation of the existing plant systems or inhibit emission limit compliance, as operated under A/C 80-034A.

AC21-2 The ability to return the H2S gas treatment components of the AECS operation to the pre-modification operation shall be retained. BRPC shall notify the District upon completion of tile modifications to arrange for an inspection.

AC21-3 Within 30 days after the installation of the skimming lines and air sparging head are completed and operational, the permit holder shall submit a set of “as built” drawing(s) detailing the Stretford/Peabody H2S abatement system.

AC21-4 This permit does not modify or make less restrictive any emission limitation, reporting, and/or monitoring/testing requirements that that presently exist for this facility.

AC21-5 The operator shall provide safe access for representatives of the District, ARB, or EPA to inspect, review records, or collect samples as approved by the APCO, from this facility. Should the plant be secured by locks or gates, the District shall be provided keys, combinations or other means to gain immediate access for purpose of testing or inspection.

District Permit # A/C 2006-22, Sulfur Cake Process, Spare Vacuum Filter Addition

AC22-1 This Authority to Construct is for the addition of a second rotating vacuum drum (Bird Filter) for optional use, and removal of a sulfur melter; all other permits, associated conditions, and limitations are not modified herein. The permitted modification is described in the application for modification and evaluated in the analysis accompanying this permit issuance. Equipment utilized and/or modified which is significantly different than that described in the permit application is subject to permit application and review. A permit to operate application shall be made within one year of operation, and the permit to operate may be incorporated into the general permit for the power plant.

AC22-2 The applicant shall provide the District, no less than 30 days subsequent to installation of the herein authorized modification, with as-built drawings for the modification.

AC22-3 This permit does not modify or make less restrictive any emission limitation, reporting, and/or monitoring/testing requirements that presently exist for this facility.

AC22-4 The operator shall provide safe access for representatives of the District, ARB, or EPA to inspect, review records, or collect samples as approved by the APCO, from this facility. Should the plant be secured by locks or gates, the District shall be provided keys, combinations or other means to gain immediate access for purpose of testing or inspection.

District Permit # A/C 2006-23, Mercury Scrubber Addition

AC23-1 This Authority to Construct is for the installation of up to two mercury scrubber vessels and necessary modifications to the existing noncondensable H2S gas treatment system at the Bottle Rock Power Plant to be inserted downstream of the water knockout and upstream of the delay tank. The permitted modification is described in the application for modification and evaluated in the analysis accompanying this permit issuance. Equipment utilized and/or modified which is significantly different than that described in the permit application is subject to permit application and review. A permit to operate application shall be made within one year of initial operation of installed components, and the subject permit shall be incorporated into the general permit for the power plant. If the second scrubber unit is not yet installed after one year, the A/C may be renewed.

AC23-2 BRPC shall install and maintain sampling ports on the influent and effluent sides for each mercury scrubber and measure and report measured efficiency of mercury scrubbing to the AQMD upon reaching 20 megawatts of generation, but no later than within the first year of initial operation. A log shall be maintained of unit maintenance to include dates of media changes and the reason for change out, any events of plugging, and all coincident mercury measurements made in sulfur product. The log shall be forwarded quarterly to the AQMD, or provided upon request.

AC23-3 All drain water discharged shall be directed to the rich condensate collection line.

AC23-4 Equipment shall be operated within supplier/manufacturers specifications. A local gauge indicating pressure drop across the unit shall be incorporated into the installation. Additionally, BRPC shall continuously monitor the scrubbers for pressure loss utilizing the DCS measurements prior to the delay tank and on the backside of the mechanical pumps, and incorporate alert and maintenance action warning levels prior to generation unit trip due to overpressure or back pressure of scrubbing media.

AC23-5 BRPC shall notify the District upon completion of installation of the mercury scrubber(s) to arrange for an inspection, and enable source testing to be performed.

AC23-6 This permit does not modify or make loss restrictive any emission limitation, reporting, and/or monitoring/testing requirements that presently exist for this facility.

AC23-7 BRPC shall provide the District, no less than 60 days subsequent to installation of the herein authorized modification, with as-built drawings for the modification, including sample port locations.

District Permit # A/C 2006-24, Condensate H2S Abatement System Modifications

AC24-1 This permit is for refinements to the existing condensate piping and valving servicing the Bottle Rock Geothermal Power Plant and permanent addition of the iron chelate chemical injection system; all other permits, associated conditions, and limitations are not modified herein. The permitted modification is described in the application for modification and evaluated in the analysis accompanying this permit issuance. Equipment utilized and/or modified which is significantly different than that described in the permit application is subject to permit application and review. A permit to operate application, containing operating scenarios and contingency actions, shall be made within one year of initial operation, and the permit to operate may be incorporated into the general permit for the power plant. A performance plan consistent with rule 655 is recommended. The condensate reroute and iron chelate addition modifications shall be installed in a manner so as to minimize emissions from the facility by extending the contact time with oxygenated cooling tower basin waters to the maximum extent and consistent with documentation in the application and permit review issuance. Injection of iron chelated catalyst at the cooling tower basin or within the cooling tower circulating water shall be incorporated.

AC24-2 The permit holder shall properly install and maintain a properly sized, winterized condensate (cooling tower working water, condensate reroute valving and piping) H2S abatement system modification incorporating the availability of an iron chelate (Fe•HEDTA) catalyst, hydrogen peroxide, and

other additives as approved by the APCO, to achieve an overall emissions rate specified in A/C 80-034A.

AC24-3 BRPC shall cause to be performed tests that establish compliance with permit emissions limitations under anticipated plant and AECS components operating scenarios, consistent with existing facility AQMD permits and the DOC. This shall include cooling tower stack source testing as described in Appendix 2 of the permit reviews and the DOC. Planned operating scenarios shall be described in writing, include required emission testing protocols, and be provided the APCO a minimum of two weeks prior to any operational tests or scheduled source testing. To the extent possible, operating scenarios shall identify measurable parameters that can indicate compliance, or the lack thereof to be correlated with cooling tower stack emissions testing.

A source test plan consistent with the facility permit requirements to determine H2S emissions, for any operating scenario of more than one week duration, shall be provided two weeks prior to testing the scenario. Source tests plans shall be approved by the AQMD prior to testing. Required cooling tower stack source testing can be delayed and H2O2 addition presumed unnecessary, unless requested by the APCO, provided all of the following are met: 1) AECS components are available, supplied and operable; 2) the cooling tower basin water has excess available dissolved oxygen and the hot well condensate is directed to the cooling tower basin; 3) incoming steam is 450 ppmw H2S or less; 4) the Fe•HEDTA concentration is 5 ppm or greater in the working water; and 5) delivered steam to tire plant does not exceed 150,000 lbs/hr.

AC24-4 The applicant shall provide the District, no less than 30 days subsequent to installation and operation of the herein authorized modification, with as-built drawings for the modification, detailing the condensate and cooling tower portions of the facility associated with secondary H2S abatement. The submittal shall identify in detail the selected operational scenario, approved by the APCO (based on testing performed under Condition 3) to be utilized at the facility. This shall include flow routing of cooling tower working water, hot well condensate flow rate and routing, reinjection rate (H2S rich and normal). Fe•HEDTA and all chemical feed injection rate(s) and location(s), arid factors effecting contract times of dissolved H2S in aerated working waters or with H2O2.

AC24-5 Except as specified in Condition 2 this permit does not modify or make less restrictive any emission limitation, reporting, and/or monitoring/ testing requirements that presently exist for this facility.

AC24-6 The operator shall provide safe access for representatives of the District, ARB, or EPA to inspect, review records, or collect samples as approved by the APCO, from this facility. Should the plant be secured by locks or gates, the District shall be provided keys, combinations or other means to gain immediate access for purpose of testing or inspection.

District Permit # A/C 2006-25, Automated Supervisory Control System Modification

AC25-1 This Authority to Construct is for the replacement of the existing control systems of the power plant and steam field with a unitized automated control and reporting system, “Distributed Control System” (DCS), including several levels of redundancies, backup processors, backup power for well head automated valves, and central controls for all power plant, steam field, and abatement system operations; all other permits, associated conditions, and limitations are not modified herein. The permitted modification is described in the application for modification and evaluated in the analysis accompanying this permit issuance. Equipment utilized and/or modified which is significantly different than that described in the permit application is subject to permit application and review. A permit to operate application shall be made within one year of operation, and the permit to operate may be incorporated into the general permit for the power plant.

AC25-2 Stretford Tail gas monitor output shall be recorded on a continuous paper strip chart recorder or an APCO approved equivalent device.

