

Memorandum

Date : September 22, 2003

Telephone: (916) 654-4178

To: Walnut Energy Center AFC Committee File: Walnut Energy Center (2-AFC-4)

From: California Energy Commission - Caryn Holmes, Senior Staff Counsel
1516 Ninth Street
Sacramento, CA 95814-5512
Bob Eller, Siting Project Manager

Subject : FSA Addendum

Attached please find the Addendum to the Final Staff Assessment (FSA) for the Walnut Energy Center AFC proceeding. This Addendum is being filed in accordance with Notice of Second Evidentiary Hearings, dated September 10, 2003 (Notice).

The Addendum contains testimony that updates the FSA in several areas. First, staff has provided additional information and clarification requested by the Committee at the August 25, 2003 Hearing. In addition, the Addendum reflects changes to the FSA resulting from the continued discussions between staff and the applicant on several topics. As a result of those discussions, staff has proposed modifications to its testimony and to conditions of certification in several technical areas. These modifications are shown in underline/strikeout format in the Addendum. The Addendum also includes a brief rationale for each modification proposed.

Finally, staff has taken the opportunity to review the estimates of time required for direct examination, cross-examination, and legal argument that we provided at the August 25, 2003 hearing. In light of the progress in resolving a number of issues, staff believes that the following summary more accurately reflects the time needed to adjudicate issues at the September 29, 2003 hearing.

Soil and Water Resources: Staff believes that **SOILS&WATER-1 - SOILS&WATER-3** are resolved. **SOILS&WATER-5** is unresolved, and the times identified on Attachment C to the September 10 Notice will be required to address issues associated with that condition.

General Conditions: **COM-8** is unresolved, and the times identified on Attachment C to the September 10 Notice will be required to address issues associated with that condition. However, staff's witness for **COM-8**, Dr. Alvin Greenberg is unavailable on the 29th. Staff therefore respectfully requests a continuation of the hearing for **COM-8** only, to the next available date, which staff understands is October 9, 2003. Dr. Greenberg is available to testify on that day.

Land Use: **LAND-6** is unresolved, but only the Applicant intends to present a witness. As staff is currently unaware of any unresolved questions of fact, we are likely to object to testimony by the applicant on this issue. However, the time identified on Attachment C to the September 10 Notice for legal argument will be required. In addition, the Department

of Conservation has informally indicated that it may appear to offer comment at the September 29, 2003 hearing. Finally, pursuant to Title 20, California Code of Regulations, § 1213, staff will formally request at the hearing that the Committee take official notice of the following documents:

- 1) Master Environmental Assessment (Part 1) and Draft Environmental Impact Report (Part II) prepared for the City of Turlock, dated September 1992 (Clearinghouse No.92022042);
- 2) Final Environmental Impact Report prepared for the City of Turlock, dated December 1992 (Clearinghouse No. 92022042);
- 3) City of Turlock Resolution 93-042, dated March 15, 1993 (Making Written Findings for Significant Environmental Effect);
- 4) City of Turlock Resolution 2002-099 (Adopting a Negative Declaration of Environmental Effect for the 2002 Review of the Turlock General Plan), dated June 25, 2002
- 5) City of Turlock Resolution 2002-100 (Certifying the EIR Prepared for the 1992 General Plan as Adequate, dated June 25, 2002);
- 6) Mitigated Negative Declaration certifying the EIR prepared for the 1992 General Plan as adequate, dated July 15, 2002; and
- 7) Mitigated Negative Declaration for the 2002 General Plan Review, dated July 15, 2002;
- 7) City of Turlock Resolution 2002-099 (Adopting a Negative Declaration of Environmental Effect for the 2002 Review of the Turlock General Plan).

Air Quality: Staff believes that the issues associated with construction conditions are resolved, and staff anticipates that a lesser period of time than that identified in Attachment C to the Notice will be required to address **AQ-C6** and **AQ-C8**, and possibly **AQ-47**.

Walnut Energy Center (02-AFC-4) Final Staff Assessment - Addendum

AIR QUALITY

Introduction

Based on applicant comments on the FSA and discussions at the FSA workshop, staff has developed changes in the language and requirements of staff's proposed construction conditions (**AQ-C1** through **AQ-C4**) and the verifications written for certain District operating conditions. In the FSA, staff addressed many of the applicant's proposed changes in conditions **AQ-C1**, **AQ-C3**, **AQ-C4** and **AQ-C5**, as well as deletion of the original **AQ-C6** as requested by the applicant.

The applicant still desires to delete in their entirety staff conditions **AQ-C6** and **AQ-C8**, and no compromise position appears to be available; therefore, staff will present its case for these conditions in the evidentiary hearing and not address them in this Addendum.

Description of Proposed Revisions

Construction Conditions

The applicant proposed two alternatives for the construction conditions proposed by staff. The first alternative included the wholesale replacement of staff's fugitive dust control requirements **AQ-C3** (a) through (n) with District Regulation VIII, as well as the deletion of **AQ-C4**. The second alternative called for specific revisions to conditions **AQ-1** through **AQ-C4**. Staff believes that a compromise to this second alternative is acceptable. Staff has agreed to many of the specific revisions proposed by the applicant and has provided compromise positions in other cases to attempt to meet the intent of the applicant's requested revision and address staff concerns.

The revisions proposed to **AQ-C1** are conforming changes to the condition that should have been made in the FSA based on changes made to condition **AQ-C3** in the FSA.

No changes are proposed to **AQ-C2**.

The revisions to **AQ-C3** are primarily proposed to address applicant requests; however, the final form of the condition reflects a compromise that also addresses staff concerns. The rationale for the revisions to **AQ-C3** is as follows:

- (a) – Language was added to clarify the mitigation goal and implementation of the condition. The implementation of the wet dust suppression controls should be consistent with the goal of meeting a fugitive dust control efficiency at or near 90 percent, as was assumed by the applicant in their emissions modeling analysis.

- (b) – The maximum traffic speed was adjusted to 15 MPH to be consistent with the traffic speed assumed in emission modeling analysis.
- (d) – The term “construction equipment” was added to the condition per the applicant’s request to define which vehicles are subject to this part of the condition.
- (i) – The term “when construction activity occurs” was added per the applicant’s request to the condition to note that cleaning of onsite paved roads does not need to occur when there is no traffic (i.e. no construction activities) on those roads.
- (j) – The requirements for the street sweeping of public roadways were clarified to indicate that on days when no construction activities occur street sweeping was only required if dirt or runoff from the construction site is visible on the public roadways.
- (l) – The term “on public roadways” has been added as requested to clarify the requirements of the condition.
- (o) 3) Two major changes were made:
 1. The condition requirements were revised to reflect the Tier 1 certified equipment assumptions used by the applicant in their modeling analysis, and to only require additional diesel particulate controls, if practical, where Tier 1 equipment could not be found.
 2. Language defining the terms “not available” and “not practical” were added per the applicant’s request. The applicant asked for the exact language from the East Altamont Energy Center Condition of Certification **AQ-C3**; however, staff made some minor modifications so that these definitions will conform with the condition requirement language.
- Last paragraph – the last paragraph of the condition was revised to address both applicant and staff concerns regarding proper procedures if conflicts between the District Regulation VIII control measures and staff’s fugitive dust control conditions (a) through (n) occur.

The revision proposed to **AQ-C4** is the correction of an error. The word “dust” was inadvertently left out in one place of the version of this condition provided in the FSA and has been added to correct this error.

District Condition Verifications

The applicant has requested that the verification for certain conditions requiring various plans and other information to be submitted to the CPM and District remove the Energy Commission approval requirement. Staff has reviewed this request and finds that for all of these conditions, excepting the source test conditions, this request is acceptable and the verifications have been revised consistent with, but perhaps not identical to, East Altamont Energy Center (EAEC) decision verifications for similar conditions.

We note that the source test plan approval has been consistently integrated into the Energy Commission licensing conditions; e.g., EAEC (AQ-16), Pico Power Plant (AQ-12), and SMUD Cosumnes (AQ-35). However, for this case, in light of the specificity of the District source test conditions, and in order to work towards compromise, staff is willing to surrender the approval authority for all parts of the source test plan excepting

the PM10 source test methods (**AQ-47**). Staff assumed in its impacts and mitigation analysis that the project's turbine/HRSG PM10 emissions include both the non-condensable and condensable fractions. Staff has provided an alternative proposal for **AQ-47** that modifies the condition to specify that front half and back half particulate will be measured and that requires Energy Commission approval of any requested modifications in the source test methods. Additionally, the Energy Commission is responsible for maintaining power plant emission data and uses this data to perform other studies as requested by the Governor. The various air quality control districts in California allow significant variation in the PM10 source test methods; therefore, staff needs to ensure that the methods will specify both front-half (non-condensable particulate) and back-half (condensable particulate) particulate, and verify that the source test proposal/protocol does not seek any modifications to the specified source test methods that may cause an inconsistent testing approach between power plants.

Summary

It is staff's understanding that the applicant has agreed to all of the following revised Conditions of Certification, and is asking for additional changes to **AQ-47** and the deletion of **AQ-C6** and **AQ-C8**.

Finally, we note that shortly before this addendum testimony was filed, the applicant identified a concern about the staff's revised verification language that requires evidence of the District's approval of the source test protocol. However, staff's discussions with the District indicate that they always provide a final source test protocol approval notice and that source testing is not allowed before receipt of that notice. The District indicated that a copy of the notice may only be sent to the source test contractor who provides the protocol; however, it would be a simple matter for the applicant to require the source test contractor to provide the CPM a copy of the source test protocol approval prior to initiating the source tests. Therefore, staff does not believe that this is an issue, and recommends retaining the language as written.

Revised Conditions of Certification

Staff Conditions

AQ-C1 The project owner shall fund all expenses for an on-site air quality construction mitigation manager (AQCMM) who shall be responsible for maintaining compliance with conditions **AQ-C2** through **AQ-C4** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities identified in Conditions **AQ-C1** through **AQ-C4** to one or more air quality construction mitigation monitors. The on-site AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any or all construction activities as warranted by applicable construction mitigation conditions. The on-site AQCMM, and any air quality construction mitigation monitors responsible for compliance with the requirements of ~~AQ-C3(s)~~ and **AQ-C4** and District Regulation VIII, shall have a current certification by the California Air Resources Board for Visible Emission Evaluation prior to the commencement of ground disturbance. The AQCMM may have responsibilities in addition to

those described in this condition. The on-site AQCMM shall not be terminated without written consent of the CPM.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM, for approval, the name, current ARB Visible Emission Evaluation certificate, and contact information for the on-site AQCMM and air quality construction mitigation monitors.

AQ-C3 The on-site AQCMM shall submit to the CPM, in a monthly report, a construction mitigation report that demonstrates compliance with the following mitigation measures:

- a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered until sufficiently wet. The AQCMM shall direct additional watering when visual dust plumes are observed. The frequency of watering can be reduced or eliminated during periods of precipitation.
- b) No vehicle shall exceed 150 miles per hour within the construction site.
- c) The construction site entrances shall be posted with visible speed limit signs.
- d) All construction equipment vehicle tires shall be washed or cleaned free of dirt prior to entering paved roadways.
- e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- f) All entrances to the construction site shall be graveled or treated with water or dust soil stabilization compounds.
- g) No construction vehicles can enter the construction site unless through the treated entrance roadways.
- h) Construction areas adjacent to any paved roadway shall be provided with sandbags to prevent run-off to the roadway.
- i) All paved roads within the construction site shall be swept twice daily when construction activity occurs.
- j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept twice daily on days when construction activity occurs, and twice daily on any other day when dirt or runoff from the construction site is visible on the public roadways.
- k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or be treated with appropriate dust suppressant compounds.
- l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
- m) Wind erosion control techniques, such as windbreaks, water, chemical dust suppressants, and vegetation shall be used on all construction areas that may

be disturbed. Any windbreaks used shall remain in place until the soil is stabilized or permanently covered with vegetation.

