

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Consumer Protection and Safety Division
Electric Generation Performance Branch

San Francisco, California
Date: August 24, 2006
Resolution EGPB-1

RESOLUTION

**RESOLUTION GRANTING APPROVAL OF THE
FINAL REPORT ON THE AUDIT OF THE AES
HUNTINGTON BEACH POWER PLANT
PERFORMED BY THE ELECTRIC GENERATION
PERFORMANCE BRANCH OF THE CONSUMER
PROTECTION AND SAFETY DIVISION, AND
AUTHORIZING PUBLIC DISCLOSURE OF THE
FINAL AUDIT REPORT**

SUMMARY

This Resolution grants the request of the Consumer Protection and Safety Division (“CPSD” or “staff”) for approval of the Electric Generation Performance Branch’s (EGPB) Final Report on the Audit of the AES Huntington Beach Power Plant (“AESHB” or “the Plant”) dated March 31, 2006, (“Final Audit Report”). This Resolution also authorizes disclosure of the redacted Final Audit Report to the public.

BACKGROUND

General Order 167, “Enforcement of Maintenance and Operation Standards for Electric Generating Facilities” (effective September 2, 2005) sets forth maintenance, operation, and logbook standards for electric generating facilities in California (referred to as “Generating Asset Owners” or “GAOs” in the General Order.) General Order 167 was adopted in response to legislation enacted by the California Legislature in 2002, codified in Public Utilities Code 761.3, which requires the Commission to “implement and enforce standards ... for the maintenance and operation of facilities for the generation of electric energy” in California. Section 11.1 of General Order 167 notifies GAOs subject

to the General Order that regular and systematic audits will be conducted in order to ensure compliance with General Order 167.¹

The AESHB audit is the first of the audits conducted by CPSD for compliance with General Order 167. Going forward, CPSD intends to perform approximately two to four audits per year. The Final Audit Report is the result of an iterative process between staff and the plant, including the review of data requests, a one-week on-site, issuance of the preliminary audit report, review and receipt of the plant's response and Corrective Action Plan, a meet and confer period, and the issuance of a semi-final report reflecting corrective actions (if any) taken by the plant. CPSD intends to issue a final and public version of all the final audit reports at the conclusion of each of the plant audits, detailing its findings and recommendations, and requesting Commission approval.

Section 15.4 of General Order 167 allows GAOs to request confidential treatment of information by indicating the specific law or statutory privilege prohibiting disclosure. AESHB requested that the Final Audit Report and related materials be treated confidentially by letter on August 22, 2005. CPSD staff agreed to treat the audit materials confidentially, until such time as the full Commission authorizes public disclosure.

DISCUSSION

1. Final Audit Report Findings and Recommendations

Starting in August 2004, the CSPD audit team visited AES Huntington Beach, L.L.C. power plant to determine compliance with logbook standards and maintenance standards in General Order 167. The methods used to conduct the audit included:

- Review of plant performance,
- Preparation of detailed data requests,
- A site from October 18 through 22, 2004; including
- Discussions with plant management,
- Reviews of procedures and records,
- Observations of operations and maintenance activities,
- Interview with rank and file employees, and
- Inspections of equipment and infrastructure.

¹ See also, D.04-05-018, pp. 15-16; additional detail on audit procedures is found in the "Maintenance Standards for Generators with Suggested Implementation and Enforcement Model, Section 3, Verification and Audit Process", Appendix C to D.04-05-018.

The audit focused on standards for safety, training, recordkeeping, and preventive and predictive maintenance, including care of tools, spare parts and plant chemistry. A full description of the audit, including the procedure, findings, recommendations and conclusions is contained in the Final Audit Report attached as Appendix A to the Final Resolution.²

CPSD's Preliminary Audit Report, which was provided to AESHB on January 12, 2005, identified potential violations of the Maintenance Standards, and recommended corrective actions be taken by the plant. On February 24, 2005, AESHB submitted a Corrective Action Plan to CPSD in response to the Preliminary Audit Report. CPSD and AESHB next held a meet-and-confer meeting on April 14, 2005. On August 3, 2005, CPSD auditors held a final conference call to discuss the draft Final Audit Report with AESHB. CPSD subsequently revised the draft Final Audit Report based on additional information provided during the conference call.