AC25-3 Condition 7 of the existing geothermal power plant authority to construct permit (A/C 80-034A) shall apply to the herein-permitted modification, and requirements contained therein for alerts, preventative maintenance, action, and reporting shall be incorporated into the DCS.

AC25-4 The applicant shall provide the District, no less than 30 days subsequent to reaching sustained plant production with the herein authorized modification, with a description, detailing location and type of instruments, processors, actuated valves, identifying alerts, action levels and failure levels that would trigger failure of the AECS or the need to utilize the emergency steam stacking (ESS) system.

AC25-5 This permit does not modify or make less restrictive any emission limitation, reporting, and/or monitoring/testing requirements that presently exist for this facility.

AC25-6 The operator shall provide safe access for representatives of the District, ARB, or EPA to inspect, review records, or collect samples as approved by the APCO, from this facility. Should the plant be secured by locks or gates, the District shall be provided keys, combinations or other means to gain immediate access for purpose of testing or inspection.

District Permit # A/C 2006-26, Steam Transmission Line Modification

AC26-1 This Authority to Construct is to modify the existing geothermal fluid (steam) transmission pipeline, steam wash, and emergency steam stacking system servicing the Bottle Rock Power Plant; all other permits, associated conditions, and limitations are not modified. The permitted modification is described in the application and evaluated in the analysis accompanying this permit issuance. The pipeline shall be constructed and operated in a manner to not increase

steam stacking during scheduled and unscheduled power generation or transmission line outages or during power plant startups and shutdowns of the unit. Equipment utilized and/or modified which is significantly different than that described in the permit application is subject to permit application and review. A permit to operate application shall be made within one year of initial operation, and the subject permit shall be incorporated into the general permit for the power plant.

AC26-2 Pipeline cleanout, testing and startup emissions shall be consistent with the submitted project application and minimized to the extent feasible. The operator shall provide the District 72 hours advance notice of scheduled cleanout and testing operations and obtain prior APCO approval for the date and time of emissions release or obtain a variance.

AC26-3 All drain water discharged shall be directed to the rich condensate collection and disposal line.

AC26-4 This permit does not modify or make less restrictive any emission limitation, reporting, and/or monitoring/testing requirements that presently exist for this facility.

AC26-5 The applicant shall provide the District, no less than 30 days subsequent to installation of the herein authorized modification, with as-built drawings for the modification, including all steam or gas vent locations.

AC26-6 The operator shall provide safe access to sampling ports that enable representatives of the LCAQMD, ARB, or EPA to collect samples, as approved by the APCO, from the steam stacking muffler, condensate collection basins, or any point release of steam, gas, or emissions to the ambient air.

1-3 The project owner shall use atmospheric emissions control systems as specified by the LCAQMD Authority to Construct for the Bottle Rock Power Plant (Permit # 80-034A) and approved by the CEC CPM. The emissions control systems shall include a Stretford H2S abatement system, a secondary H2S treatment system utilizing iron chelate and/or hydrogen peroxide injected into hot condensate, and an emergency steam turbine bypass system for outages.

Verification: The project owner shall submit copies of the proposed permit application and written approval from the LCAQMD with the CEC CPM prior to beginning construction of any H2S emission abatement system.

1-4 The project owner shall submit approved-for-construction drawings of the power plant secondary H2S control system to the CEC CPM only if requested by the CEC CPM.

Verification: If requested, such drawings shall be submitted by the project owner to the CEC CPM at least 30 days prior to commencing construction of the system.

1-5 Modified DOC Conditions **DOC-14** and **DOC-20** require submittal of a detailed test plan for testing the performance of the Bottle Rock plant H2S emissions abatement systems at normal full load operation. If continuous H2S monitors are available (determined by LCAQMD and ARB), the project owner shall ensure that the detailed plan includes the following test parameters: (1) the test data shall reflect a minimum of 80 percent of the gross electricity generating capacity and (2), in the event that at least 30 days of qualifying data could not be obtained during the 90-day test period specified in the 1982 Modified DOC (**DOC-14**), the project owner shall continue to collect test data until the required information has been obtained. The application for a Permit to Operate shall be filed as specified in 1982 Modified DOC Condition **DOC-16** and need only include the results of the performance test conducted during the initial 90 days of commercial operation.

Verification: The project owner shall provide the CEC CPM with a copy of the detailed plan submitted to the LCAQMD for review and approval and a copy of the plan as approved. In addition, if the test period extends beyond the initial 90 days after commercial operation, the project owner shall file a supplementary report with the CEC CPM and the LCAQMD which reflects all the results of the performance test.

1-6 The project owner shall, if requested by the LCAQMD, operate and maintain an on-site meteorological station capable of determining wind direction, wind speed, and temperature and provide resultant data to the LCAQMD.

Verification: The project owner shall furnish proof of installation and maintenance of the meteorological station and submission of the data there from in a form acceptable to the LCAQMD. The submittals shall be noted in periodic compliance reports filed with the CEC CPM.

1-7 The project owner shall participate in Geysers' Air Monitoring Program (GAMP) III for the life of the program.

Verification: The project owner shall submit in the Annual Compliance Report a statement describing project owner's participation in GAMP.

1-8 The project owner shall maintain all existing Authorities to Construct (ATCs) and Permits to Operate (PTOs) required under Lake County Air Quality Management District (LCAQMD) regulations.

Verification: The project owner shall submit in the Annual Compliance Report to the CEC CPM appropriate confirmation from the LCAQMD that all ATCs and PTOs are current and active under the terms and Conditions of LCAQMD Rules and Regulations.

The project owner shall also include in this report a statement identifying any complaints and actions of resolution for air quality for the Bottle Rock facility.

The project owner shall submit an Annual Compliance Report for each calendar year no later than February 15th, of the year following the reporting year.

REFERENCES

CARB (California Air Resources Board). 2006. Attainment and Area Designations Maps

/ State and National. October 2006.

LCAPCD (Lake County Air Pollution Control District). 1980. Determination of Compliance (DOC), DWR/Bottle Rock Geothermal Power Plant. September 24, 1982.

LCAPCD (Lake County Air Pollution Control District). 1982. Modified Determination of Compliance (DOC), DWR/Bottle Rock Geothermal Power Plant. February 22, 1982.

LCAQMD (Lake County Air Quality Management District). 2006a. Permitting Review for Bottle Rock Power Corporation. August 30, 2006.

SECTION 2: PUBLIC HEALTH

2-1. The project owner shall conduct quarterly sampling and analysis for radon- 222 concentrations in noncondensible gases entering the power plant. An outline of the current California Department of Health Services Radiologic Health Section (CDHS/RHS) minimal requirements for monitoring and reporting on radon-222 follows:

- The facility must be sampled at least quarterly.
- The sampling and analysis methods must be shown to be accurate by comparison to known standards supplied by an acceptable source (e.g.,EPA). This "standard comparison" or "calibration" shall be run with each set of samples counted unless it is shown that the counting system is sufficiently stable. If calibration is unnecessary for each run, then calibration shall be required at least once per year.
- Each power production unit must be sampled such that the instantaneous radon-222 emission rate (Ci/sec) to the environment is accurately determined.

  This radon-222 monitoring program will be conducted for at least the first three years of commercial operation. If monitoring results indicate that the radon-222 release for the Bottle Rock facility is well within applicable standards, the program may be modified, reduced in scope, or eliminated, provided the approval of CDHS/RHS is obtained by the project owner. As new information and techniques become available, with concurrence of the project owner and CDHS/RHS, changes may be made to the program or the methods employed in monitoring radon-222.

Verification: Approximately 10 percent of samples will be taken in duplicate, with the duplicate sample sent to the CDHS Sanitation and Radiation Laboratory in Berkeley for cross-check analysis as a quality control on the project owner's laboratory analyses.

The project owner will provide annual reports to CDHS/RHS discussing each point above. All results shall include the standard deviation associated with the counting error. Sources of error in the sampling procedure and emission calculation shall be discussed.

The report shall also indicate the maximum dose due to emissions calculated at the site boundary, and to the resident nearest the location of maximum radon- 222 concentration, and the resultant expected population dose. (These dose calculations may follow a simplified methodology established by CDHS/RHS.)

Annual reports shall be maintained by CDHS/RHS and be available to the CEC and the public on request. CDHS/RHS shall report annually the results of the radon-222 monitoring program to the CEC. This report shall include, at a minimum, data concerning average and high values of radon-222 emissions and incidences of the 3.0 pCi/l and 6.0 pCi/l level exceedances (see 2-2. and 2-3. below).