- n) Any construction activities that may cause fugitive dust in excess of the visible emission limits specified in Condition **AQ-C4** shall cease when the wind exceeds 25 miles per hour unless water, chemical dust suppressants, or other measures have been applied to reduce dust to the limits set forth in **AQ-C4**.
- o) Diesel Fired Engines
- (1) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.
 - (2) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM that shows the engine meets the conditions set forth herein.
 - (3) All large construction diesel engines, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 1 ARB/EPA certified standards for off-road equipment unless certified by the on-site AQCMM that a certified engine is not available for a particular item of equipment. In the event a Tier 1 ARB/EPA certified engine is not available for any off-road engine larger than 50 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such soot filters is not practical for specific engine types. ~~All large construction diesel engines, which have a rating of 50 hp or more that do not have an EPA Tier 1 particulate standard (50 to 175 hp engines) and do not meet Tier 2 particulate standards, shall be equipped with catalyzed diesel particulate filters (soot filters), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types.~~ For the purposes of this condition, a Tier 1 diesel engine is “not available” or the use of such soot filters is “not practical” if the AQCMM in applying recognized industry practice certifies that:
 - The Tier 1 diesel engine is not available. For purposes of this condition, “not available” means that a Tier 1 diesel engine certified by either CARB or EPA is: (i) not in existence at any location for use by the project owner at or near the time project construction commences; (ii) in existence but the construction equipment is intended to be on-site for ten (10) days or less or (iii) not available for a particular piece of equipment.
 - Despite the project owner’s best efforts, use of the soot filter is not practical. For the purposes of this condition, “not practical” means any of the following: (i) the use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance and/or reduced power output due to an excessive increase in backpressure; (ii) the soot filter is

causing or is reasonably expected to cause significant engine damage; (iii) the soot filter is causing or is reasonably expected to cause a significant risk to workers or the public; (iv) the construction equipment is intended to be on-site for ten (10) days or less or (v) other good cause approved by the CPM.

~~The construction mitigation measures shall include necessary fugitive dust control methods as required to maintain compliance with District Rules 8021 through 8081 (Conditions **AQ-105** to **AQ-111**). Any conflict between mitigation measures (a) through (r) and District rules 8021 through 8081 will be identified in the CMP, with a specified resolution for each conflict identified. Any conflict between mitigation measures (a) through (n) and District Rules 8021 through 8081 will be identified in the CMP. In the event such as conflict precludes compliance with both the CEC and District requirements, not including District exemption and applicability thresholds which reduce or eliminate fugitive dust control requirements, the provisions of District rules shall govern.~~

Verification: In the MCR, the project owner shall provide the CPM a copy of the construction mitigation report and all diesel fuel purchase records, including quantity purchased, which clearly demonstrates compliance with condition **AQ-C3**.

AQ-C4 No construction activities are allowed to cause visible dust emissions at or beyond the project site fenced property boundary or the boundary of any adjacent property owned by the project owner. No construction activities are allowed to cause visible dust plumes that exceed 20 percent opacity at any location on the construction site. No construction activities are allowed to cause any dust visible plume in excess of 200 feet beyond the centerline of the construction of linear facilities, or cause visible dust plumes to occur within 100 feet upwind of any occupied structures that are not under the control of the project owner.

Verification: The on-site AQCM shall conduct a visible emission evaluation at the property boundary, or 200 feet from the center of construction activities at the linear facility, or adjacent to occupied structures, each time he/she sees excessive fugitive dust from the construction or linear facility site. The records of the visible emission evaluations shall be maintained at the construction site and shall be provided to the CPM on the monthly construction report.

San Joaquin Valley Air Pollution Control District Conditions

AQ-7 The exhaust stack shall be equipped with a continuous emission monitor (CEM) for NO_x, CO, and O₂. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 2201 and 1080]

Verification: The project owner shall provide a Continuous Emission Monitoring System (CEMS) protocol for review ~~approval~~ by the CPM and for

approval by the APCO at least 60 days prior to installation of the CEMS. In addition, the project owner shall provide to the CPM evidence of the District's approval of the emission monitoring system prior to first firing of the gas turbines. The project owner shall make the site available for inspection of the CEMS by representatives of the District, CARB and the Commission.

AQ-9 The facility shall install and maintain equipment, facilities and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]

Verification: The project owner shall provide a Continuous Emission Monitoring System (CEMS) protocol for review approval by the CPM and for approval by the APCO at least 60 days prior to installation of the CEMS. In addition, the project owner shall provide to the CPM evidence of the District's approval of the emission monitoring system prior to first firing of the gas turbines, and the Quarterly Operational Reports shall note any periods when the CEM data polling system was inoperative. The project owner shall make the site available for inspection of the CEMS by representatives of the District, CARB and the Commission.

AQ-12 Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]

Verification: The project owner shall provide a Continuous Emission Monitoring System (CEMS) protocol for review approval by the CPM and for approval by the APCO at least 60 days prior to installation of the CEMS. In addition, the project owner shall provide to the CPM evidence of the District's approval of the emission monitoring system prior to first firing of the gas turbines.

AQ-32 Compliance with ammonia emission limit shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO_x concentration ppmvd @ 15 % O₂ across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2) utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O₂. If this option is chosen, the project owner shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3) Alternatively, the project owner may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the project owner shall submit a monitoring plan for District

approval at least 60 days prior to commencement of operation. [District Rule 4102]

Verification: The project owner shall submit to the CPM and APCO ammonia data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-C7**). Additionally, if a District-approved calculation method using surrogate parameters to determine the daily ammonia emissions is used, the project owner shall submit for review approval by the CPM and approval by the APCO a detailed calculation protocol at least 60 prior to initial startup. If a continuous in-stack ammonia monitor is used, the project owner shall submit for review approval by the CPM and approval by the APCO an ammonia monitoring plan at least 60 days prior to initial startup. In addition, the project owner shall provide to the CPM evidence of the District's approval of the ammonia emission compliance demonstration methodology prior to first firing of the gas turbines.

AQ-38 Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

Verification: The project owner shall notify the CPM and the District 30 days prior to any compliance source test. The project owner shall provide a source test plan to the CPM for review and District for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-44 NO_x emissions (referenced as NO₂) shall be determined using EPA method 7E, EPA method 20, or CARB Method 20. The test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. [District Rules 1081, 2201, 4001, and 4703]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-45 VOC emissions (referenced as methane) shall be determined using EPA method 18 or EPA method 25. [District Rules 1081 and 2201]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-46 CO emissions shall be determined using EPA method 10 or EPA method 10B. [District Rules 1081, 2201, and 4703]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-47 Source testing to measure concentrations of PM10 shall be conducted using EPA methods 201 and 202, or EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. [District Rules 1081 and 2201]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-48 Ammonia (NH₃) emissions shall be determined using BAAQMD Method ST-1B. [District Rules 1081 and 4102]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-49 Oxygen content of the exhaust gas shall be determined using EPA method 3, EPA method 3A, or EPA method 20. [District Rules 1081, 2201, and 4703]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-50 If necessary, testing for fuel sulfur content shall be conducted utilizing ASTM Method D 3246, ASTM Method D1072-90, ASTM Method D4468-85, ASTM Method D5504-94 or ASTM Method D3246-81. [District Rules 1081 and 4001]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-51 Source testing to determine the percent efficiency of the turbine shall be conducted utilizing the procedures in District Rule 4703 (Stationary Gas Turbines). [District Rule 4703]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and APCO for approval fifteen (15) days prior to testing. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

AQ-73 The continuous emissions monitors specified in these permit conditions shall be installed, calibrated, and operational prior to the first firing of the unit. After first firing, the detection range of the CEMS shall be adjusted as necessary to accurately measure the resulting range of NO_x and CO emissions concentrations. [District Rule 2201]

Verification: The project owner shall provide notification to the District and the CPM of the anticipated dates for installation, calibration and testing for the CEMS at least ten (10) days prior to installation. The project owner shall provide a report to the District for approval and CPM for review ~~for approval~~ demonstrating compliance with CEMS calibration requirements prior to turbine first fire. The project owner shall provide ongoing calibration data in the monthly commissioning status reports (see verification of Condition **AQ-69**).

AQ-79 No hexavalent chromium containing compounds shall be added to cooling tower circulating water. [District Rule 7012]

Verification: The project owner shall provide the list of cooling tower water additives (i.e. biocides, fungicides, anti-scaling compounds, etc.) demonstrating compliance with this condition to the CPM ~~for approval~~ at least 30 days prior to operation of the cooling tower and shall provide any revisions to the cooling tower water additives list to the CPM demonstrating compliance with this condition ~~for approval~~ prior to using the new water additive.

AQ-80 Drift eliminator drift rate shall not exceed 0.0005%. [District Rule 2201]

Verification: The project owner shall provide copies of cooling tower and drift eliminator design details to the CPM and the District demonstrating compliance with this condition ~~for approval~~ at least 30 days prior to construction of permanent foundations for the cooling tower.

Alternative Proposal for AQ-47

AQ-47 Source testing to measure concentrations of PM₁₀ shall be conducted using EPA methods 201 and 202, or EPA methods 201A and 202, or CARB method 501 in conjunction with CARB method 5. Front-half (non-condensable)

and back-half (condensable) particulate shall be measured and reported.
[District Rules 1081 and 2201]

Verification: The project owner shall provide a source test plan demonstrating compliance with this condition to the CPM for review and the APCO for approval fifteen (15) days prior to testing. The CPM must approve any requested modifications to the EPA/CARB source test methods that are proposed in the source test plan. In addition, the project owner shall provide to the CPM evidence of the District's approval of the source test plan prior to conducting the source test.

BIOLOGICAL RESOURCES

BIO-8, BIO-9: Applicant requested that the Verifications be modified so that they are triggered by the start of activities that create the need for the respective permits, rather than by the start of construction of other elements of the project.

BIO-8 The project owner shall acquire the Regional Water Quality Control Board Section 401 state Clean Water Act certification, and incorporate the biological resource related terms and conditions into the project's BRMIMP.

Verification: At least 30 days prior to the start of ~~any site or related facilities~~ gas pipeline mobilization activities, the project owner shall provide the CPM with a copy of the final Regional Water Quality Control Board's certification.

BIO-9 The project owner shall provide a final copy of the U.S. Army Corps of Engineers Section 404 of the federal Clean Water Act permit. The biological resources related terms and conditions contained in the permit shall be incorporated into the project's BRMIMP.

Verification: At least 30 days prior to the start of any ~~site or related facilities~~ gas pipeline mobilization activities, the project owner shall submit to the CPM a copy of the U.S. Army Corps of Engineers permit.

BIO-10: The applicant requested that staff provide greater specificity in Items 2 and 4 of the Protocol.

BIO-10 The project owner shall modify the project design to incorporate all feasible measures that avoid or minimize impacts to the local biological resources.