The Final Audit Report details staff's preliminary findings and recommendations, the corrective actions taken by the Plant to date, and includes the final outcome and needed follow-up action recommended by CPSD staff. In some instances, CPSD has requested that AESHB provide CPSD with quarterly progress reports in order to monitor the plant's activities; in others, CPSD has requested notification of completion of certain corrective actions proposed by the Plant.

The results of CPSD's audit indicate that the continued implementation of the proposed corrective actions will adequately address all of the findings in the Final Audit Report. CPSD found no need for formal enforcement action based on the audit findings. CPSD does, however, request that the Commission order AESHB to (1) continue to provide quarterly progress reports on items (a) through (c); and (2) notify CPSD of the completion of items (a) through (d); all of these items are listed in the section of the Final Audit Report entitled "Executive Summary and Audit Conclusions."

We hereby grant CPSD's request for approval of the Final Audit Report. CPSD's General Order 167 audits provide a comprehensive assessment of the Plant's efforts to comply with General Order 167. Our approval of the findings and recommendations in the final audit reports will give CPSD's recommendations the force of law, assuring that generators continue implementing the corrective action measures identified in the final audit report and provide progress or status reports as requested by CPSD.

² The Public Version of the Draft Resolution does not include Appendix A, as the Final Report is subject to a pending request for confidential treatment under section 15.4 of General Order 167. Appendix A is attached to the Confidential/Non-Public Version of the Draft Resolution, and will be attached to the Final Resolution if disclosure is authorized and the Final Report approved by the Commission.

2. Public Disclosure of the Final Audit Report

By correspondence dated August 12, 2005, AESHB requested that the Draft Final Audit Report, AESHB's response, and the Final Audit Report ("Audit Materials") not be disclosed to the public.³ As required by General Order 167, section 15.4.1, AESHB's request sets forth the legal reasons supporting its claim of confidentiality, which we discuss further, below.

CPSD responded to AESHB's confidentiality request on August 22, 2005.⁴ CPSD staff agreed to treat the Audit Materials as provisionally confidential, noting that staff's agreement is not a final determination of the confidentiality of the Audit Materials and is not binding on the Commission. CPSD also stated in its response that it intended to ultimately seek a Commission resolution authorizing disclosure of the Audit Materials once the audit report was finalized. CPSD seeks only to make the Final Audit Report public by this Resolution, and not the draft report or related materials. We now consider AESHB's confidentiality request.

a) Relationship of General Order 66-C and General Order 167.

First, AESHB argues that under General Order 66-C, "records of investigations and audits" are not open to public inspection, "except to the extent disclosed at a hearing or by formal Commission action." (General Order 66-C, § 2.2(a).) Since the Audit Materials are records of an audit under General Order 66-C, these documents should not be publicly disclosed unless and until the Commission takes formal action to make all or a portion of the Audit Materials public.

As AESHB acknowledges, General Order 66-C provides only an initial bar to public access. It does not limit our ability to order the release of the Audit Materials, even if excluded from the definition of public records in General Order 66-C. The Commission can authorize disclosure of such records through formal action, such as this Resolution.

We take this opportunity to address the relationship between General Order 66-C and General Order 167. We do not believe that General Order 167 is contrary to General Order 66-C. However, Section 15.4 of General Order 167 departs from General Order

³ The letter from Brian T. Cragg, Goodin, Macbride, Squeri, Ritchie & Day, Counsel for AESHB to Randy Wu, General Counsel, Legal Division, CPUC dated August 12, 2005, requested confidential treatment of the "draft (preliminary) Final Audit Report, AESHB's response to the draft Final Audit Report, and the Final Audit Report." A subsequent letter dated August 22, 2005, requested confidential treatment of AESHB's response to CPSD's October 24, 2005 data request related to the HB audit.