If the program is modified, reduced in scope, or eliminated, The project owner shall send a copy of CDHS/RHS approval to the CEC CPM.

2-2. **I**f the radon-222 concentration exceeds 3.0 picocuries per liter (pCi/l) in the cooling tower exhaust, the project owner must inform the CDHS/RHS and CEC CPM with a special report within 30 days of confirming an exceedance.

Verification: The project owner shall provide a written report to CDHS/RHS and CEC CPM of sample results within 30 days of confirming an exceedance of 3.0 (pCi/l) radon-222 in the cooling tower exhaust. Confirmation includes the reanalysis of the sample by the project owner or another qualified laboratory. Confirmation of sample results must be accomplished in the most expedient manner possible. The procedures used shall be the same as the normal analysis but may include sending samples to CDHS/RHS and/or outside qualified laboratories for analysis. The confirmation of a sample should take less than five calendar days. The project owner shall notify the CEC of corrective actions taken.

2-3. If the radon-222 concentrations exceed 6.0 pCi/l in the cooling tower exhaust, the project owner shall notify the CDHS/RHS and the CEC by email or telephone within 24 hours of confirmation of the sample result.

Verification: The project owner shall notify CDHS/RHS and the CEC within 24 hours of confirming the sample results. (See 2-2. above for confirmation requirements.) The project owner shall notify the CEC of corrective actions taken.

2-4. The project owner shall obtain baseline ambient air measurements for benzene, silica, mercury, arsenic, ammonia, and vanadium in accordance with the following requirements. These requirements may be accommodated as a part of any established regional data-gathering program acceptable to LCAPCO and CEC staff.

- Measurements shall be made in the populated areas in Cobb Valley downwind of the power plant, to be determined by LCAPCO, CEC staff, and the project owner. Sampling will be performed for at least one year prior to commercial operation.
- Mercury will be measured in the particulate and vapor state.
- Benzene will be measured in the vapor state.
- Particulate measurements for silica, arsenic, mercury, and vanadium will be made using a sampler for inhalable particulates. Elemental analyses may be performed using particle induced X-ray emission (PIXE) techniques, atomic absorption or neutron activation techniques. Particulate samples will be collected every sixth day on the same schedule as the California Air Resources Board (CARB) statewide hi-vol particulate monitoring.
- Mercury vapor measurements will be made by trapping the vapor and subsequent laboratory analysis. The schedule for mercury vapor sampling may differ from the particulate sampling depending on the exact method used. Ammonia will be measured in the gaseous state concurrently with hydrogen sulfide. If a uniform ratio exists between ammonia and hydrogen sulfide, ambient hydrogen sulfide data can be used to estimate ammonia concentrations.

Ammonia measurements will be performed using a continuous N0-N02 analyzer retrofitted with a high temperature converter designed for ammonia determination.

Measurement methods other than those specified above may be proposed and used by the project owner pre-approved by the CEC staff.

Verification: A sampling plan consistent with the above sampling requirements will be prepared by the project owner for approval by the CEC staff and LCAPCD, in consultation with the CARB, and CDHS, 120 days before monitoring begins. The project owner shall provide the LCAPCD, CARB, and CEC with quarterly reports summarizing the monitoring results.

2-5. The project owner and CEC staff, in consultation with CARB and CDHS, will agree upon significant levels of regulated and nonregulated pollutants applicable in the operational monitoring program. (Significant levels for regulated pollutants will be revised only if there is change in federal or state air quality standards.)

Verification: CEC staff shall prepare a report on the agreed upon levels for pollutants. This report will be filed with CEC CPM.

2-6. For the first two years of operation, the project owner shall analyze the incoming steam to the power plant for mercury, arsenic, silica, boron, benzene, and ammonia. These components shall be monitored every quarter.

Verification: The project owner shall submit the monitoring program plan to LCAPCD, CEC CPM, and CARB. LCAPCD shall review the plans for adequacy. The project owner shall submit test results to the LCAPCD and the CEC on a quarterly basis. After two years, the LCAPCD shall determine if annual testing for the above-mentioned steam constituents is sufficient. The project owner may join with the steam supplier in performing such tests.

2-7. In the second year of commercial operation, the project owner shall perform a mass balance measurement for mercury and arsenic.

Verification: The project owner will prepare a report on the mass balance measurements and calculations. The project owner shall send the report to the CDHS and CEC CPM within 30 days after completing the measurements. The program results will be evaluated by CEC CPM and CDHS to determine requirements, if any, for continuation of a mass balance measurement program.

2-8. New well steam analysis will be performed by the project owner when new steam supply wells are added to guarantee that combined power plant emission (the sum of base line, power plant contributions and new well contributions) do not change significantly (+20 percent). Methodology for this analysis will be the same as in 2-6. above.

Verification: The project owner shall send the new well steam analysis to the CEC within 30 days after the sampling.

2-9. The project owner shall conduct ambient air monitoring for arsenic, boron, mercury, benzene, and silica for one year after initial operation, as outlined in LCAPCD's Determination of Compliance, Condition 22. At the end of the indicated period, LCAPCD will review the monitoring program and determine the feasibility and necessity for continuing the program. If the project owner enters into a combined monitoring program with other developers that is acceptable to the LCAPCD and CEC, this requirement would be satisfied.

Verification: The project owner shall submit the monitoring plan to LCAPCO, CEC, and CARB for approval at least six months prior to start-up of the program. The project owner shall provide the LCAPCO, CARB, and CEC CPM with quarterly reports summarizing the monitoring results.

2-10 The project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is kept to a minimum. The Plan shall be consistent with either staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of Legionella" guidelines but in either case, the Plan must include sampling and testing for the presence of Legionella bacteria at least every six months. After two years of power plant operations, the project owner may ask the CEC CPM to re-evaluate and revise the Legionella bacteria testing requirement.

Verification: At least 60 days prior to the restart of cooling tower operations, the Cooling Water Management Plan shall be provided to the CEC CPM for review and approval.

SECTION 3: SOCIOECONOMIC/AESTHETICS

3-1 The project owner shall prepare a detailed visual impacts mitigation plan. The plan will discuss the specific steps to be undertaken in order to carry out the mitigation measures identified in the Draft EIR (page 142). This plan may be submitted as a part of the biological resource mitigation plan. If this is done, the joint plan must be identified as such and must specify how the measures are intended to mitigate the visual disturbances of the project. In addition to onsite impacts, the visual impacts mitigation plan shall include measures for the visual disturbances associated with the access roads and transmission lines.

Verification: The project owner shall submit the visual impacts mitigation plan to the CEC CPM by January 16, 1981 for review and approval. The CEC staff, in consultation with the Lake County Planning Department, shall review the plan.

3-2. The project owner shall not begin construction activities without CEC approval of the visual impacts mitigation plan. The project owner shall implement the mitigation measures identified in the approved plan. The project owner shall also implement any subsequent mitigation measures which may be approved by the CEC CPM in the event that measures included in the approved visual impacts mitigation plan are not sufficient to alleviate the visual disturbances.

Verification: The project owner shall submit an annual report to the CEC CPM demonstrating compliance with the applicable requirements of the visual impacts mitigation plan, including any subsequent amendments.

SECTION 4: CULTURAL RESOURCES

4-1. The project owner shall develop and implement a systematic archaeological recovery program for site CA-LAK-610, in consultation with CEC staff prior to any construction activity. The program shall include the development of an archaeological research design, site mapping, and a site transect for sampling. The program shall also provide for the analysis and curation of recovered artifacts.

Verification: The project owner shall provide the CEC CPM with a copy of the archaeological recovery program plan.

4-2. The project owner shall arrange for the presence of a qualified archaeologist to advise the project owner of the significance of any cultural resource which may be discovered during the stripping of vegetation and top soil from the plant site and related facilities.

The archaeologist shall conform to on-site safety procedures, as directed by the project owner.

Verification: The presence of the archaeologist shall be noted in the monthly Construction Progress Report provided the CEC CPM.

4-3. If previously unidentified cultural resource sites are discovered or unearthed during construction, work in the immediate area will be halted until the archaeologist evaluates the significance of the resource. If the resource is determined to be significant, the project owner shall promptly notify the CEC CPM of the resource discovery and work stoppage. Representatives of the project owner, the CEC CPM, and the Anthropology Lab at Sonoma State University shall meet with the project owner's archaeologist within one working day of the notification to discuss the possible mitigation measures. Pending resolution of this matter, construction activity in the resource area shall remain stopped.