Protocol:

1. Design transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;
2. Design and construct transmission lines and all electrical components to reduce the likelihood of electrocutions of large birds

(meet or exceed the clearances specified in APLIC 1994 and 1996 standards and provide insulation or molding around the ground bonding wires for the transmission poles); and

3. Provide safety lighting that points downward; and
4. If the HRSG stacks are required to be lit, Use either white or red strobe lights to reduce the collision risk of birds with the towers.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP.

FACILITY DESIGN

Attachment 1 contains revised testimony. The revisions clarify the description of applicable LORS, delete items from the equipment list that will not be used for this project, clarify the responsibilities of the various engineers, and modify a timing requirement.

GENERAL CONDITIONS

In its Prehearing Conference Statement (August 19, 2003) and in comments on the FSA made at the August 28, 2003 workshop, the applicant suggested that issues associated with a security plan may be better addressed in a rulemaking rather than in case-specific conditions of certification. At the same time, however, the Applicant seeks to tailor **COM-8** specifically to this siting case. The Applicant cannot have it both ways and staff believes that all siting cases should be subject to the same standard.

Staff, however, agrees with the Applicant that certain revisions are in order so as to, as the Applicant stated in its testimony, “clarify” the language and obligations of all project owners. Staff believes that this is also the appropriate time to provide the most recent and efficient Condition of Certification requiring security plans. Staff notes that the area of infrastructure security is rapidly evolving and recognizes that last year’s condition may not be the best version to use this year. Towards that goal, staff offers the attached revisions to **COM-8**, many of which were offered to the Applicant and discussed at the August 28, 2003 FSA workshop. Staff has also included several of the Applicant’s suggestions because they were useful and appropriate.

Staff agrees with the applicant that the most significant disagreement concerns the question of whether the Energy Commission or TID should be responsible for approval of the security plan. Staff cannot agree with the applicant’s suggestion to remove the “review and approval” requirement of **COM-8**. Staff strongly disagrees with the applicant’s statement that the Energy Commission does not have the “legal authority or the expertise” to address security matters; in fact, we believe that it is the Energy Commission’s affirmative duty – not the applicant’s – to ensure that projects licensed by the Energy Commission do not create safety or security risks. In its testimony, the Applicant makes reference to adhering to the Federal Energy Regulatory Commission (FERC) requirement

for vulnerability assessments/security plans for all FERC licensed projects. However, these projects are hydroelectric projects owned and operated by TID, and the Applicant is surely aware that FERC has no jurisdiction over the Walnut Energy Center or any other gas-fired power plant for that matter. Moreover, FERC typically includes a vulnerability assessment using specific methodology for dams (RAM-D developed by Sandia National Lab). The RAM-D methodology is not appropriate for use at a gas-fired power plant. The Energy Commission, as the agency with jurisdiction over the siting of the Walnut Energy Center, is the proper agency to exercise “approval” authority over security at this project and should retain its authority to approve the security plan.

The applicant also expressed concern that staff has not identified the standards that will be applied to the plan and that there are no “rules relating to the required expertise and a conflict of interest standard” for this review and approval. The applicant also opines that the Energy Commission may not adequately protect confidential information. The applicant is apparently unaware that the Energy Commission has very broad authority to identify the conditions necessary to ensure public safety associated with plants it licenses, that the Energy Commission routinely receives and handles confidential information in accordance with duly adopted regulations implementing the Public Records Act, and that the Energy Commission has extensive provisions guarding against conflict of interest.

Staff sees no reason to use a different approach for a security plan than has been adopted by the Energy Commission for dozens of other plans for other projects (and will presumably be adopted for this project as well). For example, staff has proposed 25 Conditions of Certification for the TID Walnut Energy Center that require the review and approval by the CPM (i.e., **BIO-5, CIVIL-3, COM-12, COM-13, CUL-1, HAZ-2, HAZ-4, LAND-4, NOISE-3, PAL-1, PAL-3, PAL-4, PAL-7, SOILS&WATER 1, SOILS&WATER 2, SOILS&WATER 3, SOILS&WATER 6, TRANS-4, TRANS-5, TRANS-6, VIS-1, VIS-2, VIS-4, VIS-5, WASTE-5**). There is a similar list of plans for each project the Energy Commission has approved. The Energy Commission does not have a single written standard describing how these 27 requirements will be reviewed and approved nor a single statement of the qualifications of the approver nor should the Energy Commission be required to provide such standards. As in all cases, however, staff reassures the Applicant that the Energy Commission does indeed intend to assign only qualified staff to review and approve security plans. **COM-8** now includes additional language to make this clear. Staff welcomes the project owner’s input regarding proper qualifications but does not offer the project owner veto authority.

Staff likewise cannot agree to the Dispute Resolution procedure suggested by the Applicant. It would be burdensome, awkward, and time-consuming and staff cannot find any justification for this approach.

Construction and Operations Security Plan, COM-8

COM-8 Thirty days prior to commencing construction, a site-specific Security Plan for the construction phase shall be developed, implemented, and maintained at the project site.

At least 60 days prior to the initial on-site receipt of hazardous materials (as described in the Operations Security Plan below), a site-specific Operations

Security Plan which includes a Vulnerability Assessment shall be developed, implemented, and maintained at the project site. The project owner shall notify the CPM in writing that the Plan is available for review and approval at the project site. Only Energy Commission personnel who have proper training and proper security clearance, as determined by the Energy Commission after consultation with the project owner, shall review and approve the plan.

Construction Security Plan

The Construction Security Plan must discuss the following security measures and describe how the project intends to implement these measures:

1. site fencing enclosing the construction area;
2. use of security guards;
3. check-in procedure or tag system for construction personnel and visitors;
and
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency.

Operations Security Plan

The project owner shall prepare a Vulnerability Assessment addressing the storage and use of acutely hazardous materials, hydrogen gas, Liquefied Petroleum Fuels, sulfuric acid in concentrations greater than 90%, and any material poisonous by inhalation as defined in 49 CFR §171.8. The Vulnerability Assessment shall be consistent with US EPA, US Department of Justice, and Energy Commission guidelines. Based upon the Vulnerability Assessment, the project owner shall prepare and implement an Operations Security Plan that provides the level of security appropriate for the facility. The Operations Security Plan must discuss the following security measures and describe which measures are planned for implementation and how they will be implemented:

1. permanent site fencing and security gate(s);
2. security guards;
3. security alarm for critical structures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. evacuation procedures;
6. perimeter breach detectors and on-site motion detectors;
7. video or still camera monitoring system;
8. fire alarm monitoring system;
9. management and employee security responsibility and training;
10. site personnel background checks the Project Owner will use to ascertain the employees' and routine on-site contractors' claims of identity and employment history, consistent with state and federal law regarding security and privacy;

11. site access for vendors; and
12. requirements for Hazardous Materials vendors to prepare and implement security plans as per 49 CFR 172.800 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR Part 1572, Subparts A and B.

The CPM may authorize modifications to the measures proposed by the project owner, or may require additional measures to those listed above depending on circumstances unique to the facility, and in response to industry-related security concerns. However, the language requirements of COM-8 will be subject to revision, replacement, or termination pursuant to the Commission's future rulemaking or other action that will promulgate guidelines on security. Any such action will include an opportunity for power plant owners to review and comment on such guidelines.

NOISE

In response to Committee questions at the August 25, 2003 hearing on this project, staff agrees that the following clarifying text should be added to the discussion in the section of the FSA addressing compliance with the county noise element (page 4.6-15):

Compliance With County Noise Element

The Stanislaus County Noise Element sets a standard of 75 dBA L_{dn} or CNEL as normally acceptable for agriculturally-zoned land and 80 dBA as conditionally acceptable (Stanislaus 2000, Chapter 4, Figure 3). The applicant's projections (see **NOISE Table 8** above) show that the project would comply with the normally acceptable level at all measured receptor locations. At the time the PSA was published, staff was under the impression that the County Noise Element standard for single-family residences was applicable. Staff now understands that although there are residences in the project vicinity, the area is zoned for agricultural uses and that higher noise levels identified in the County Noise Element for those land uses are applicable.

NOISE-4: In addition, staff agrees to modify **NOISE-4** to address concerns expressed by the Committee at the August 25, 2003 hearing that the CPM could, under **NOISE-4**, authorize violations of the County's Noise Ordinance (noise limits that are found in **NOISE-8**).

NOISE-4 If a traditional, high-pressure steam blow process is employed, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 89 dBA measured at a distance of 50 feet. ~~The project owner shall conduct steam blows only during the hours specified in Condition of Certification **NOISE-8**, unless the CPM agrees to longer hours based on a demonstration by the project owner that offsite noise impacts will not cause annoyance.~~

If a low-pressure continuous steam blow or air blow process is employed, the project owner shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM, who shall review the proposal with the objective of ensuring that the resulting noise levels will not exceed 45 dBA L_{eq} measured at any of the four noise monitoring locations identified in the Application for Certification. If the low-pressure process is approved by the CPM, the project owner shall implement it in accordance with the requirements of the CPM.

Verification: At least 15 days prior to the first high-pressure steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer and the noise levels expected, and a description of the steam blow schedule.

At least 15 days prior to any low-pressure continuous steam blow, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

NOISE-6: The following change corrects an error in **NOISE-6**.

NOISE-6 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due to plant operation to exceed the values shown here, measured at two of the four monitoring locations employed in the applicant’s pre-application survey:

Monitoring Location	Noise Due to Project (dBA L_{eq})
M2 – Residence on West Main Street	60
M4 – Residence on Washington Street	56

No new pure-tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints.

- A. When the project first achieves a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at the ~~four~~ two monitoring sites. This survey during power plant operation shall also include measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.

The measurement of power plant noise for the purposes of demonstrating compliance with this Condition of Certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically

extrapolated to determine the plant noise contribution at the nearest residence. However, notwithstanding the use of this alternative method for determining the noise level, the character of the plant noise shall be evaluated at the nearest residence to determine the presence of pure tones or other dominant sources of plant noise.

- B. If the results from the noise survey indicate that the power plant noise level (L_{eq}) at the affected receptor exceeds the above value for any given hour during the 25-hour period, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.
- C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

The survey shall take place within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity. Within 30 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Verification: Within 30 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

PUBLIC HEALTH

Public Health-1: The Applicant requested that the reference to the applicable requirements be modified and that Cooling Technology Institute be properly named.

Public Health-1 The project owner shall develop and implement a cooling tower Biocide Use, Bio-film Prevention, and Legionella Control Program to ensure that cooling tower bacterial growth is controlled. The Program shall be consistent with staff's "~~Biocide Monitoring Program Guidelines~~" or the Cooling Tower Technology Institute's "Best Practices for Control of Legionella" guidelines.

Verification: At least 30 days prior to the commencement of cooling tower operations, the Biocide Use, Biofilm Prevention, and Legionella Control Program shall be provided to the CPM for review and approval.

SOILS & WATER RESOURCES

Introduction

As stated in Title 20 of the California Code of Regulations, Section 1742.5, staff must assess the environmental effects of the applicant's proposal, the completeness of the applicant's proposed mitigation measures, and the need for, and feasibility of, additional or alternative mitigation measures. As specified in Section 1742, staff must also evaluate an applicant's mitigation plan for completeness and effectiveness and determine whether more effective measures are reasonably necessary, feasible and available.