⁴ Letter from Charlyn Hook, Staff Counsel for CPSD, to Brian T. Cragg, dated August 22, 2005.

66-C by placing the burden of proof on the GAO to establish the legal basis for confidentiality treatment. (General Order 167, § 15.4.1). In addition, General Order 167:

- Contains minimum requirements for establishing a confidentiality claim in section 15.4.3, and directs GAOs asserting a privilege or exemption involving a balancing of interests for and against disclosure to demonstrate why the public interest in an open process is clearly outweighed by the need to keep the material confidential (§ 15.4.2);
- Reminds utility-owned GAOs that Public Utilities Code section 583 does not create a privilege or designate any specific types of documents as confidential (§ 15.4.2), and
- Limits the duration of confidentiality claims to two years. (§ 15.4.4).

We believe the specific requirements in General Order 167, in addition to putting the burden on the GAO to justify its request, supersede the presumption of confidentiality for audit records in General Order 66-C.

We note that there has been a shift in Commission policy since General Order 66-C was adopted in the 1970's, whereby we have moved away from broad presumptions of confidentiality. For example, in D.06-01-047, we observed that Commission's "treatment of records disclosure has been evolving towards a policy that favors even more public disclosure."⁵ Further, the 2004 amendments to the California Constitution, which implicitly incorporated the principles of the Public Records Act (Gov't Code § 6250 et seq.), requires public agencies to broadly construe statutes and other authorities furthering public access, and to narrowly construe authority which limits the people's right to access. (Cal. Const., art. 1, § 3(b)(1)-(2)). This constitutional emphasis on governmental openness mirrors our own policy favoring increasing disclosure and transparency in decisionmaking, in the absence of a compelling and legally sound basis for keeping information from the public.

Most recently, in D.06-06-066, we observed that "in view of SB 1488's concerns about openness, GO 66-C may require revision."⁶ Like General Order 167, section 15.4, D.05-06-066 starts with the presumption that information should be publicly disclosed, and the

⁵D.06-01-047 (January 26, 2006) Order Modifying and Denying Rehearing of Decisions 04-05-017 and 04-05-018 (*Rulemaking to Implement the Provisions of Public Utilities Code § 761.3*), the proceeding which adopted General Order 167) p. 38.

⁶ D.06-06-066 (June 29, 2006) Interim Opinion Implementing Senate Bill No. 1488, Relating to Confidentiality of Electric Procurement Data Submitted to the Commission, p. 21, citing D.05-04-030.

proponent of non-disclosure has the burden of proving that the information is confidential, or that it fits within a pre-designated class of confidential information contained in a matrix established in the proceeding.)⁷

b) Official Information Privilege - (Evidence Code § 1040)

Second, AESHB asserts that the official information privilege, Evidence Code § 1040, protects “information acquired in confidence by a public employee in the course of his or her duty” if “there is a necessity for preserving the confidentiality of the information that outweighs the necessity for disclosure in the interest of justice.” AESHB acknowledges the public’s general right to information about Commission activities, but asserts that improved operation and maintenance practices and higher availability of plants resulting from the candid exchange of information together outweigh the public benefit in access to the Audit Materials.

AESHB’s argument can be summarized as follows: The Commission and the public are better served by the free and candid exchange of information, that can best occur in an environment where the plant need not worry about the possibility that the press or media will misconstrue, distort or sensationalize the very technical aspects of plant operations and maintenance. AESHB concludes that “The prospect that public disclosure and resulting misperceptions” will inhibit this frank and candid exchange, both in CPSD’s observations and in the plant’s response, resulting in a “chilling effect on these communications.”