Verification: The project owner shall notify the CEC CPM within one working day of the resource discovery and the work stoppage.

4-4. The project owner shall ensure that construction personnel are instructed to avoid all contact with flagged or fenced sites and to avoid disturbance of any other historic or archaeological material.

Verification: Prior to the start of construction activities, the project owner shall provide the CEC CPM with a statement verifying compliance.

4-5. Project owner shall ensure that the existing fence on the north side of site CA-LAK-609 is maintained.

Verification: A statement verifying compliance shall be provided in each Annual Compliance Report filed with the CEC CPM.

SECTION: 5 BIOLOGICAL RESOURCES

5-1.a. The project owner shall have a qualified botanist identify, map, and field mark populations of Napa lomatium (*Lomatium repostum*) and Brandegee's eriastrum (*Eriastrum brandegeeae*) in the vicinity of the power plant, transmission lines, and access roads prior to new ground disturbing activities related to power plant and ancillary facility operation and maintenance. Power plant employees, as well as other individuals conducting business on behalf of the project owner, where the work performed is in close proximity to any marked populations, shall be alerted to avoid those populations. No disturbance shall occur to these populations.

Verification: The project owner shall include the results of field marking activities as well as what was done to alert appropriate individuals involved with the project and incorporate this into the BRMMSR. (See 5-3.i. below)

5-1.b. The project owner shall prepare a revised detailed Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) which includes mitigation measures with their implementing methodologies, and submit it to the CEC CPM for review and approval in consultation with the California Department of Fish and Game (CDFG). The project owner shall implement the approved biological resources mitigation and monitoring measures specified in the approved BRMIMP.

Verification: The project owner shall submit the plan to the CEC CPM for review and approval 45 calendar days before the start of electrical power production.

5-1c Deleted (Commission Order # 06-1213-12)

5-1d Deleted (Commission Order # 06-1213-12)

5-1.e. The project owner shall develop procedural guidelines describing erosion control measures for earthmoving activities that could take place during operation and maintenance for the months of November, December, January, February, and March. The CEC CPM will review the plan for adequacy and provide a determination of acceptability within 21 calendar days of receipt. The plan must be approved prior to allowing earthmoving activities during these months. If earthmoving activities are planned from April to November, best management practices acceptable to the CEC CPM for this normally drier period shall be described in the procedural guidelines specified above and incorporated into the BRMIMP (See 5-1.b. above)

Verification: The project owner shall incorporate the procedural guidelines describing the erosion control measures into the BRMIMP after approval by the CEC CPM.

5-1.f. Annually, in April, the project owner shall inspect all previously disturbed areas for soil erosion impacts and shall take corrective action wherever necessary and report to the CEC CPM on this until permanent vegetation and/or successful soil stabilization, as determined by the CEC CPM, is established. At the time soil

stabilization has been judged successful by the project owner, the CEC CPM may be contacted to consider terminating or appropriately modifying aspects of this mitigation and monitoring requirement.

Verification: The project owner shall submit to the CEC CPM in the BRMMSR the results of the monitoring and an explanation that verifies compliance with this condition. (See 5-3.i. below)

5-1g Deleted (Commission Order # 06-1213-12)

5-1h Deleted (Commission Order # 06-1213-12)

5-2. One year prior to power plant deactivation, the project owner shall include in the decommissioning plan a biological resources element identifying mitigation measures.

Verification: The project owner shall submit the biological resources element of the decommissioning plan to the CEC CPM for a determination in consultation with CDFG of adequacy and acceptability.

5-3.a. If, based on quarterly visual inspections by a qualified individual(s) provided by the project owner, or information provided by other sources indicating that project related drift or emissions may be affecting vegetation in the vicinity of the project, the project owner shall resume annual soil/duff monitoring and leaf tissue analysis to determine boron levels. The monitoring protocol employed shall be approved by the CEC CPM.

Verification: The project owner shall include the results and a discussion of the year's required monitoring in the BRMMSR. (See 5-3.i. below)

5-3.b. The project owner shall continue surface water sampling at the following 5 sites: Kelsey Creek immediately upstream of the confluence with Alder Creek; Kelsey Creek 500 feet downstream of its confluence with High Valley Creek; Alder Creek immediately upstream of its confluence with Kelsey Creek; High Valley Creek immediately upstream of its confluence with Kelsey Creek; and Kelsey Creek near Kelseyville.

Sampling shall be conducted in April, July, and October of each year.

Protocol: Each surface water sample shall be analyzed for boron, sodium, sulfate, calcium-magnesium hardness, Ph, alkalinity, settlable solids, nonfilterable residue, turbidity, specific electrical conductivity, magnesium, calcium, copper, iron, lead, manganese, and zinc.

As determined necessary by the CEC CPM, based on water quality sampling results and consultation with the CDFG, the project owner shall, during April, July and October, collect and identify bottom-dwelling organisms from at least one square meter of stream-bed at each site and make special trace metal determinations for copper, iron, manganese, lead and zinc.

Verification: The project owner shall include the results and a discussion of the year's monitoring in the BRMMSR (See 5-3.i. below)

5-3.c. The project owner shall continue groundwater sampling at the following five sites: Nance Spring, Union Oil Spring, Coleman Well, Jadiker Spring and Francisco Well.

Sampling shall be conducted in April, July, and October of each year.

Protocol: Each groundwater sample shall be analyzed for boron, sodium, sulfate, calcium-magnesium hardness, pH, alkalinity, non-filterable residue, specific electrical conductivity, copper, iron, manganese, lead and zinc.

Verification: The project owner shall include the results and a discussion of the year's monitoring in the BRMMSR (See 5-3.i. below)

5-3.d. The project owner shall replace and maintain the nest boxes as originally prescribed, and maintain wildlife water basins in working condition. Wildlife use of these habitat improvement projects shall be monitored biennially using the same methodology that has been used in the past and thoroughly described in the BRMMSP. (See 5-3.i. below)

Verification: The project owner shall include the results and a discussion of the biennial monitoring in the BRMMSR (See 5-3.i. below)

5-3.e Deleted (Commission Order # 06-1213-12)

5-3. f Deleted (Commission Order # 06-1213-12)

5-3.g Deleted (Commission Order # 06-1213-12)

5-3.h. The project owner shall monitor erosion on an on-going basis during the rainy season. Inspections shall include all cut and fill slopes and other disturbed areas. Erosion problems shall be immediately repaired.

If temporary repairs are necessary during the rainy season, the project owner shall complete permanent repairs to those erosion problems by October 10th of each year.

Verification: The project owner shall submit to the CEC CPM by August 15th of each year an annual report which includes results of erosion monitoring when erosion problems are discovered. This report will describe the problems discussed and action taken to correct the problems.

During years when no erosion problems occur, and no corrective action is required, a brief discussion may be included and submitted in the December 15th annual report. (See 5-3.i. below)

5-3.i. A Biological Resources Mitigation and Monitoring Status Report (BRMMSR) shall be prepared to provide the results of the previous year's monitoring. This report

shall be submitted by December 15th each year. The report will collate and summarize all monitoring results including methodologies used to satisfy conditions 5-3.a. through 5-3.h. The project owner shall include in the BRMMSR appropriate maps of suitable scale with a detailed discussion of the current status of all mitigation and monitoring actions.

Verification: The project owner shall submit to the CEC CPM by December 15th, of each year, an annual BRMMSR which verifies compliance with the Biological Resource Conditions of Certification.

Upon reasonable notice the CEC CPM, Lake County staff, the Regional Water Quality Control Board staff, and the California Department of Fish and Game (CDFG) staff, shall be granted access for inspections.

5-3.j. If any specific mitigation measure or monitoring program is determined to be ineffective, or if the CEC CPM receives any submittal, complaints, or other information from the project owner, other agencies, or the public, that indicates one or more significant impacts are occurring on the leasehold subject to CEC jurisdiction, the project owner shall undertake actions to correct or reverse these impacts with advice and consent from the CEC CPM.

Verification: The project owner in consultation with CEC CPM will take action to correct the problem. If the problem cannot be resolved, the compliance monitoring dispute resolution process will be utilized.

5-4 Deleted (Commission Order # 06-1213-12)

REFERENCES

BRPC 2003. Bottle Rock Power Plant and Steamfield Annual Compliance Monitoring Report -2002. Prepared by EGS Inc for Bottle Rock Power Corporation. June 2003.

BRPC 2006. Bottle Rock Power Plant and Steam Field Annual Compliance Monitoring Report -2005. Prepared by EGS Inc for Bottle Rock Power Corporation. February 2006.