As stated in the FSA for Turlock Irrigation District's (TID) Walnut Energy Center (WEC), staff found the proposed project could cause both temporary and permanent land disturbance and alter existing drainage patterns. Staff also found that construction and operation activities may result in both physical (sediment) and chemical (hazardous materials) contamination of soil and water resources if not properly mitigated. Based on this assessment, staff recommended several conditions of certification to ensure these potential impacts are adequately mitigated. In comments on the FSA, the applicant suggested a number of changes to the conditions of certification proposed by staff. At, and subsequent to, the FSA Workshop held on August 28, 2003, staff and the applicant discussed these changes, specifically focusing on proposed modifications to **SOILS&WATER-1 – SOILS&WATER-3**, and **SOILS&WATER-5 – SOILS&WATER-6**. As a result of these discussions staff has agreed to several changes. This testimony provides staff's rationale for the changes we are proposing.

Modifications to Proposed Soils&Water -1, -2 and -3

The applicant has communicated to staff their concerns that the proposed conditions of certification **SOILS&WATER-1** and **-3** duplicate the activities of the SWRCB and RWQCBs. In particular, the applicant believes the Commission has no authority to approve a SWPPP for purposes of compliance with the NPDES permit program.

Staff proposed the "review and approve" provision of these conditions in order to be able to use them in determining the completeness and adequacy of the plans to achieve certain construction and operation impact mitigation associated with storm water. During the proceeding, the applicant provided staff with a draft copy of the construction SWPPP for our assessment which generally describes the measures or practices that they propose to mitigate potential impacts. As discussed in the Final Staff Assessment (FSA), staff identified deficiencies in these plans and recommended conditions that would require these plans to be revised and reflect the final design of the project. Staff's review was focused on both mitigation of potential impacts and what staff believed would be required for the plan to conform with applicable laws, ordinances, regulations, and standards.

How the General NPDES Permits Work

The Federal Clean Water Act establishes a framework for regulating municipal and industrial storm water discharges to Waters of the United States and administers this framework under the National Pollution Discharge Elimination System (NPDES) program. In accordance with the regulations for this program established by the Environmental Protection Agency (EPA), the SWRCB has elected to adopt a General Permit for both construction and operational activities for industrial projects that will apply to all storm water dischargers. In other words, the actual permit is between the

SWRCB and the EPA; individual developers can obtain coverage under the permit by meeting the requirements specified by the SWRCB. The performance standards of the General Permits prohibit the discharge of any contaminant or pollution in storm water. Regional boards are charged with implementing and enforcing the General Permits. Regulating several dischargers under one permit has the effect of reducing the administrative burden on the regional boards that would otherwise be required to issue individual permits to storm water dischargers. The RWQCB may issue individual permits for those activities found to be ineligible for coverage under this permit. If an industrial developer can show that their project does not result in any storm water discharge, it may be exempted from coverage under this program. If the board finds that a developer is not in compliance or does not take corrective action, it has the power to levy fines.

Requirements for an industrial storm water discharger to be covered under the General Permits adopted by the SWRCB are:

1. File a Notice of Intent (NOI) form with the Board.
2. Pay the specified fee.
3. Develop and implement a SWPPP in accordance with the requirements specified in the permit.

Although the Board receives the NOI form and the fee, the SWPPP is not submitted to the Board, nor does the Board review or approve the SWPPP prior to construction or operation of a project. Nor is the Board required to do site inspections or recommend changes to the SWPPP (such as the addition or modification of Best Management Practices (BMPs)). The SWPPP is not a permit, but is a condition of the permit that describes the practices the developer has chosen to minimize discharge of contaminated storm water from a project. As discussed in the FSA, staff reviewed the draft SWPPP proposed by TID and determined that it does not meet the permit requirements specified by the NPDES permit. In addition, this plan lacked adequate information for staff to determine if non-storm water related impacts associated with construction would be adequately mitigated.

As noted above, the program uses performance based standards (i.e., pollution and contamination of storm water is prohibited) rather than dictating specific discharge limits that must be attained and relies on the project developers to conduct their own inspections and self certify compliance with this program. The program also relies on developers to notify the board of illegal discharges or program violations and take corrective action. Simply because a developer has developed a SWPPP does not mean that the SWPPP is sufficient to meet the requirements of the program objectives or that the BMPs identified in the SWPPP are being implemented. Nor does it ensure that impacts are being mitigated. Violations of the program requirements and its objectives may occur even if the developer has a SWPPP (*Attwater memo dated December 6, 1999 re: "The Clean Water Enforcement and Pollution Prevention Act of 1999", SWRCB*).

Unfortunately, there are no required enforcement procedures to ensure that the SWPPP is adequate prior to the start of construction or industrial activity. In addition, the

implementation and enforcement of this program varies according to the region. In some regions, boards lack funds or resources to inspect sites, review documents or respond to complaints about impacts. Consequently, even though the program and permits exist, there is no assurance that the requirements of the program will be met and therefore that appropriate mitigation will be implemented to avoid or lessen impacts. This is in marked contrast with federal air quality programs implemented by the regional air districts that provide certainty prior to the start of construction that program requirements are met.

Scope of the NPDES General Permit Program

As the title implies, the NPDES General Permits for Storm Water Discharges Associated with Construction Activities and Industrial Activities is focused on storm water and reducing the discharge of contaminants in storm water that may impact waters of the United States. Staff's assessment is not limited to storm water impacts, but may include but not be limited to impacts to soil quality and productivity, flooding associated with non-storm water activities (i.e., well development, dewatering activities), wind erosion, waste water storage and disposal (this may include storm water), contamination of groundwater (this may include percolation of contaminated drainage), etc. Coverage under the General Permit does not necessarily address these other impacts or ensure that mitigation for these impacts is being implemented.

The General Permit Program established **minimum** design standards and performance based permit conditions. Local or other agencies have established more stringent requirements. The City of Turlock, like other local jurisdictions, has established design criteria in addition to those required by the Regional Board, specifically requiring that certain facilities be sized to manage a 100 year storm event not a 25 year event. Since the Commission's decision is in lieu of local drainage, grading or excavation permits, staff must evaluate the applicant's proposal to determine whether it conforms with these local requirements. SWPPPs may include an erosion control plan, but not necessarily one that complies with all local requirements or address all drainage or flood control concerns. SWPPPs do not typically address prevention of groundwater contamination. However, some measures which are proposed to prevent contamination to surface drainage may also prevent contamination to groundwater.

Not until staff has had an opportunity to review all of the final mitigation plans to be implemented by an applicant, can staff determine that the plans are complete and can achieve objectives. Traditionally these plans have included SWPPPs, revegetation plans, flood control plans and Erosion Control Plans, provisions in other permits such as Nationwide permits and Streambed Alteration Agreements. If improvements to measures are required, staff relies on modifications to these plans, rather than require a separate plan.

Evaluation of Impacts to Soils and Water Resources

As stated above staff is required to assess whether proposed mitigation plans are complete and adequate to achieve effective mitigation and whether additional measures are needed. Based on how this program is implemented and its scope, staff can not rely on the filing of the NOI and payment of the fees related to the General Permit program as a demonstration that potential impacts, particularly during construction, are

being mitigated. Staff determined that the proposed project has the potential for adverse impacts related to soil and water resources from increased wind and water erosion, contamination of storm water that is directed to an on-site, unlined percolation pond, contamination of soils, and changes in site drainage. The applicant proposed BMPs in its draft SWPPP to address storm water and erosion impacts. During operation, the applicant proposes to have no off-site storm water discharge and may qualify for exemption from the General Permit. However, staff must ensure that mitigation measures will provide effective protection for the life of the project.

The applicant provided staff with a draft SWPPP that incorporated an Erosion Control Plan for construction. Limited information related to BMPs for operational activities was provided. The construction related plan was based on the preliminary design of the project, provided general discussions of possible BMPs that may be implemented and discussed generally the types of actions the applicant will take to avoid or lessen impacts to storm water or run-off. In separate filings, the applicant submitted information related to compliance with local drainage requirements. Staff determined that this information was incomplete and could not fully evaluate the effectiveness of the mitigation measures proposed.

Recommended Changes to SOILS&WATER-1, -2, and -3

To address the deficiencies in the mitigation plan provided to staff by the applicant, the staff originally recommended that the mitigation plan be submitted in two parts – a SWPPP that addresses storm water and the Drainage, Erosion and Sediment Control Plan that would address all other topics not covered under the general permit. To respond to the applicant's concern that the Commission does not have approval authority for SWPPPs, staff now recommends that the mitigation plan be a complete comprehensive single document submitted under **SOILS&WATER-2** that will address both temporary and permanent measures to avoid soil loss and degradation, groundwater contamination from the percolation of both wet and dry weather drainage at the site and flooding issues. This plan may incorporate the SWPPP being used to satisfy the Board's requirements, but is not limited to those requirements. This plan will need to include appropriate monitoring and maintenance of the mitigation measures to ensure their effectiveness. Review and approval of this plan prior to the start of construction will provide adequate certainty that appropriate mitigation is implemented during construction and continued on through operation for the life of the project.

SOILS&WATER 1: The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the construction of the entire project (construction SWPPP). The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB regarding this permit. ~~Prior to beginning any site mobilization associated with any project element, the project owner shall submit to the CPM a copy of the Notice of Intent for Construction accepted by the RWQCB and obtain Energy Commission CPM approval of the construction activity SWPPP for WEC.~~

Verification: The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB about the General NPDES permit for the Discharge of Storm Water Associated with Construction Activities within 10 days of its receipt (when the project owner receives correspondence from the RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB). This information shall include copies of the Notice of Intent and Notice of Termination for the project. ~~No later than 60 days prior to the start of site mobilization for any project element, the project owner shall submit a copy of the SWPPP required under the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity to the CPM for review and approval. The final SWPPP will include copies of the Notice of Intent for Construction accepted by the RWQCB and incorporate any requirements for the protection of storm water or water quality contained in the Nationwide permits for WEC. Approval of the SWPPP by the CPM must be received prior to site mobilization for any project element.~~

SOILS&WATER 2: Prior to beginning any site mobilization activities for any project element, the project owner shall obtain CPM approval for a site-specific Drainage, Erosion and Sedimentation Control Plan that addresses all project elements and ensures protection of water quality and soil resources, demonstrates no increase in off-site flooding potential or sedimentation, meets local requirements, provides legible drawings and complete narrative, and provides for monitoring and maintenance of all mitigation measures under the Plan. The plan shall ~~address revegetation and~~ be consistent with the grading and drainage plan as required by **Condition of Certification CIVIL-1** and may incorporate by reference any SWPPP developed in conjunction with any NPDES permit.

Verification: No later than 60 days prior to the start of any site mobilization for any project element, the project owner shall submit the Drainage, Erosion and Sedimentation Control Plan to the CPM for review and approval. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements, include legible drawings, details and complete narrative and identify all monitoring and maintenance activities. No later than 60 days prior to start of any site mobilization, the project owner shall submit a copy of the plan to Stanislaus County and the City of Turlock for review and ~~requesting~~ comments. Any comments shall be provided to the CPM within 30 days of receipt of the plan. The plan must be approved by the CPM prior to start of any site mobilization activities. During construction, the project owner shall provide a report in the monthly compliance report on the effectiveness of the drainage, erosion and sediment control activities and the results of monitoring and maintenance activities. Once operational, the project owner shall provide in the annual compliance report information on the results of monitoring and maintenance activities.