We do not find this argument persuasive. AESHB is essentially maintaining that it will be more forthcoming in providing information to CSPD if it can be assured that the public will not have access to this information. This strikes us as contrary to the spirit and intent of the California Constitution and the Public Records Act, and not the type of “public benefit” the Commission wishes to endorse. The Commission has previously rejected similar arguments by utilities that the threat of public scorn might have a “chilling effect” on the substance and candor of information provided to the Commission, in particular, where there is a legal obligation to provide complete and accurate information, as there is here. (See, *Re San Diego Gas and Electric Company* [D.93-05-020] (1993) 49 CPUC 2d 241, 243.)

Article I, Section 3 of the California Constitution provides that “the people have the right of access to information concerning the conduct of the people’s business” and requires the “writings of public officials and agencies shall be open to public scrutiny.” (Cal. Const., art. 1, § 3(b)(1).) Moreover, decisions of public agencies that would limit the

⁷ D.06-06-066, pp. 2-3, 22-23; see also Appendix A, containing categories of presumptively confidential information.

public's right of access require us to make specific findings "demonstrating the interest protected by the limitation and the need for protecting that interest," and that any such limitation be narrowly construed. (Cal. Const., art. 1, § 3(b)(2).)

Similarly, the Public Records Act mandates that the public be given access to "information concerning the conduct of the people's business." (Gov't Code § 6250.) CPSD's General Order 167 audits are conducted to ensure compliance with General Order 167, which the Commission adopted to "implement and enforce standards for the maintenance and operation of electric generating facilities and power plants so as to maintain and protect the public health and safety of California residents and businesses, to ensure that electric generating facilities are effectively and appropriately maintained and efficiently operated, and to ensure electrical service reliability and adequacy." (General Order 167, § 1.0.) The Public Records Act requires that the public be given access to government records unless they fall within an express exemption, or the public interest in nondisclosure *clearly outweighs* the public interest in disclosure. (Gov't Code § 6255 (emphasis added).)

AESHB has not provided a compelling reason to withhold the Final Audit Report from the public. To the contrary, important public interests may well be served by disclosure of General Order 167 audit reports. These include the public's right to know that generating facilities providing the electric service it relies on are operated in conformance with regulatory requirements. In addition, the release of audit reports will increase awareness of safety issues and best practices within the generating community. Allowing public access to audit reports will provide an incentive to GAOs to maintain their plants in top condition, which may lead to increased reliability. Moreover, in enacting Public Utilities Code 761.3, the Legislature found that "electric generating facilities and powerplants in California are essential ... [to protect] the public health and safety of California residents and businesses," and that it is in the public interest to ensure that they are "appropriately maintained and efficiently operated."⁸

We conclude that AESHB has not met its burden of demonstrating that the public interest in nondisclosure clearly outweighs the public interest in disclosure of the Final Audit Report. Future audit reports conducted under General Order 167 will also be subject to public disclosure, unless it can be demonstrated that under the specific circumstances, the public interest in nondisclosure clearly outweighs the public interest in disclosure.

⁸ SB 39XX, Ch. 19, Section 1, approved April 25, 2002; filed April 25, 2002.

3. Trade Secret Privilege (Evidence Code § 1060 and Civil Code § 3426.1)

Third, AESHB asserts that the Trade Secret privilege (Evid. Code § 1060 and Civ. Code § 3426.1), protects certain information related to the plant's expected retirement date and chemical cleaning of boiler tubes.

The Trade Secret privilege extends to information that (1) derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; (2) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy, and (3) application of the privilege "will not tend to conceal fraud or otherwise work an injustice." (Civ. Code § 3426.1(d); Evid. Code § 1060.) These requirements are also set forth in General Order 167, section 15.4.3.4.

AESBH argues that the plant's retirement date and chemical cleaning plans derives "independent economic value from not being generally known to the public, and could be used by competitors and potential purchasers of generation to distort competitive markets." AESHB asserts that it has maintained the confidentiality of this information, but does not explain why the allowance of the privilege will not otherwise conceal fraud or work an injustice.