CNDDB. 2006. California Department of Fish and Game. Natural Diversity Data Base. 1416 9th St., 12th Floor, Sacramento, CA 95814. (916) 324-3812. Version July, 29, 2006.

DWR 1993. Vegetative Response to Geothermal Drift at the Bottle Rock Geothermal Power Plant 1984-1992. State of California, The Resources Agency, Department of Water Resources, Northern District. Technical Information Record. May 1993.

DWR 1994. Annual Compliance Monitoring Report for the Bottle Rock Geothermal Power Plant January 1, 1994 – December 31, 1994. State of California, The Resources Agency, Department of Water Resources, Northern District.

Karfiol, R.C., and L.E. McMillan, eds. 1983. Geysers-Calistoga KGRA-ARM Program 1981-1982 annual report. 2 vols.

McMillan, L.E. (Ed.) 1985. Geysers-Calistoga KGRA-ARM Program 1982-1983 annual report. 2 vols.

Suess, R.E. 2006 Record of Conversation, Ronald E. Suess, JD. President – Bottle Rock Power Corporation. 1275 4th Street, No. 105, Santa Rosa, CA 95404. 707-541-0976.

SECTION 6: WATER QUALITY/WATER RESOURCES

6-1. Project owner shall, during any period of suspension, utilize no new surface water as the source for any maintenance or other necessary activity without first notifying and obtaining the required authorization from the appropriate federal, state, county or local agencies.

Verification: 90 days prior to proposed use of surface water, the project owner shall file statements with the CEC CPM, the Water Resources Control Board, the Central Valley Regional Water Quality Control Board (CVRWQCB), and all other agencies having regulating jurisdiction over such water use, identifying the source(s), estimated amounts of use, and the method of obtaining such water. Additionally, the project owner shall provide the CEC CPM copies of all agency responses and permits necessary for surface water use requests.

6-2. Project owner shall maintain on file the Spill Contingency and Containment Plan (SCCP) originally required by the CVRWQCB.

Verification: Project owner shall notify the CEC CPM of the file location of the SCCP. Project owner shall comply with all applicable monitoring conditions described in CVRWQCB's Waste Discharge Requirement Order No. 76-202 and any amendments thereto.

6-3. Project owner shall adequately maintain the previously constructed impermeable spill collection-containment system to preclude discharges of toxic hazardous waste and materials from the power plant pad.

Verification: Project owner shall submit annually to the CVRWQCB and to the CEC CPM, via the Annual Compliance Report, a record of maintenance and corrective measures to the spill containment system.

6-4. Project owner shall, during any period of suspension, maintain and operate the domestic waste water septic tank, holding tank, pumps and control system as originally designed to discharge the limited amounts of effluent into the steam suppliers condensate reinjection system.

Verification: Project owner shall submit annually to the CVRWQCB and to the CEC CPM via the Annual Compliance Report, a record of maintenance and operation of the domestic waste water disposal system.

6-5. Project owner shall maintain quarterly records of the volume of water pumped from the on-site supply well.

Verification: Project owner shall include in the annual compliance report, supply records of water pumpage from the on-site water well.

6-6. To minimize the effects of contaminated storm water runoff discharges from the paved plant site areas to surface waters, project owner shall discharge all such waters to the condensate reinjection well(s), limited only by the capacity of the

existing sump pumps or the capacity of the reinjection well(s) to accept such discharges.

Note: During high rainfall periods when the runoff from the paved plant area is discharging to the High Valley Creek watershed, the impacts of such discharges will be minimized due to the diluting effects of runoff from the remainder of the watershed.

Verification: Project owner shall submit annually to the CEC CPM a record of maintenance and operation of the drainage sump pump discharge to the injection well(s).

SECTION 7: GEOTECHNICAL/SEISMIC HAZARDS

7-1. The project owner will assign to the project one or more qualified geotechnical engineers to monitor compliance with design intent in geotechnical matters, to provide consultation during design and construction of the project, to make professional geotechnical judgments concerning actual site conditions and to recommend field changes to the responsible civil engineer. The responsibilities of the geotechnical engineer will include:

- o Review of earthwork quality control tests (including compaction tests);
- o Reporting to the responsible civil engineer any geologic conditions which differ from those predicted on the basis of the engineering, geology, and soils engineering reports and any site earthwork which does not comply with the approved grading plans and change orders;
- o Preparation, in accordance with UBC 7015, of a Soils Grading report with his approval that the site is adequate for the intended use; and
- o Other duties (such as monitoring on-site or near-site ground-water levels) as appropriate.

Verification: The project owner shall notify the CEC CPM prior to beginning construction of the geotechnical engineer's name and registration number.

7-2. The project owner will assign to the project a qualified certified engineering geologist who will be present as needed during all phases of site excavation and grading to evaluate site geologic conditions and geologic safety. Responsibilities of the engineering geologist will include:

- o Collection during site excavation and trading of information relative to site geology and geologic safety, including inspection and monitoring of drill logs and drill cores;
- o Preparation of a detailed permanent geologic map or log of all final excavated surfaces (including walls and floors of the foundations of the turbine generator building, cooling tower, and other permanent structures);
- o Reporting to the responsible civil or geotechnical engineer any geologic conditions which differ from those predicted in the Engineering Geology Report; and
- o Preparation, in accordance with requirements of UBC Section 7015, of a Geologic Grading Report, with approval that the site is adequate for the intended use as affected by geologic conditions.

Verification: The project owner shall notify the CEC CPM prior to beginning construction of the certified engineering geologist's name and certification number

7-3. Should adverse site conditions warranting substantial changes in facility design or other mitigation measures be discovered during site excavation and grading,

the project owner's evaluation of these conditions shall be signed and stamped by a certified engineering geologist, and any plans setting forth the substantial changes (change orders) shall be signed and stamped by the responsible registered civil engineer, who shall also verify that the change orders conform with the terms and conditions of the certificate. The project owner shall not proceed with any earthwork in the affected area (except that necessary to protect persons, property, and the environment) based on proposed change orders until the change orders are accepted by CEC staff.

As soon as possible after the project owner confirms the presence of any adverse site conditions which may require substantial changes, the project owner's civil engineer or geotechnical engineer shall notify the CEC CPM and shall submit to the CEC CPM the new geotechnical information upon which the necessary change orders will be based.

As soon as possible after the project owner has developed change orders for such hazardous or adverse geologic conditions, the project owner will submit two copies of such change orders to the CEC CPM for determination of their acceptability.

Discovery of adverse site conditions which will warrant only minor changes in facility design or other mitigation measures need not be reported by the project owner to the CEC CPM. Such new geotechnical information will be reflected in the as-graded and as-built plans. The project owner will maintain the as-built and as-graded plan files for the life of the project. CEC staff will have access to these files.

"Substantial changes are those changes requiring an alteration in design concept and preparation of new design calculations.

Verification: CEC staff will review the proposed change orders and the geotechnical information on which they are based to determine that they conform with the terms and conditions of the certificate. Unless the project owner is notified otherwise within 30 days of receipt by CEC CPM of any change order, the project owner's proposed change orders will be deemed acceptable to CEC staff. CEC staff, or its agents, shall give the project owner reasonable notice (at least 24 hours) prior to unscheduled inspections of site earthwork, unless an imminent hazard requires more immediate inspection.

SECTION 8: SOILS

8-1. The project owner will adhere to the objectives of the above Water Quality Control Plan (Basin Plan) concerning turbidity and sedimentation related to construction projects.

Verification: Immediately following any new construction activity turbine roll, the project owner will file a statement with the Central Valley Regional Water Quality Control Board (CVRWQCB) stipulating the methods employed by the project owner to comply with the above requirement.

8-2 Deleted (Commission Order # 06-1213-12)

8-3 Deleted (Commission Order # 06-1213-12)

8-4. Prior to decommissioning of the power plant, the project owner shall prepare site restoration plans and submit them to the CEC CPM for review and approval at least six months prior to scheduled decommissioning.

Verification: At least six months prior to scheduled decommissioning, the project owner shall submit site restoration plans to the CEC CPM for review and approval.

SECTION 9: CIVIL ENGINEERING

9-1. At least 30 days prior to submittal of proposed Grading Plans, the project owner shall notify the CEC that the plans will be filed on or about a certain date. At least 60 days prior to intended start of site excavation and grading, the project owner will simultaneously submit proposed Grading Plans to the CEC CPM and the CBO for review. The CBO will, within 25 days of Grading Plan submittal, file concurrently with the project owner and the CEC CPM, a compliance letter containing the County's review comments.