SOILS&WATER 3: The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with

Industrial Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the operation of WEC (operation SWPPP). The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB about this permit. ~~The project owner shall submit to the CPM a copy of the Notice of Intent for Operation accepted by the RWQCB and obtain approval of the General Industrial Activities SWPPP from the Energy Commission CPM prior to commercial operation of the WEC.~~

Verification: The project owner shall submit copies to the CPM of the operation SWPPP prior to commercial operation and all correspondence between the project owner and the RWQCB about the General NPDES permit for Discharge of Storm Water Associated with Industrial Activity within 10 days of its receipt (when the project owner receives correspondence from the RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB). This information shall include a copy of the Notice of Intent and Notice of Termination. ~~No later than 60 days prior to the start of commercial operation, the project owner shall submit to the CPM a copy of the SWPPP required under the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity to the CPM for review and approval. The operational SWPPP shall include copies of the Notice of Intent for Operation accepted by the RWQCB and incorporate any requirements for the protection of storm water or water quality contained in the Nationwide permits for WEC. Approval of the operational SWPPP by the CPM must be received prior to start of commercial operation. In addition, the project owner shall submit to the CPM copies of the annual monitoring report for storm water as normally submitted to the Central Valley RWQCB under the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity.~~

Revisions to SOILS&WATER-5

After the FSA was published, and prior to the August 28, 2003 workshop, the applicant submitted proposed changes to **SOILS&WATER-5** that would have increased the amount of back-up water the applicant would be able to use annually, increase the bridge time (during which the applicant would be allowed to use potable water originating from an overdrafted aquifer), and add an emergency clause which would allow the applicant to use potable water for an indefinite period of time. Staff informed the applicant at the workshop that these requested modifications constituted a significant change in the project as proposed by the applicant prior to the completion of staff's assessment and would require additional analysis. By the conclusion of the workshop, the applicant had withdrawn the requests for additional time allowed to use the potable water bridge supply and an increase in the annual back-up supply. However, the applicant continues to request an additional provision allowing use of an alternative water supply in the event of an emergency. Staff agrees that the conditions should address the use of an alternative water supply in the event of an emergency, and therefore supports the addition of language identical to that adopted in the Commission's recent decision on the Pico Power Plant. That language would allow the applicant to inform the CPM of a disruption in the supply of recycled water and the CPM

to approve the use of an alternative supply. The applicant, on the other hand, requests language that allows it, not the Commission, to decide whether such use is justified. Staff objects to the language proposed by the applicant because the Commission – not the project owner – should be responsible for determining whether suspension of a condition of certification is appropriate, unless the potential impacts associated with such a suspension have been evaluated and determined to be insignificant.

The language proposed by the applicant to address this situation is taken from the Commission's decision for the Russell City project. The Russell City decision allowed the applicant to determine whether an alternative water supply should be used in the event of an emergency. However, the factual circumstances of the Russell City Project are very different from those of this project. The most important distinction is that the Russell City project did not propose the use of a back-up supply derived from groundwater. Moreover, staff had determined that prolonged use of the back-up supply (surface water) would have no adverse impacts. In this case, however, prolonged reliance on potable water by WEC has the potential to cause an exacerbation of the overdraft conditions in the region and would require additional analysis to determine possible effects and appropriate mitigation.

In fact, this case is much more similar to the Pico Power Plant than the Russell City project. In the Pico case, groundwater from an overdraft basin was proposed and approved for use as back-up to the recycled water supply of the power plant. This groundwater was derived from an overdraft basin. During the siting process for the Pico Power Plant, the applicant originally proposed the use of the Russell City language; staff objected because of the differences between the two projects. After discussing the issue with staff, the applicant agreed to language that would allow the CPM to determine whether use of the alternative water supply is appropriate. The *force majeure* language used in the Pico case allowed the CPM to authorize continued use of potable supplies after consultation with local agencies. The CPM would specify the duration of this use based on information available at that time. Staff believes this language is also appropriate for TID and recommends the following modifications to **SOILS&WATER-5** be adopted accommodating *force majeure* concerns while ensuring protection of the groundwater supplies.

SOILS&WATER-5: The project's water use shall be limited as described below. For purposes of this condition, the bridge period is defined as that period of time between the commencement of commercial operation of the WEC and the earlier of December 31, 2006 or when recycled water from the City of Turlock's wastewater treatment plant (WWTP) is available to the WEC.

Water for construction purposes shall consist of groundwater provided from the existing TID well at the Walnut substation.

Water for all purposes used during the bridge period shall consist of potable water provided by the City of Turlock, and shall not exceed 2 million gallons per day or 1,803 afy.

Water for operational and landscaping purposes used after the bridge period shall consist of recycled water from the City of Turlock WWTP and shall not exceed 1,800 afy. Water for domestic needs after the bridge period shall consist of potable water provided by the City of Turlock and shall not exceed 3 afy. Potable water may also be used for back-up to the recycled water supply in the event of a short-term disruption in service and shall not to exceed 51 afy. Should the recycled water supply be extensively disrupted by a natural disaster or similar unforeseen emergency, the CPM may allow additional pumping following consultation with the City of Turlock. Potable water may also be used in the event that recycled water is not available to the project subject to the provisions of **SOILS&WATER-6**. Potable water use shall be calculated using a five year rolling average.

Verification: The project owner shall notify the Commission no later than May 31, 2006 and in monthly compliance reports thereafter, as to the status of recycled water production by the City of Turlock's WWTP, until the WEC is using tertiary treated, recycled water for its non-potable operational and landscaping requirements. This notice shall include information on the issues related to recycled water production, DHS approval for recycled water service and the expected availability of recycled water supplies to WEC. Should the supply of recycled water be disrupted due to a natural disaster or other unforeseen emergency, the applicant shall contact the CPM to discuss continued use of potable water by WEC. After consulting with the City of Turlock, the CPM may allow use of potable water exceeding 51 afy during the duration of the emergency, subject to any conditions necessary to protect the underground aquifer. After recycled water service is provide to WEC, the project owner shall report water use to the commission as required by **SOILS&WATER-7**. Annual average water use shall be calculated using a five years rolling average of actual water use starting with the first year of operation. In the event of an interruption or reduction in recycled water service that requires the use of back-up potable water, the project owner shall notify the CPM, in writing, within 24 hours.

Clarifications to Soils&Water-6

The applicant proposed minor clarifications to **SOILS&WATER-6** which staff has reviewed and agrees are appropriate. Staff recommends that the following modifications to **SOILS&WATER-6** be adopted:

SOILS&WATER 6: In the event that the City of Turlock's WWTP is not able to produce recycled water in accordance with Title 22 requirements by December 31, 2006 for use by WEC, the project owner may submit no later than October 30, 2006, an alternative water supply plan to the CPM for review and approval. This plan shall demonstrate that high quality water use by WEC shall not increase water use above the historical average of 54 afy required to irrigate the 18-acre site. Upon approval of the plan by the CPM, the project owner may implement the plan.

Verification: In the event that recycled water is not expected by the City of Turlock to be available until after December 31, 2006, the project owner shall submit for review and approval an alternative water supply plan by October 30, 2006. This plan shall demonstrate no net increase in high quality water use above the historical average of 54 afy. This plan may achieve no net increase in high quality water use by methods including, but not limited to:

1. Use of shallow, degraded groundwater from the unconfined aquifer in the vicinity of the project site ~~in the eastern portion of the basin.~~
2. Use of irrigation tailwater or return flows.
3. Continued use of potable water supplied by the City of Turlock in conjunction with conservation measures that achieve an offset of water use in excess of 54 afy on an average annual basis.

This plan shall specifically address how the ~~developer~~ project owner will demonstrate no net increase in water use, and any assumptions, calculations, needed agreements and infrastructure to implement identified measures. Approval by the CPM of the alternative water supply plan is required prior to December 31, 2006.

TRAFFIC AND TRANSPORTATION

TRANS-4, TRANS-6: Staff agrees with the applicant's proposed revisions to **TRANS-4** and **TRANS-6** as presented in its testimony dated September 15, 2003 and which are provided below for completeness.

TRANS-4 The project owner shall prepare a parking plan(s) for the ~~preconstruction~~, construction, and operation phases of the project in consultation with the City of Turlock. The City of Turlock shall have 30 calendar days to review the parking plan and provide written comments to the project owner. The project owner shall provide a copy of the City of Turlock's written comments and a copy of the parking plan(s) to the CPM. The parking plan shall include a policy to be enforced by the project owner stating all project-related parking occurs on-site or in designated off-site parking areas as shown on the plan.

Verification: At least 30 calendar days prior to site mobilization, the project owner shall provide a copy of the parking plan for the construction phase to the CPM for review and approval with documentation of for review and the submittal of any written comments by the City of Turlock.

At least 30 calendar days prior to the start of commercial operation, the project owner shall provide a copy of the final on-site parking plan for the facility to the CPM for review and approval with documentation of review and the submittal of any written comments by the City of Turlock.

TRANS-6 The project owner shall provide submit to the CPM a copy of the private vehicular access easement (PVAE) executed with the affected property owner(s) securing the Walnut Energy Center's secondary vehicle access to the subject property. The project owner shall also provide to the CPM a copy of the maintenance and repair agreement for the PVAE executed with the affected property owner, allowing the Project Owner to maintain, service and repair the vehicle access easement area. The PVAE and the maintenance/repair agreement shall be executed prior to the start of construction of the secondary access road. ~~for approval a private vehicular access easement (PVAE) plan securing a secondary vehicle access (at the minimum, to be used by emergency services vehicles). The installation/construction of the PVAE shall be completed to allow emergency services vehicles access to the power plant property at anytime. At least 60 calendar days prior to the start of construction, the project owner shall provide to the CPM for review and approval a PVAE plan. The PVAE plan shall include a diagram that shows: the power plant property, the location and dimensions of the proposed PVAE, its connection to the public right-of-way and the proposed vehicle access road (driveway) on the power plant property. Also, the PVAE plan shall include copies of the executed PVAE and the executed PVAE maintenance/repair agreement with the affected property owner. The project owner shall provide a copy of the PVAE plan to the affected local jurisdiction's public works department and affected fire protection department for review and comment. The project owner shall provide to the CPM a copy of the transmittal letter submitted to the local jurisdiction's public works department and fire protection department requesting their review of the PVAE plan.~~

Verification: At least 30 calendar days prior to the start of construction of the secondary access road, the Project Owner shall submit to the CPM a copy of the executed PVAE and maintenance/repair agreements. ~~Prior to the start of construction, the installation/construction of the PVAE shall be completed to allow emergency services vehicles access to the power plant property. Within 14 days after installation of the PVAE the project owner shall contact the CPM to request an inspection.~~

TRANSMISSION LINE SAFETY & NUISANCE

In response to Committee questions at the August 25, 2003 hearing on this project, staff agrees that it is appropriate to delete the last sentence of the last paragraph of the Project Description section on page 4.11-8 as follows:

~~“Since the proposed WEC lines are to be designed and operated according to standard TID practices, their design-driven field strengths (and, therefore, potential contribution to existing area fields levels) should be at the same level as from TID lines of the same voltage and current-carrying capacity. Staff recommends a specific condition of certification (**TLSN-4**) to provide the data necessary for the required compliance assessment. The need for further mitigation would be established from such an assessment.”~~

In addition, staff is further amending its testimony to add the following sentence to the end of the second paragraph under Project Specific Impacts – Electronic and Magnetic Field Exposure (FSA Part 1, page 4.11-10):

“The maximum strengths of the electric fields from all the existing area lines were presented as ranging from 0.17 kV/m to 0.39 kV/m, which are within the normal background levels of one kV/m, or less. The maximum intensity of the electric fields from the existing 115 kV lines was presented as 0.30 kV/m. Since this line is of the same voltage and design as the proposed 115 kV WEC line, staff considers both this line and the companion 69 kV WEC line as unlikely to significantly add to area electric fields within their respective routes. This lack of significant addition is reflected by the electric field strength of 0.7 kV at the connection point between the proposed project lines and the existing 69 kV line. From this point, the field would diminish to about 0.05 kV 100 feet away.”