As we stated in D.06-01-047, we are aware of the need to protect trade secrets and sensitive commercial information which we receive from GAOs pursuant to our authority in General Order 167.⁹ We acknowledge that there are certain aspects of plant maintenance and operations which, if publicly disclosed, may be advantageous to competitors. We anticipate that this could be the case with respect to the timing of plant closures, either for planned maintenance, or possibly longer periods of time. However, we need not reach this issue today. The Final Audit Report merely references that chemical cleaning is a possibility that will be considered by the plant sometime in 2006. We think this reference is not specific enough to constitute a Trade Secret. In addition, the Final Audit Report no longer makes reference to any plans for closure of the plant. Thus, this argument has been mooted by revisions to the Final Audit Report.

In light of our discussion above, the Final Audit Report should be made public. We will determine future requests for confidentiality of Trade Secret or commercially sensitive information on a case by case basis. In the future, CPSD, working with interested GAOs, may designate certain categories of information as "presumptively confidential," adopting a process similar to that proposed in R.05-06-040, where confidential categories

⁹ General Order 167 relies in part, on the Commission's authority derived from state law and 16 U.S.C. § 824(g). Section 824(g) authorizes State commissions to obtain books, accounts and records from wholesale generators, and requires State commissions not to publicly disclose trade secrets or sensitive commercial information.

of information have been determined, and an expedited procedure for determining confidentiality requests has been established. This may be done in a later proceeding, or by intervening in Phase II of R.05-06-040.

PROTESTS

CPSD's Preliminary Audit Report was provided to AESHB on January 12, 2005. The Preliminary Audit Report identified possible violations of the Maintenance Standards, and recommended corrective actions be taken by the plant. On February 24, 2005, AESHB submitted a Corrective Action Plan to CPSD in response to the Preliminary Audit Report.

CPSD and AESHB held a meet-and-confer meeting on April 14, 2005. On August 3, 2005, CPSD auditors held final courtesy conference call to discuss the draft Final Audit Report with AESHB. CPSD subsequently revised the draft Final Audit Report based on additional information provided during the meet and confer and conference call.

COMMENTS

The Draft Resolution of the Legal Division in this matter was mailed to the parties in interest on July 24, 2006, in accordance with Public Utilities Code § 311(g)(1) and Rule 77.7 of the Rules of Practice and Procedure.

The Commission received and reviewed timely comments filed by AESHB and the Generating Asset Owners Coalition on August 14, 2006.

In Comments, AESHB points out that nearly all of the 18 corrective actions listed on page three of the Final Audit Report have been completed, thus there is no need for the Commission to order these actions. We have confirmed this with CPSD Auditors, and the Final Audit Report and this Resolution have been changed to reflect that the 18 corrective actions were completed by AESHB.

As indicated in AESHB's Comments, AESHB has submitted a separate letter requesting that portions of the Final Audit Report discussing plant performance and maintenance activities be redacted on grounds that they are trade secret and/or commercially sensitive.¹⁰ This information is of a generalized and aggregated nature, and is over three years old. We are not persuaded that a competitor could predict future plant activity with any level of specificity, much less gain a competitive advantage based on this information. Although we do not adopt AESHB's request for redactions wholesale,

¹⁰ Letter from Brian T. Cragg to Randy Wu, General Counsel, dated August 14, 2006. As a rule, all similar confidentiality arguments should be included in publicly filed comments so that they may be discussed and addressed by parties in reply comments.

CPSD has redacted references in the public version of the Final Audit Report to specific plant availability measurements derived from AESHB's business plan, since the methods used to develop this information are unique to AESHB and not easily comparable to availability criteria used for other plants.