Verification: The CEC CPM will, within 50 days of receipt by CEC CPM of the project owner's proposed Grading Plans, file a compliance letter to notify the project owner if the plans are acceptable to CEC staff, or, if not, of the CEC staff recommendations. Should the CEC CPM fail to file the compliance letter within 50 days, the project owner may deem its proposed Grading Plans acceptable to CEC staff.

9-2. Upon submittal by the project owner to the CEC CPM of adequate quality assurance/quality control procedures for inspectors of earthwork and grading, CEC staff may delegate to the project owner responsibility for determining that such work conforms with UBC 79 CBSC 2001 or other requirements of the certificate.

Should CEC staff delegate earthwork inspections to the project owner, the project owner will certify that any designated inspectors have the authority to: (a) stop excavation or grading in areas where adverse site conditions are discovered or where earthwork does not conform with the approved grading plans or change orders; and (b) require that changes or remedial work be performed to reestablish conformance or to achieve the design intent.

Verification: The CEC CPM will notify the project owner when the quality assurance/quality control procedures have been determined to be adequate. The CEC staff or its agents, may, upon reasonable notice to the project owner, inspect the site at any time to verify conformance of site earthwork with approved plans and change orders and/or to evaluate newly discovered adverse site conditions.

9-3. The project owner shall keep the CEC CPM informed regarding the status of construction hrough monthly construction status reports.

Verification: The project owner shall submit monthly construction reports to the CEC CPM until the start of commercial operation.

9-4. The project owner will notify the CEC CPM when site earthwork is ready for final inspection and, upon completion of the rough grading work and at the final completion of the work, will file with the CEC CPM, two copies of the As-Graded Grading Plan, Soils Engineering Report, and Geologic Grading Report per UBC Section 7015 CBSC 2001. The project owner's responsible civil engineer shall certify on the As-Graded Grading Plan that site earthwork was done in accordance with the final approved grading plan (including change orders) and satisfies the design intent.

Upon completion of site earthwork, the project owner will prepare and maintain as a public record for the life of the project the As-Graded Grading Plans. CEC staff and its agents shall have access to these filed documents. The project owner will not begin construction of any structure or foundation until notified by the CEC that site earthwork is acceptable to CEC staff.

Verification: The CEC staff may review the As-Graded Grading Plans and accompanying Soils Grading Report and Geologic Grading Report and may conduct a final inspection of site earthwork to verify that site earthwork complies with the accepted final grading plan. If the CEC CPM does not notify the CBO otherwise within 10 days of submittal of the final As-Graded Grading Plan and supplementary reports, the CBO may deem these documents and site earthwork acceptable to CEC staff.

9-5. The project owner shall prepare and submit a reclamation plan to the CEC staff to restore the site to its original condition as nearly as practicable.

Verification: At least six months prior to decommissioning of the facility, the project owner shall submit its reclamation plan to the CEC CPM for review and approval.

SECTION 10: STRUCTURAL ENGINEERING

10-1. The project owner shall design and construct the Bottle Rock Geothermal Power Plant and its related facilities to be in conformance with applicable laws, ordinances, standards, and practices and with the information, criteria. And methods set forth in the following documents:

- o Bottle Rock AFC, Section IV.D. (entitled, "Seismic Performance Criteria," revised May 22, 1980), Appendix A (Part III, entitled, "Structural Design and Construction Policy," revised May 22, 1980, and Appendix B (entitled, "A Report on Geysers Power Plants," by Dr. Haresh C. Shah, dated May 1980).

- The project owner will use the Applied Technology Council "Tentative Provisions Applicant's responses (dated November 5, 1979) to Staff Interrogatories.

- The project owner will use the Applied Technology Council "Tentative Provisions Record of telephone conversation, Gaylon Lee (CEC) and Dale Martfeld (DOER), July 21, 1980.

- Applicable Findings and Conclusions regarding Structural Engineering of the Joint Prehearing Conference Statement of the Commission Staff and the Applicant dated August 29, 1980.

In case of discrepancies between various criteria, laws, ordinances, and standards, the most conservative requirement will be used. For the turbine generator building, turbine generator pedestal, cooling tower, and Stretford absorber columns, the project owner will clearly demonstrate through design calculations and drawings that the proposed final plans and specifications are based on and conform with design criteria and methods required by the certificate or that any nonconformance is justified.

Upon submittal by the project owner to the CEC CPM of adequate quality assurance/quality control procedures for review and checking of final design plans and specifications for the proposed structure and equipment, CEC staff may delegate to the project owner responsibility for determining that the proposed final plans and specifications comply with CBSC 2001 or other requirements of the certificate.

The Lake County CBO shall review and comment on compliance of proposed plans and specifications with requirements (primarily CBSC 2001) of County Ordinance 2473. The CEC staff or its agent shall review the project owner's proposed design criteria and methods, preliminary and final plans and specifications, and upon request, may review proposed procurement specifications to determine that the proposed design or design approach conforms with terms and conditions of the certificate (other than County requirement) or, if not, that any nonconformance is justified.

If the project owner's proposed design criteria or methods, final plans and specifications, and procurement specifications are not acceptable to the CEC

staff, the design documents shall be modified by the project owner until substantial compliance is attained.

The project owner shall not begin construction of any structure or foundation for which final plans and specifications have not been accepted by CEC CPM. At least 30 days prior to submittal of any design documents, the project owner will notify the CBO and CPM of the intended submittal date.

The project owner will furnish two sets of preliminary plans and specifications to both the CEC CPM and to the Lake County Chief Building Official (CBO) for review and comment concurrently with the Applicant's staff review process.

The project owner will simultaneously submit two complete sets of final structural designs, plans, and specifications for each structure and structure foundation to the CBO at least 75 days prior to the intended date of bid opening.

Verification: The project owner's design engineer(s) shall sign and/or stamp all proposed final plans and specifications, and shall certify in writing that to his personal knowledge:

- The proposed final plans and specifications are consistent with the applicable referenced criteria and with any other applicable terms and conditions of the certificates and were developed using design criteria and methods accepted by CEC staff, and
- The utility's procurement specifications for components purchased from a vendor, comply with the referenced criteria and with any other applicable terms and conditions of the certificate.

The final plans and specifications will reflect the inclusion of approved criteria, assumptions, and methods used to develop the design, and for the turbine-generator building, cooling tower, and Stretford absorber column, shall include design calculations.

The CBO will within 50 days of submittal of both preliminary and final plans and specifications by the project owner, file concurrently with the project owner and the CEC CPM, a compliance letter containing the county's review comments.

The CPM will, within 70 days of receipt by CEC of the project owner's proposed final plans and specifications, file a compliance letter to notify the project owner if the proposed plans and specifications are acceptable to CEC staff or, if not, what changes are recommended by CEC staff. Should the CPM fail to file a compliance letter within 70 days, the project owner may deem its proposed final plans and specifications acceptable to CEC.

Final plans are defined as the plans upon which construction will be based (e.g., used for bid purposes).

10-2. The project owner shall establish and maintain as public records files following documents:

- A summary of concrete strength tests;
- Copies of concrete pour sign-off sheets;
- Bolt torque inspection reports;
- Weld (yield) inspection sheets; and
- As-built drawings for the construction of civil and architectural work (changes approved by the CEC CPM shall be identified on the As-built drawings). CEC staff and its agents shall have access to these filed documents.

Verification: The project owner shall notify the CEC CPM when the documents are available and their location.

10-3. The project owner shall keep CEC CPM informed regarding the status of construction.

Verification: The project owner shall submit monthly construction progress reports to the CEC CPM until the start of commercial operation.

10-4. The project owner will notify the CEC CPM upon completion of each major structure or component.

Verification: Upon notification by the project owner of completed construction for each major structure or component, CEC staff or its agent may perform final site inspection to determine that the finished work is accurately represented by the as-built plans and specifications and conforms with the approved final plans, specifications, and change orders.

The project owner's responsible civil engineer shall certify in writing to the CEC that the finished work for each major structure or component is accurately depicted in the as-built plans and that it conforms with accepted final plans, specifications, and change orders.

10-5. The project owner will file with the CEC CPM or its designated agent substantial design changes to the final plans as required by CBSC 2001. "Substantial changes" include all changes requiring an alteration in design concept and preparation of new design plans consistent with the AFC conditions of certification. Minor changes shall be reflected in the "as-built" drawings submitted after construction.