TLSN-1: Staff has corrected the references contained in the FSA to PG&E.

TLSN-1 The project owner shall provide specific evidence that the proposed interconnection transmission lines will be designed and constructed by ~~PG&E~~ TID according to the requirements of CPUC’s GO-95, GO-52, Title 8, Section 2700 et seq. of the California Code of Regulations and TID’s EMF reduction guidelines arising from CPUC Decision 93-11-013.

Verification: 30 days before starting construction of WEC’s transmission lines or related structures and facilities, the project owner shall submit to the Commission’s Compliance Project Manager (CPM) a letter from ~~PG&E~~ TID affirming that the overhead section will be constructed according to the requirements of GO-95, GO 52, Title 8, Section 2700 et seq. of the California Code of Regulations, and TID’s EMF-reduction guidelines arising from CPUC Decision 93-11-013.

TLSN-4: Staff has modified the condition to include the location of the specific points referenced therein.

TLSN-4 The project owner shall provide the results of the electric and magnetic field measurements for the existing and proposed lines (according to IEEE measurement protocols) before and after they are energized. Measurements shall be made at representative points (on-site and along the line route) as necessary to identify the maximum field exposures possible during WEC operations. The locations for such measurements are those identified in the AFC by the applicant as Points A, B, C, D, and E and for which field strength estimates were provided.

Verification: The project owner shall submit the field measurement results to the CPM within 60 days of completion.

VISUAL RESOURCES

VIS-1, VIS-2: The timing in the verifications was changed to a time mutually agreed to by staff and the applicant.

VIS-2 The project owner shall treat the surfaces of all major project structures and buildings conventionally receiving color treatment and visible to the public with a gray color, as specified in the AFC. The project owner shall establish that the surfaces of the equipment will be treated in such a way that minimize visual intrusion and contrast by blending with the landscape; the surfaces do not create excessive glare; and the treatment is consistent with local laws, ordinances, regulations, and standards. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-refractive. The project owner shall submit for CPM review and approval and to the City of Turlock for review and comment, a specific treatment plan the proper implementation of which will satisfy these requirements. The treatment plan shall include:

- a. Specification, and 11" x 17" color simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture, from Key Observation Points 2 and 5;
- b. A list of each major project structure, equipment, building, tank, pipe, transmission line tower and/or pole, and fencing visible to the public, specifying the color(s) and finish proposed for each (colors must be identified by name and by vendor brand or a universal designation);
- c. Two sets of brochures and/or color chips for each proposed color;
- d. Samples with dimensions of at least five inches by seven inches of each proposed treatment and color on each material to which they would be applied that would be visible to the public;
- e. A detailed schedule for completion of the treatment; and
- f. A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated on site, until the project owner receives notification of approval of the treatment plan by the CPM.

Verification: The project owner shall submit its proposed treatment plan at least 60 days prior to ordering the first structures that are color treated during manufacture. If a revision is required, the project owner shall provide the CPM with a revised plan within 30 days of receiving notification that revisions are needed.

~~Prior to first synchronizing of any turbine to the electrical grid, the project owner shall~~ No later than 45 days following the Source Tests conducted pursuant to Condition of Certification AQ-42, the Project Owner shall notify the CPM that all

structures and buildings are ready for inspection. The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-4 The project owner shall design and install all permanent exterior lighting such that lamps and reflectors are not visible from public viewing areas; lighting does not cause excessive reflected glare; direct lighting does not illuminate the nighttime sky; illumination of the project and its immediate vicinity is minimized to the extent feasible consistent with safety and security considerations; and lighting complies with local policies and ordinances. To meet these requirements the project owner shall submit a lighting control plan that incorporates the following elements:

- a. Lighting shall be designed so exterior light fixtures are hooded/shielded, with lights directed downward or toward the area to be illuminated and so that direct illumination of the night sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to reduce light trespass outside the project boundary. The plan shall include line-of-sight diagrams that demonstrate that the lighting will satisfy these requirements;
- b. All lighting shall be of minimum necessary brightness consistent with worker safety and security concerns;
- c. Lamps shall be low-pressure sodium, or other low-glare type lamps;
- d. High illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have switches or motion detectors to light the area only when occupied; and
- e. If the project owner receives a complaint about lighting, the project owner shall notify the CPM and shall use the complaint resolution form shown in the General Conditions section of the Compliance Plan to record each lighting complaint and to document the resolution of that complaint. The project owner shall provide a copy of each complaint from to the CPM.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to arrange a meeting to discuss the documentation required in the lighting control plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and to the City of Turlock for review and comment a lighting control plan that describes the measures to be used and demonstrates that the requirements of the condition will be satisfied. The project owner shall not order any exterior lighting until it receives CPM approval of the lighting mitigation plan.

~~Prior to first synchronizing of any turbine to the electrical grid, the project owner shall~~ No later than 45 days following the Source Tests conducted pursuant to Condition of Certification AQ-42, the Project Owner shall notify the CPM that the

lighting has been completed and is ready for inspection. If the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed.

The project owner shall report any complaints about permanent lighting and provide documentation of resolution in the Annual Compliance Report for that year.

FACILITY DESIGN

Testimony of Shahab Khoshmashrab, Al McCuen, and Steve Baker

INTRODUCTION

Facility Design encompasses the civil, structural, mechanical and electrical engineering design of the project. The purpose of the Facility Design analysis is to:

- verify that the laws, ordinances, regulations and standards (LORS) applicable to the engineering design and construction of the project have been identified;
- verify that the project and ancillary facilities have been described in sufficient detail, including proposed design criteria and analysis methods, to provide reasonable assurance that the project can be designed and constructed in accordance with all applicable engineering LORS, and in a manner that assures public health and safety;
- determine whether special design features should be considered during final design to deal with conditions unique to the site which could influence public health and safety; and
- describe the design review and construction inspection process and establish Conditions of Certification that will be used to monitor and ensure compliance with the intent of the engineering LORS and any special design requirements.

FINDINGS REQUIRED

The Warren Alquist Act requires the Energy Commission to “prepare a written decision ...which includes...(a) Specific provisions relating to the manner in which the proposed facility is to be designed, sited and operated in order to protect environmental quality and assure public health and safety [and] (d)(1) Findings regarding the conformity of the proposed site and related facilities...with public safety standards...and with other relevant local, regional, state and federal standards, ordinances, or laws...” (Pub. Resources Code, §25523).

SUBJECTS DISCUSSED

Subjects discussed in this analysis include:

- Identification of the engineering LORS applicable to facility design;
- Evaluation of the applicant’s proposed design criteria, including the identification of those criteria that are essential to ensuring public health and safety;
- Proposed modifications and additions to the Application for Certification (AFC) that are necessary to comply with applicable engineering LORS; and
- Conditions of Certification proposed by staff to ensure that the project will be designed and constructed to assure public health and safety and comply with all applicable engineering LORS.

SETTING

Turlock Irrigation District (TID) proposes to construct and operate a nominally rated 250 megawatt combined-cycle power plant known as the Walnut Energy Center (WEC). The project will be located at the western edge of Turlock, Stanislaus County. The site will occupy approximately 18 acres and will lie in seismic zone 3. For more information on the site and related project description, please see the **Project Description** section of this document. References to “the City” and “the County” designate the City of Turlock and Stanislaus County, respectively. Additional engineering design details are contained in the Application for Certification (AFC), in Appendices 10A through 10G (TID 2002a).

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

~~Lists of LORS applicable to each engineering discipline (civil, structural, mechanical and electrical) are described in the AFC (TID 2002a, Appendices 10A through 10G). Some of these LORS include the California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations), and guidelines promulgated by the American National Standards Institute (ANSI), American Society of Mechanical Engineers (ASME), American Society for Testing and Materials (ASTM) and American Welding Society (AWS), and other applicable LORS.~~

ANALYSIS

The basis of this analysis is the applicant’s analysis and proposed construction methods and list of engineering LORS and design criteria set forth in the AFC.

SITE PREPARATION AND DEVELOPMENT

Staff has evaluated the proposed design criteria for grading, flood protection, erosion control, site drainage and site access. Staff has assessed the criteria for designing and constructing linear support facilities such as a natural gas pipeline and electric transmission line. The applicant proposes to use accepted industry standards (see AFC Appendices 10A through 10G for a representative list of applicable industry standards), design practices and construction methods in preparing and developing the site. Staff concludes that the project, including its linear facilities, would most likely comply with all applicable site preparation LORS, and proposes Conditions of Certification (see below and the **Geology and Paleontology** section of this document) to ensure compliance.

MAJOR STRUCTURES, SYSTEMS AND EQUIPMENT

Major structures, systems and equipment are defined as those structures and associated components or equipment that are necessary for power production and are costly to repair or replace, that require a long lead time to repair or replace, or that are used for the storage, containment, or handling of hazardous or toxic materials. Major structures and equipment will be identified through compliance with proposed Condition of Certification **GEN-2** (below).

The AFC contains lists of the civil, structural, mechanical and electrical design criteria that demonstrate the likelihood of compliance with applicable engineering LORS, and that staff believes are essential to ensuring that the project is designed in a manner that protects public health and safety.

The project shall be designed and constructed to the 2001 edition of the California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations), which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and other applicable codes and standards in effect at the time design and construction of the project actually commences. In the event the initial designs are submitted to the Chief Building Official (CBO) for review and approval when the successor to the 2001 CBSC is in effect, the 2001 CBSC provisions, identified herein, shall be replaced with the applicable successor provisions.

Certain structures in a power plant may be required, under the CBC, to undergo dynamic lateral force (structural) analysis; others may be designed using the simpler static analysis procedure. In order to ensure that structures are analyzed using the appropriate lateral force procedure, staff has included Condition of Certification **STRUC-1** (below), which in part, requires review and approval by the CBO of the project owner's proposed lateral force procedures prior to the start of construction.

PROJECT QUALITY PROCEDURES

The AFC (TID 2002a, § 2.4.5) describes a project Quality Program that will be used to ensure that systems and components will be designed, fabricated, stored, transported, installed and tested in accordance with the technical codes and standards appropriate for a power plant. Compliance with design requirements will be verified through an appropriate program of inspections and audits. Employment of this quality assurance/quality control (QA/QC) program would ensure that the project is actually designed, procured, fabricated, and installed as contemplated in this analysis.

COMPLIANCE MONITORING

Under Section 104.2 of the CBC, the CBO is authorized and directed to enforce all the provisions of the CBC. For all energy facilities certified by the Energy Commission, the Energy Commission is the CBO and has the responsibility to enforce the code. In addition, the Energy Commission has the power to render interpretations of the CBC and to adopt and enforce rules and supplemental regulations to clarify the application of the CBC's provisions.