FINDINGS OF FACT

1. General Order 167, "Enforcement of Maintenance and Operation Standards for Electric Generating Facilities" (effective September 2, 2005) sets forth maintenance, operation, and logbook standards for electric generating facilities in California. Section 11.1 of General Order 167 notifies GAOs subject to the General Order that regular and systematic audits will be conducted in order to ensure compliance with General Order 167.

2. The Final Audit Report is the result of an iterative process between staff and the plant, including the review of data requests, a one-week on-site audit, issuance of the preliminary audit report, review and receipt of the plant's response and Corrective Action Plan, a meet and confer period, and the issuance of a semi-final report reflecting corrective actions (if any) taken by the plant.

3. As part of the audit process, the CPSD audit team visited AES Huntington Beach, L.L.C. power plant from October 18, 2004 through October 22, 2004, to determine compliance with logbook standards and maintenance standards in General Order 167.

4. CPSD intends to issue a final and public version of all the final audit reports at the conclusion of each of the plant audits, detailing its findings and recommendations, and requesting Commission approval.

5. Section 15.4 of General Order 167 allows GAOs to request confidential treatment of information by indicating the specific law or statutory privilege prohibiting disclosure. AESHB requested that the Final Audit Report and related materials be treated confidentially by letter on August 22, 2005. CPSD staff agreed to treat the audit materials confidentially, until such time as the full Commission authorizes public disclosure by letter of August 22, 2005.

6. CPSD's General Order 167 audits provide a comprehensive evaluation of the Plant's efforts to comply with General Order 167.

7. The results of CPSD's audit indicate that the continued implementation of the proposed corrective actions will adequately address all of the findings in the Preliminary Audit Report. There is no need for formal enforcement action based on the audit findings at this time.

CONCLUSIONS OF LAW

1. Our approval of the findings and recommendations in the final audit reports will give CPSD's recommendations the force of law, assuring that generators implement the corrective action measures identified in the Final Audit Report and provide progress or status reports as requested by CPSD.

2. General Order 66-C provides only an initial bar to public access. It does not limit our ability to order the release of the Audit Materials, even if excluded from the definition of public records in General Order 66-C.

3. General Order 167, section 15.4.1, places the burden of proof on the GAO to establish the legal basis for confidentiality treatment.

4. The specific requirements in General Order 167, in addition to putting the burden on the GAO to justify its request, supersede the presumption of confidentiality for audit records in General Order 66-C.

5. There has been a shift in the Commission's policy since General Order 66-C was adopted in the 1970's, moving away from broad presumptions of confidentiality. The Commission's treatment of records disclosure has evolved toward a policy that favors even more public disclosure.

6. Article I, section 3 of the California Constitution provides that "the people have the right of access to information concerning the conduct of the people's business" and requires the "writings of public officials and agencies shall be open to public scrutiny." (Cal. Const., art. 1, § 3(b)(1).) Decisions of public agencies limiting the public's right of access require us to make specific findings "demonstrating the interest protected by the limitation and the need for protecting that interest," and that any such limitation be narrowly construed. (Cal Const., art. 1, § 3(b)(2).)

7. The Public Records Act mandates that the public be given access to "information concerning the conduct of the people's business." (Gov't Code § 6250.) CPSD's General Order 167 audits are conducted to ensure compliance with General Order 167, which the Commission adopted to "implement and enforce standards for the maintenance and operation of electric generating facilities and power plants so as to maintain and protect the public health and safety of California residents and businesses, to ensure that electric generating facilities are effectively and appropriately maintained and efficiently operated, and to ensure electrical service reliability and adequacy." (General Order 167, § 1.0.) The PRA requires that the public be given access to government records unless they fall within an express exemption, or the public interest in nondisclosure clearly outweighs the public interest in disclosure. (Gov't Code § 6255.)

8. AESHB has not provided a compelling reason to withhold the Final Audit Report from the public. To the contrary, important public interests are served by disclosure of General Order 167 audit reports.