Verification: The project owner shall submit two (2) sets of the revised drawings, specifications, and calculations to the CEC CPM or its designated agent for review at least 30 days prior to the intended start of construction on a proposed change order or corrective measure, and will notify the CEC CPM or its designated agent at least 15 days in advance of the intended filing. Within 30 days of receipt by CEC CPM, the project owner's proposed change order or corrected measure will be deemed approved unless the CEC CPM notifies the project owner otherwise.

10-6. Inspection shall be performed in accordance with Chapters 3 and 70 of the Uniform Building Code (1979 edition). The CEC CPM or its designated agent may delegate responsibility for special and continuous inspections to the project

owner as provided in the CBSC 2001. The CEC CPM or its designated agent, may upon reasonable notice, inspect the construction at any time.

The project owner will provide, through its Construction Office, a staff of field engineers and inspectors to monitor conformance with the accepted final plans, specifications, and change orders. These field engineers and inspectors will be present on site at all times to monitor construction activities.

Upon submittal by the project owner to the CEC CPM of adequate quality assurance/quality control procedures for inspection of construction work, CEC staff may delegate to the project owner responsibility for determining that construction work conforms with CBSC 2001 or other requirements of the certificate.

Should the CEC delegate responsibility for inspections to the project owner, the project owner shall certify that the designated inspectors have the authority to:

- Stop construction work which does not conform with approved plans, specifications, and change orders;
- Require changes or remedial work to reestablish conformance; and
- Report substantial nonconformance to the CEC or its designated agent as soon as discovered.

Should the project owner propose substantial corrective measures for any nonconforming construction work, the project owner's responsible engineer shall sign and stamp the proposed corrective plan, and specifications shall certify that they conform with the applicable criteria. Any nonconformance shall be justified by the project owner.

Any proposed substantial corrective measures shall be reviewed by the CEC or its designated agent to determine that they conform with the applicable criteria or with the design intent.

Upon request by the project owner's responsible engineer, selected fabricated materials shall be inspected for compliance with contract specification, either in the supplier's shops or on site, by the utility's Engineering Quality Control Inspection Group. The test requirements shall be described in the project owner's contract specification or referenced standards.

Verification: The project owner's responsible engineer shall certify in writing to the CEC that the finished work for each major structure or component is accurately depicted in the "as-built" plans and that it conforms with accepted final plans, specifications, and change orders.

If substantial nonconforming work is discovered by any of the project owner's quality control engineers or inspectors, designated inspector, or by CEC staff or its agent; the discoverer will immediately notify the CEC CPM of the nonconformance.

SECTION 11: SOLID WASTE MANAGEMENT

11-1. The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste during construction and operations

Verification: The project owner shall keep a copy of the identification number letter on file at the project site.

11-2. The only Stretford process waste is sulfur cake with some entrained process chemicals. The project owner shall ensure that the sulfur cake is properly stored in an appropriate container and removed periodically to be sold or disposed at a site approved for such wastes.

Verification: The project owner shall submit final design plans and "As-Built" drawings to the Lake County CB0 incorporating these design features. In addition, the project owner shall each month submit completed hazardous waste manifests to the Department of Toxic Substances Control under the California Environmental Protection Agency in compliance with Section 66262.20 of Title 22, CCR

11-3. Deleted (Commission Order # 06-1213-12)

11-4. If a secondary treatment system is used to abate H2S emissions, the plant may produce additional hazardous wastes. To ensure that these wastes are properly disposed, the project owner shall submit its secondary abatement waste disposal plans, if secondary abatement is required, to the CEC for review.

Verification: The plans shall be submitted as soon as the project owner determines secondary abatement is required, but no later than 120 days prior to operation of the secondary abatement system.

11-5. If hazardous wastes, including Stretford sulfur effluent, are stored on site for more than 90 days, the project owner shall obtain a determination from the Department of Toxic Substances Control that the requirements of a Hazardous Waste Facility Permit have been satisfied.

Verification: The project owner shall notify the CEC CPM if it files an in-lieu application with the Department of Toxic Substances Control for the operation of a Hazardous Waste Facility.

11-6. The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste during construction and operations

Verification: The project shall keep its copy of the identification number on file at the project site and notify the CPM via the relevant Monthly Compliance Report of its receipt

11-7 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the

project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CEC CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

11-8 The project owner shall ensure that the cooling tower sludge is tested pursuant to Title 22, California Code of Regulations, section 66262.10 and report the findings to the CPM.

Verification: The project shall include the results of sludge testing in a report provided to the CEC CPM. If four consecutive tests show that the sludge is nonhazardous, the project owner may apply to the CPM to discontinue testing.

SECTION 12: SAFETY

12-1. The project owner shall certify that Stretford system pressure vessels and liquid petroleum gas tanks have been designed, constructed and installed in accordance with Title 8, California Code of Regulations (CCR) and the Tri-Services Manual and anchored to resist a force of an ELF of 0.5w.

Verification: The project owner will prepare and submit to the CEC CPM a certificate of compliance stamped by a registered civil, mechanical or industrial engineer prior to commercial operation.

12-2. The project owner shall certify that Stretford system tanks have been designed, constructed and installed in accordance with American Petroleum Institute (API) Standard 650 and the Tri-Services Manual and anchored to resist a force of an ELF of 0.5w.

Verification: The project owner will prepare and submit to the CEC CPM a certificate of compliance stamped by a registered civil, mechanical or industrial engineer prior to commercial operation.

12-3. The project owner shall certify that lube oil storage tanks are designed and constructed according to Article 145, Title 8,CCR and anchored to resist a force of an ELF of 0.5w.

Verification: The project owner will prepare and submit a certificate stamped by a registered civil, mechanical or industrial engineer prior to commercial operation.

12-4. The project owner shall certify that all storage bins and cylinder anchorages for flammable and hazardous substances are designed and constructed to resist a force of an ELF of 0.5W.

Verification: The project owner will prepare and submit a certificate of compliance stamped by a registered civil, mechanical, or industrial engineer prior to commercial operation.

12-5. The project owner shall certify that hydrogen and oxygen systems are installed according to Articles 138 and 139, Title 8, CCR.

Verification: The project owner will prepare and submit a certificate of compliance stamped by a registered civil, mechanical or industrial engineer prior to commercial operation.

12-6. The project owner shall certify that ammonia and C02 gas are stored according to Articles 107 and 76, Title 8, CCR.

Verification: The project owner will prepare and submit a certificate of compliance stamped by a registered civil, mechanical or industrial engineer prior to commercial operation.

12-7. The project owner shall certify that design and construction are in reasonable conformance with the applicable fire safety codes and standards listed above.

Verification: The project owner shall submit to the CEC CPM such certification from a registered fire safety engineer or the project owner's fire insurance company in a compliance report prior to commercial operation.

12-8. Project owner shall continue to abide by an approved accident prevention program in accordance with the provisions of Section 3203 et seq. of Title 8, CCR. (These sections include chemical handling & storage and provisions for hazardous materials and airborne contaminant exposure based on Section 5155, Title 8, CCR.)

Verification: Project owner shall notify the CEC CPM of any changes to the approved accident prevention program and provide verification of California Occupational Safety and Health Administration's (Cal/OSHA) approval of said changes.

12-9. Project owner shall request California Department of Occupational Safety and Health Administration (Cal/DOSHA) to conduct on-site safety inspections during any the suspension of operations immediately following any complaint.

Verification: During any suspension, the project owner shall notify the CEC CPM in writing in the event of a violation that could involve DOSHA action, and the necessary corrective action.

12-10. During any suspension period, the project owner shall remove from the plant site, all chemicals, solvents and lubricants, except those essential to maintain the plant, and those only in reasonably required quantities.

Verification: Within 90 days of suspending operations the project owner shall submit the following to the CEC CPM:

(1) a list of all hazardous chemicals and the quantities that are to remain on site during any suspension period, and

(2) the signature of the responsible Plant Manager certifying compliance with this condition.

Within 90 days of receipt of the list and the Plant Manager's verification, the CEC CPM will conduct a site visit.

SECTION 13: TRANSMISSION LINE SAFETY AND NUISANCE

13-1. The project owner shall file a "Notice of Construction or Alteration" form with the Federal Aviation Administration if it is anticipated that construction would result in a transmission line tower or any appurtenance being more than 200 feet in height above the ground level per 14 CFR, Part 77.

Verification: The project owner shall forward a copy of any such filing to the CEC CPM.

13-2. The project owner shall construct, operate, and maintain the transmission lines in accordance with Title 14, California Administrative Code, Sections 1254 -1256, and Public Resources Code, Sections 4292 - 4296.