The Energy Commission's design review and construction inspection process is developed to conform to CBC requirements and to ensure that all facility design Conditions of Certification are met. As provided by Section 104.2.2 of the CBC, the Energy Commission appoints experts to carry out the design review and construction inspections and act as delegate CBO on behalf of the Energy Commission. These delegates typically include the local building official and/or independent consultants

hired to cover technical expertise not provided by the local official. The applicant, through permit fees as provided by CBC Sections 107.2 and 107.3, pays the costs of the reviews and inspections. While building permits in addition to the Energy Commission certification are not required for this project, in lieu permit fees are paid by the applicant consistent with CBC Section 107, to cover the costs of reviews and inspections.

Engineering and compliance staff will invite TID, a public utility, to act as CBO for the project. Energy Commission staff will complete a Memorandum of Understanding (MOU) with TID that outlines its roles and responsibilities and those of its subcontractors and delegates.

Staff has developed proposed Conditions of Certification to ensure public health and safety and compliance with engineering design LORS. Some of these conditions address the roles, responsibilities and qualifications of the applicant's engineers responsible for the design and construction of the project (proposed Conditions of Certification **GEN-1** through **GEN-8**). Engineers responsible for the design of the civil, structural, mechanical and electrical portions of the project are required to be registered in California, and to sign and stamp each submittal of design plans, calculations and specifications submitted to the CBO. These conditions require that no element of construction subject to CBO review and approval shall proceed without prior approval from the CBO. They also require that qualified special inspectors be assigned to perform or oversee special inspections required by the applicable LORS.

While the Energy Commission and delegate CBO have the authority to allow some flexibility in scheduling construction activities, these conditions are written to require that no element of construction of permanent facilities subject to CBO review and approval, which would be difficult to reverse or correct, may proceed without prior approval of plans by the CBO. Those elements of construction that are not difficult to reverse are allowed to proceed without approval of the plans. The applicant shall bear the responsibility to fully modify those elements of construction to comply with all design changes that result from the CBO's subsequent plan review and approval process.

FACILITY CLOSURE

The removal of a facility from service, or decommissioning, as a result of the project reaching the end of its useful life, may range from "mothballing" to removal of all equipment and appurtenant facilities and restoration of the site. Future conditions that may affect the decommissioning decision are largely unknown at this time.

In order to assure that decommissioning of the facility will be completed in a manner that is environmentally sound, safe and will protect public health and safety, the applicant shall submit a decommissioning plan to the Energy Commission for review and approval prior to the commencement of decommissioning. The plan shall include a discussion of:

- proposed decommissioning activities for the project and all appurtenant facilities constructed as part of the project;

- all applicable LORS, local/regional plans and the conformance of the proposed decommissioning activities to the applicable LORS and local/regional plans;
- the activities necessary to restore the site if the plan requires removal of all equipment and appurtenant facilities; and
- decommissioning alternatives, other than complete site restoration.

The above requirements should serve as adequate protection, even in the unlikely event of project abandonment. Staff has proposed general conditions (see **General Conditions**) to ensure that these measures are included in the Facility Closure plan.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. The laws, ordinances, regulations and standards (LORS) identified in the AFC and supporting documents are those applicable to the project.
2. Staff has evaluated the proposed engineering LORS, design criteria and design methods in the record, and concludes that the design, construction and eventual closure of the project are likely to comply with applicable engineering LORS.
3. The Conditions of Certification proposed will ensure that the proposed facilities are designed and constructed in accordance with applicable engineering LORS. This will occur through the use of design review, plan checking and field inspections, which are to be performed by the CBO or other Energy Commission delegate. Staff will audit the CBO to ensure satisfactory performance.
4. Whereas future conditions that may affect decommissioning are largely unknown at this time, it can reasonably be concluded that if the project owner submits a decommissioning plan as required in the **General Conditions** portion of this document prior to the commencement of decommissioning, the decommissioning procedure is likely to occur in compliance with all applicable engineering LORS.

RECOMMENDATIONS

Energy Commission staff recommends that:

1. The Conditions of Certification proposed herein be adopted to ensure that the project is designed and constructed to assure public health and safety, and to ensure compliance with all applicable engineering LORS;
2. The project be designed and built to the 2001 CBSC (or successor standard, if such is in effect when the initial project engineering designs are submitted for review); and
3. The CBO shall review the final designs, conduct plan checking and perform field inspections during construction. Energy Commission staff shall audit and monitor the CBO to ensure satisfactory performance.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct and inspect the project in accordance with the 2001 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations), which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval. (The CBSC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously.) All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

In the event that the initial engineering designs are submitted to the CBO when a successor to the 2001 CBSC is in effect, the 2001 CBSC provisions identified herein shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

Within 30 days after receipt of the Certificate of Occupancy, the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [2001 CBC, Section 109 – Certificate of Occupancy].

GEN-2 Prior to submittal of the initial engineering designs for CBO review, the project owner shall furnish to the CPM and to the CBO a schedule of facility design submittals, a Master Drawing List and a Master Specifications List. The schedule shall contain a list of proposed submittal packages of designs, calculations and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM when requested.

At least ~~60~~ 30 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the Master Drawing List and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 1** below. Major structures and equipment shall be added to or deleted

from the table only with CPM approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Table 1: Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	2
Combustion Turbine Generator Foundation and Connections	2
Steam Turbine (ST) Foundation and Connections	1
Steam Turbine Generator Foundation and Connections	1
Heat Recovery Steam Generator (HRSG) Structure, Foundation and Connections	2
HRSG Stack Structure, Foundation and Connections	2
CT Air Inlet System Structure, Foundation and Connections	2
CT Main Transformer Foundation and Connections	2
ST Main Transformer Foundation and Connections	1
Unit Auxiliary Transformer Foundation and Connections	3
Generator Breakers Foundation and Connections	3
Water Treatment Building Structure, Foundation and Connections	1
Warehouse/Maintenance Building Structure, Foundation and Connections	1
Administration/Control Room Building Structure, Foundation and Connections	1
Power Distribution Center Structure, Foundation and Connections	1
Auxiliary Cooling Water Pumps Foundation and Connections	2
Circulating Water Pumps Foundation and Connections	2
Boiler Feed Pumps Foundation and Connections	2
Cooling Tower Structure, Foundation and Connections	1
Cooling Tower Electrical Building Structure, Foundation and Connections	1
Cooling Tower Chemical Feed Foundation and Connections	1
Service/Fire Water Storage Tank Structure, Foundation and Connections	1
Demineralized Water Storage Tank Structure, Foundation and Connections	1
Ammonia Storage Tank Foundation and Connections	1
Switchyard Control Building Structure, Foundation and Connections	1
HRSG Blowdown Tank Structure, Foundation and Connections	2
Fuel Gas Compressor Foundation and Connections	1
Water Wash Skid Foundation and Connections	4
Water Wash Sump Area Foundation and Connections	2
Ammonia Injection Skid Foundation and Connections	2
Oil/Water Separator Foundation and Connections	1
Zero Liquid Discharge System Structure, Foundation and Connections	1
Condenser and Auxiliaries Foundation and Connections	1
Air Compressor Foundation and Connections	1

Equipment/System	Quantity (Plant)
Auxiliary Transformer Foundation and Connections	2
Fire Pump Skid Foundation and Connections	1
Recycled Water Storage Tank Structure, Foundation and Connections	1
Condensate Pumps Foundation and Connections	3
Blowdown Storage Tank Structure, Foundation and Connections	1
Fire Protection System	1
Continuous Emissions Monitoring Systems Structure, Foundation and Connections	1
Potable Water Systems	1 Lot
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping	1 Lot
HVAC and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Substation/Switchyard, Buses and Towers	1 Lot
Electrical Duct Banks	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2001 CBC [Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees], adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be as otherwise agreed by the project owner and the CBO.

The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities)]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated

responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

The RE shall:

1. Monitor construction progress of work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all the facilities subject to CBO design review and inspection conforms in every material respect to the applicable LORS, these Conditions of Certification, approved plans, and specifications;
3. Prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;
4. Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

The RE shall have the authority to halt construction and to require changes or remedial work, if the work does not conform to applicable requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the resume and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

If the RE or the delegated engineer(s) are subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: A) a civil engineer; and B) a soils engineer, or a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; ~~and C) an engineering geologist.~~ Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: ~~D~~C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; ~~E~~D) a mechanical engineer; and ~~F~~E) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

The tasks performed by the civil, mechanical, electrical or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all responsible engineers assigned to the project [2001 CBC, Section 104.2, Powers and Duties of Building Official].

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

A. The civil engineer shall:

1. Review the Foundation Investigations Report, Geotechnical Report or Soils Report ~~prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;~~
2. Design, or be responsible for design, stamp, and sign all plans, calculations and specifications for proposed site work, civil works and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and

3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes in the construction procedures.
- B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:
1. Review all the engineering geology reports;
 2. Prepare or provide the Foundation Investigations Report, Geotechnical Report or Soils Report containing field exploration reports, laboratory tests and engineering analysis detailing the nature and extent of the soils that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load [2001 CBC, Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations];
 3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2001 CBC, Appendix Chapter 33; Section 3317, Grading Inspections (~~depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both~~); and
 4. Recommend field changes to the civil engineer and RE; and
 5. Prepare final soils grading report.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations [2001 CBC, section 104.2.4, Stop orders].

~~C. The engineering geologist shall:~~

- ~~1. Review all the engineering geology reports and prepare final soils grading report; and~~
- ~~2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2001 CBC, Appendix Chapter 33; Section 3317, Grading Inspections (depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both).~~

DC. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;
2. Provide consultation to the RE during design and construction of the project;
3. Monitor construction progress to ensure compliance with engineering LORS;

4. Evaluate and recommend necessary changes in design; and
5. Prepare and sign all major building plans, specifications and calculations.

ED. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and calculations conform with all of the mechanical engineering design requirements set forth in the Energy Commission's Decision.

FE. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and
2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible civil engineer, and soils (geotechnical) engineer ~~and engineering geologist~~ assigned to the project.

At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of construction, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer and electrical engineer assigned to the project.

The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within five days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2001 CBC, Chapter 17 [Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection)]; and Section 106.3.5, Inspection and observation program. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;

2. Observe the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action [2001 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]; and
4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable provisions of the applicable edition of the CBC.

A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

At least 15 days (or project owner and CBO approved alternative timeframe) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend the corrective action required [2001 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next Monthly Compliance Report. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. When the work and the "as-built" and "as-graded" plans conform to the approved final plans, the project owner shall notify the CPM regarding the CBO's final approval. The marked up "as-built" drawings for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the "as-built" drawings [2001 CBC, Section 108, Inspections]. The project owner shall retain one set of approved engineering plans, specifications and calculations at the project site or at another accessible location during the operating life of the project [2001 CBC, Section 106.4.2, Retention of Plans].

Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next Monthly Compliance Report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing final approved engineering plans, specifications and calculations as described above, the project owner shall submit to the CPM a letter stating that the above documents have been stored and indicate the storage location of such documents.

CIVIL-1 The project owner shall submit to the CBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils Report, Geotechnical Report or Foundation Investigations Report required by the 2001 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations].

At least 15 days (or project owner and CBO approved alternative timeframe) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. In the next Monthly Compliance Report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications and calculations to the CBO based on these new conditions. The project owner shall

obtain approval from the CBO before resuming earthwork and construction in the affected area [2001 CBC, Section 104.2.4, Stop orders].