Verification: Within 30 days after completion of construction, the project owner shall submit a statement from a responsible engineer to the California Department of Forestry and the CEC CPM indicating that the transmission line has been constructed in accordance with applicable requirements. The project owner shall also inspect the transmission line annually to ensure that the line maintains required clearances especially during the fire season. In the event that noncompliance is determined by the CDF, the CDF shall require the project owner to take measures necessary to correct the noncompliance. If the project owner's corrective measures are unsatisfactory in the opinion of the CDF, the CDF shall inform the CEC CPM and shall recommend a course of action.

13-3. The project owner shall ensure that, regardless of location or ownership, all ungrounded metallic fences longer than 150 feet within the right-of-way shall be grounded following the PG&E procedures outlined in the PG&E Drawing 020607, sheets 1 through 5 of 5.

Verification: Within 30 days after completion of transmission line construction, the project owner shall file a statement verifying compliance.

13-4. In the event of complaints regarding induced currents from vehicles, portable objects, large metallic roofs, fences, gutters, or other objects, the project owner shall investigate and take all reasonable measures at its own expense to correct the problem for valid complaints, provided that (a) the object is located outside the right-of-way, or (b) the object is within the right-of-way and existed prior to right-of-way acquisition.

For objects constructed, installed, or otherwise placed within the right-of-way after right-of-way acquisition, the project owner shall notify the owner of the object that it should be grounded. In this case, grounding is the responsibility of the property owner. The project owner shall advise the property owner of this responsibility in writing prior to signing the right-of-way agreement.

Verification: The project owner shall maintain a record of activities related to this paragraph. These records shall be made available to authorized staff upon request.

13-5. The project owner shall ensure that the design and construction of the transmission line satisfies or exceeds both the requirements of CPUC General Order 95 and the terms and conditions of CEC certification. The project owner shall receive CEC approval for a waiver of any General Order 95 requirements. The project owner shall also receive CEC approval for any of the following significant changes in transmission line design:

- Any change in conductor size from 1,113 kcmil.
- Any tower configuration other than as proposed in the AFC.
- Change to the number of circuits.
- Change to the voltage level of line.
- Changes in normal or emergency conductor capacity greater than 15 percent.
- Change in termination point.
- Change in route length.
- Changes to the route right-or-way width.

Verification: Within 30 days following completion of the transmission line, the project owner shall submit to the CEC CPM a statement signed by a California registered electrical engineer which verifies compliance with the requirements of CPUC General Order 95 and with the terms and conditions of CEC certification.

13-6. On-site worker safety inspections may be conducted by the California Division of Occupational Safety and Health (CAL/DOSH) during construction and operation of the transmission line or when an employee complaint has been received. The project owner shall notify the CEC CPM in writing in the event of a violation and shall indicate if such violation may delay the transmission line construction schedule.

Verification: The project owner shall maintain records of CAL/Dosh inspections and shall make them available to authorized staff upon request. CAL/DOSH will notify the CEC CPM of alleged violation(s) and recommended course of action in writing within seven days of such determination.

13-7. The project owner shall make every reasonable effort to locate and correct at the project owner's expense, on a case-by-case basis, all causes of radio interference and television interference attributed to the transmission line facilities, including, if necessary, the modification of receivers and the furnishing and installation of antennas. In addition, the project owner shall take reasonable care to prevent the conductors from being scratched or abraded.

Verification: The project owner shall maintain records of complaints and corrective action and shall make these records available to authorized staff.

13-8 The project owner shall provide the following Notice to the Cal-ISO prior to synchronizing the facility with the California transmission system:

1. At least on week prior to synchronization the facility with the grid for testing, provide the Cal-ISO a letter stating the proposed date of synchronization; and

2. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the ISO Outage Coordination Department.

Verification: The project owner shall provide copies of the Cal-ISO letter to the CEC CPM when it is sent to the Cal-ISO one week prior to initial synchronization with the grid. The project owner shall contact the Cal-ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at (916) 351-2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the Cal-ISO shall be provided electronically to the CEC CPM one day before synchronizing the facility with the California transmission system for the first time.

SECTION 14: TRANSMISSION LINE ENGINEERING

(Compliance requirements are included in **Section 13: Transmission Line Safety and Nuisance**)

SECTION 15: TRANSMISSION LINE BIOLOGICAL RESOURCES

(Compliance requirements are included in **Section 5: Biological Resources**)

SECTION 16: NOISE

16-1. Project owner shall comply with Lake County's noise ordinance, which is 55 dBA Ld and 45 dBA Ln at any point beyond the property line of the source. In the event the Lake County or the project owner receives public complaints of any noise, project owner and Lake County (if requested by the complainant) agree to promptly conduct an investigation to determine the extent of the problem. Project owner shall take reasonable measures to resolve the complaints.

Protocol: Within 10 days of a request by Lake County or the CEC CPM, project owner shall conduct noise surveys at the sensitive receptors registering complaints and at the facility property line nearest the complaining receptors. Surveys shall be conducted, when possible, under circumstances similar to those when the complaints were perceived. The survey should be reported in terms of L_{eq} and L_z at levels x=10, 50, and 90.

Verification: Project owner shall promptly forward to Lake County the survey results, the mitigation measures applied to resolve the problem and the results of these efforts. Lake County shall advise the CEC CPM of any continuing noncompliance conditions.

16-2. Within 90 days after the plant reaches its rated power generation capacity and construction is complete, the project owner shall conduct a noise survey at 500 feet from the generating station or at a point acceptable to DWR, CEC CPM, and Lake County. The survey will cover a 24 hour period with results reported in terms of Lx (x = 10, 50, and 90), LeqZ and Ldn levels.

The project owner shall prepare a report of the survey that will be used to determine the plant's conformance with county standards. In the event that county standards are being exceeded, the report shall also contain a mitigation plan and a schedule to correct the noncompliance. No additional noise surveys of off-site operational noise are required unless the public registers complaints or the noise from the project is suspected of increasing due to a change in the operation of the facility.

Verification: Within 30 days of the noise survey the project owner shall submit its report to Lake County.

16-3. Within 90 days after the start of commercial operation, the project owner shall prepare a noise survey report for the noise hazardous areas in the facility. The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, CCR, Article 105. The survey results will be used to determine the magnitude of employee noise exposure. If employee complaints of excessive noise arise during the life of the project, CAL/DOSH, Department of Industrial Relations shall make a compliance determination.

Verification: The project owner shall notify CAL/DOSH and the CEC CPM of the availability of the report.

LIST OF ACRONYMS

AECS	Air Emissions Control System
AECS	Atmospheric Emissions Control System
AFC	Application for Certification
APCD	Air Pollution Control District
APCO	Air Pollution Control Officer
API	American Petroleum Institute
ARB	Air Resources Board
ATCs	Authorities to Construct
BACT	Best Available Control Technology
BRMIMP	Biological Resources Mitigation Implementation and Monitoring Plan
BRMMSR	Biological Resources Mitigation and Monitoring Status Report
BRPP	Bottle Rock Power Plant
CAL/DOSH	California Division of Occupational Safety and Health
CAL/OSHA	California Occupational Health and Safety Administration
Cal-ISO	California Independent System Operator
CARB	California Air Resources Board (aka ARB)
CBO	Chief Building Official
CBSC	California Building Standards Code
CCR	California Code of Regulations
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CDHS/RHS	California Department of Health Services Radiologic Health Section
CEC	California Energy Commission
Ci/sec	curie per second
C02	carbon dioxide
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CVRWQCB	Central Valley Regional Water Quality Control Board
dBA	Decibel(dB) (dBA) A-Weighted Sound Level
DCS	Distributed Control System
DOC	Determination of Compliance
DWR	California Department of Water Resources
ELF	equivalent lateral force
EPA	Environmental Protection Agency
ESS	emergency steam stacking system
Fe•HEDTA	iron hydroxyethyl ethylenediamine triacetic acid
GAMP	Geysers' Air Monitoring Program
H2O2	hydrogen peroxide

H2S	hydrogen sulfide
Kcmil	thousands of circular mils
lbs/hr	pounds per hour
LCAPCO	Lake County Air Pollution Control Officer
LCAQMD	Lake County Air Quality Management District
L_d	A-weighted noise level during the day
L_{eq}	equivalent noise level
NaOH	sodium hydroxide
PG&E	Pacific Gas & Electric
pH	potential Hydrogen
ppm	parts per million
ppmv	parts per million by volume
ppmw	parts per million by weight
PTOs	Permits to Operate
UBC	Uniform Building Code