The project owner shall notify the CPM within 24 hours, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 2001 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and Periodic Special Inspection; and Appendix Chapter 33, Section 3317, Grading Inspection. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO and the CPM [2001 CBC, Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a Non-Conformance Report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs, for the reporting month, shall also be included in the following Monthly Compliance Report.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage facilities, the project owner shall obtain the CBO's approval of the final "as-built" grading plans for the erosion and sedimentation control facilities. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans [2001 CBC, Section 3318, Completion of Work].

Within 30 days (or project owner and CBO approved alternative timeframe) of the completion of the erosion and sediment control mitigation and drainage facilities, the project owner shall submit to the CBO the final as-built grading plans and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes, with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next Monthly Compliance Report.

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 1**, above):

1. Major project structures;
2. Major foundations, equipment supports and anchorage;
3. Large field fabricated tanks;
4. Turbine/generator pedestal; and
5. Switchyard structures.

Construction of any structure or component shall not commence until the CBO has approved the lateral force procedures to be employed in designing that structure or component.

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations and specifications [2001 CBC, Section 108.4, Approval Required];
3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [2001 CBC, Section 106.4.2, Retention of plans; and Section 106.3.2, Submittal documents];
4. Ensure that the final plans, calculations and specifications clearly reflect the inclusion of approved criteria, assumptions and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer [2001 CBC, Section 106.3.4, Architect or Engineer of Record]; and
5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to the applicable LORS [2001 CBC, Section 106.3.4, Architect or Engineer of Record].

At least ~~60~~ 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 1** of Condition of Certification **GEN-2** above, the project owner

shall submit to the CBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM, in the next Monthly Compliance Report a copy of a statement from the CBO that the proposed structural plans, specifications and calculations have been approved and are in conformance with the requirements set forth in the applicable engineering LORS.

STRUC-2 The project owner shall submit to the CBO the required number of sets of the following documents related to work that has undergone CBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2001 CBC, Chapter 17, Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection); Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM [2001 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action to obtain CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2001 CBC, Chapter 1, Section 106.3.2, Submittal documents and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and

supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.

On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the Monthly Compliance Report, when the CBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 2001 CBC shall, at a minimum, be designed to comply with the requirements of this Chapter.

At least 30 days (or project owner and CBO approved alternate timeframe) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the CBO approvals of plan checks to the CPM in the following Monthly Compliance Report. The project owner shall also transmit a copy of the CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **Facility Design Table 1**, Condition of Certification **GEN-2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of said construction [2001 CBC, Section 106.3.2, Submittal Documents; Section 108.3, Inspection Requests; Section 108.4, Approval Required; 2001 California Plumbing Code, Section 103.5.4, Inspection Request; Section 301.1.1, Approval].

The responsible mechanical engineer shall stamp and sign all plans, drawings and calculations for the major piping and plumbing systems subject to the CBO design review and approval, and submit a signed statement to the CBO when the said proposed piping and plumbing systems have been designed, fabricated and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [Section 106.3.4, Architect or Engineer of Record], which may include, but not be limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);

- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code, for potable water and sanitary sewer piping);
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Specific City/County code.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency [2001 CBC, Section 104.2.2, Deputies].

At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 1**, Condition of Certification **GEN-2** above, the project owner shall submit to the CBO for design review and approval the final plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

The project owner shall transmit to the CPM, in the Monthly Compliance Report following completion of any inspection, a copy of the transmittal letter conveying the CBO's inspection approvals.

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by the applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of said installation [2001 CBC, Section 108.3, Inspection Requests].

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and
2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications and calculations conform to all

of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval, the above listed documents, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

The project owner shall transmit to the CPM, in the Monthly Compliance Report following completion of any inspection, a copy of the transmittal letter conveying the CBO's and/or Cal-OSHA inspection approvals.

MECH-3 The project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations and quality control procedures for any heating, ventilating, air conditioning (HVAC) or refrigeration system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of said construction. The final plans, specifications and calculations shall include approved criteria, assumptions and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS [2001 CBC, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record].

At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1 Prior to the start of any increment of electrical construction for electrical equipment and systems 480 volts and higher, listed below, with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations [CBC 2001, Section 106.3.2, Submittal documents]. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [2001 CBC,

Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

- A. Final plant design plans to include:
 - 1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems; and
 - 2. system grounding drawings.

- B. Final plant calculations to establish:
 - 1. short-circuit ratings of plant equipment;
 - 2. ampacity of feeder cables;
 - 3. voltage drop in feeder cables;
 - 4. system grounding requirements;
 - 5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
 - 6. system grounding requirements; and
 - 7. lighting energy calculations.

- C. The following activities shall be reported to the CPM in the Monthly Compliance Report:
 - 1. Receipt or delay of major electrical equipment;
 - 2. Testing or energization of major electrical equipment; and
 - 3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

REFERENCES

TID (Turlock Irrigation District). 2002a. Application for Certification, Walnut Energy Center (02-AFC-4). Submitted to the California Energy Commission, November 19, 2002.

**DECLARATION OF
Eileen Allen**

I, Eileen Allen, declare as follows:

1. I am presently employed by the California Energy Commission in the Land Use & Traffic Transportation Unit of the Systems Assessment and Facilities Siting Division as a Supervisor and Senior Planner.
2. I helped prepare the staff testimony on Traffic & Transportation, for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I also helped prepare the staff testimony on Traffic & Transportation for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony on Traffic & Transportation contained in the FSA Addendum is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 9/17/03

Signed: Eileen Allen

At: Sacramento, CA

**DECLARATION OF
STEVE BAKER**

I, **STEVE BAKER** declare as follows:

1. I am presently employed by the California Energy Commission in the **ENGINEERING OFFICE** of the Systems Assessment and Facilities Siting Division as a **SENIOR MECHANICAL ENGINEER**.
2. I prepared the staff testimony on **NOISE AND VIBRATION** for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I also prepared the staff testimony on **NOISE AND VIBRATION** for the **WALNUT IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony on **NOISE AND VIBRATION** contained in the FSA Addendum is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 9/16/03

Signed: 

At: Sacramento, California

**DECLARATION OF
MELINDA DORIN**

I, **MELINDA DORIN** declare as follows:

1. I am presently employed by the California Energy Commission in the **BIOLOGICAL RESOURCES UNIT** of the Systems Assessment and Facilities Siting Division as a **BIOLOGIST**.

2. I prepared the staff testimony on **BIOLOGICAL RESOURCES**, for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.

3. I also prepared the staff testimony on **BIOLOGICAL RESOURCES** for the **WALNUT IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.

4. It is my professional opinion that the prepared testimony on **BIOLOGICAL RESOURCES** contained in the FSA Addendum is valid and accurate with respect to the issue addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated:

Melinda Dorin

Signed:

9/16/2003

At:

Sacramento, California

**DECLARATION OF
SHAHAB KHOSHMAHRAB, AL MCCUEN and STEVE BAKER**

We, **Shahab Khoshmashrab, Al McCuen and Steve Baker**, declare as follows:

1. We are presently employed by the California Energy Commission in the **ENGINEERING OFFICE** of the Systems Assessment and Facilities Siting Division as a **Mechanical Engineer** (Mr. Khoshmashrab), a **Senior Electrical Engineer** (Mr. McCuen), and a **Senior Mechanical Engineer** (Mr. Baker).
2. We prepared the staff testimony on **FACILITY DESIGN** for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on our independent analysis of the Application for Certification and supplements thereto, data from reliable documents and sources, and our professional experience and knowledge. This testimony and a copy of our professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. We also prepared the staff testimony on **FACILITY DESIGN** for the **WALNUT IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is our professional opinion that the prepared testimony on **FACILITY DESIGN** contained in the FSA Addendum is valid and accurate with respect to the issues addressed therein.
5. We are personally familiar with the facts and conclusions related in the testimony and if called as witnesses could testify competently thereto.

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

Dated: 9/16/03

Signed: *Sh. Khoshmashrab*

Dated: 9/17/03

Signed: *Al McCuen*

Dated: 9/16/03

Signed: *Steve Baker*

At: Sacramento, California

**DECLARATION OF
MARK R. HAMBLIN**

I, **MARK R. HAMBLIN** declare as follows:

1. I am presently employed by the California Energy Commission in the Land Use and Traffic & Transportation Unit of the Systems Assessment and Facilities Siting Division as a Planner II.
2. I co-prepared with Eileen Allen, Planner III, the staff testimony on **TRAFFIC AND TRANSPORTATION**, for **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I prepared the staff testimony on **TRAFFIC AND TRANSPORTATION** for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated:

Sept. 17, 2003

Signed:

Mark R. Hamblin

At:

Sacramento, California

**DECLARATION OF
Eric Knight**

I, **Eric Knight**, declare as follows:

1. I am presently employed by the California Energy Commission in the **Environmental Protection Office** of the Systems Assessment and Facilities Siting Division of as a **Planner II**.
2. I prepared the staff testimony on **Visual Resources**, for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I also prepared the staff testimony on **Visual Resources** for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony on **Visual Resources** contained in the FSA Addendum is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 9-17-03

Signed: _____



At: Sacramento, CA

**DECLARATION OF
Geoffrey Lesh, P.E.**

I, **Geoffrey Lesh**, declare as follows:

1. I am presently employed by the California Energy Commission in the **Engineering Office** of the Systems Assessment and Facilities Siting Division as a **Mechanical Engineer**.
2. I prepared the staff testimony on **Hazardous Materials Management** for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I also prepared the staff testimony on **Hazardous Materials Management** for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony on **Hazardous Materials Management** contained in the FSA Addendum is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: Sept 18, 2003

Signed: Geoffrey Lesh

At: Sacramento, CA

**DECLARATION OF
Dr. Obed Odoemelam**

I, Obed Odoemelam, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Systems Assessment and Facilities Siting Division of as a Staff Toxicologist.
2. I prepared the staff testimony on Transmission Line Safety and Nuisance, for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I also prepared the staff testimony on Transmission Line Safety and Nuisance for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony on Transmission Line Safety and Nuisance contained in the FSA Addendum is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 9/17/03 Signed: Odoemelam

At: Sacramento CA

**DECLARATION OF
Dr. Obed Odoemelam**

I, Obed Odoemelam, declare as follows:

1. I am presently employed by the California Energy Commission in the Environmental Protection Office of the Systems Assessment and Facilities Siting Division of as a Staff Toxicologist.
2. I prepared the staff testimony on Public Health, for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I also prepared the staff testimony on Transmission Line Safety and Nuisance for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony on Public Health contained in the FSA Addendum is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 9/17/03 Signed: Odoemelam

At: Sacramento CA

DECLARATION OF

Rick Tyler

I, Rick Tyler, declare as follows:

1. I am presently employed by the California Energy Commission in the Engineering Office of the Systems Assessment and Facilities Siting Division of as a Senior Mechanical Engineer.
2. prepared the staff testimony on Hazardous Materials Management and Worker Safety / Fire Protection, for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge. This testimony and a copy of my professional qualifications and experience are found in the Final Staff Assessment (FSA) for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER**, Part 1, filed June 16, 2003.
3. I also prepared the staff testimony on Hazardous Materials Management and Worker Safety / Fire Protection for the **TURLOCK IRRIGATION DISTRICT'S** proposed **WALNUT ENERGY CENTER** contained in the FSA Addendum, filed September 22, 2003.
4. It is my professional opinion that the prepared testimony on **YOUR SUBJECT AREA HERE** contained in the FSA Addendum is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 9/18/03

Signed: 

At: Sacramento, Ca