9. The Trade Secret privilege extends to information that (1) derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; (2) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy, and (3) application of the privilege “will not tend to conceal fraud or otherwise work an injustice.” (Civ. Code § 3426.1(d); Evid. Code 1060.)

10. The redacted Final Audit Report should be made available to the public.

ORDER

1. The Consumer Protection and Safety Division's request for disclosure of the redacted “Final Report on the Audit of the Huntington Beach Power Plant,” dated March 31, 2006, is granted.

2. AESHB is ordered to (1) continue to provide quarterly progress reports on items (a) through (c); and (2) notify CPSD of the completion of items (a) through (d); as specified in the Final Audit Report section entitled “Executive Summary and Audit Conclusions.”

3. This Resolution is effective today.

I certify that this resolution was adopted by the Public Utilities Commission at its regular meeting held on August 24, 2006. The following Commissioners voting favorably thereon:

/s/ STEVE LARSON

STEVE LARSON
Executive Director

MICHAEL R. PEEVEY
President
GEOFFREY F. BROWN
DIAN M. GRUENEICH
JOHN A. BOHN
RACHELLE B. CHONG
Commissioners

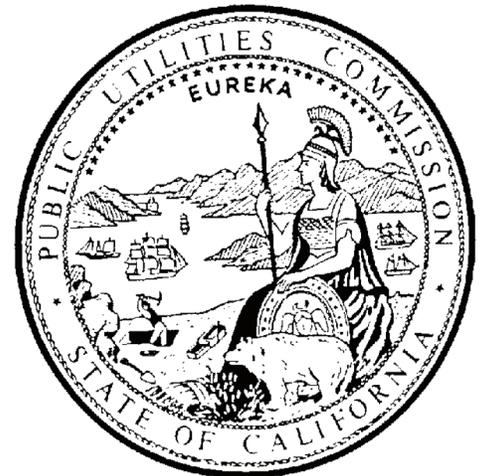
FINAL REPORT ON THE AUDIT OF THE AES HUNTINGTON BEACH POWER PLANT

**CONDUCTED UNDER GENERAL ORDER 167
TO DETERMINE COMPLIANCE WITH
MAINTENANCE AND LOGBOOK STANDARDS**

ELECTRIC GENERATION PERFORMANCE BRANCH
CONSUMER PROTECTION AND SAFETY DIVISION
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102

MARCH 31, 2006

FINAL REPORT
PUBLIC (REDACTED) VERSION



Richard W. Clark, Director
Consumer Protection and Safety Division

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APPENDIX 1 TABLE OF FINDINGS

EXECUTIVE SUMMARY AND AUDIT CONCLUSIONS

This is the Final Report from the audit of the AES Huntington Beach Generation Station (“AES Huntington Beach” or “the plant”) to determine compliance with Thermal Logbook Standards and Maintenance Standards pursuant to the requirements of the California Public Utilities Commission’s General Order 167. The audit process began in 2004. The Commission’s Consumer Protection and Safety Division (CPSD) auditors conducted a plant site visit from October 18-22, 2004. CPSD identified 29 preliminary report findings, including eight safety hazards requiring immediate corrective action and 21 other potential violations of maintenance standards, also requiring corrective action. These findings are detailed in Section 1 and Section 2 of this report. A summary table of these potential violations, prescribed corrective actions, and the outcomes and needed follow-up of corrective actions are included in Appendix 1 (“Table of Findings”). CPSD auditors worked closely with AES during the entire audit process, which continued through November 2005. CPSD and AES were able to resolve all the issues arising from these findings satisfactorily through corrective actions by the plant (which were verified by CPSD) or by progress reports on the few outstanding items. CPSD believes that there is no need at this time for the Commission to take formal enforcement action pursuant to this audit.

The methods used by CPSD to conduct the audit included discussions with AES Huntington Beach management; reviews of procedures and records; observations of operations and maintenance activities; interviews with rank and file employees; inspections of equipment and infrastructure; and review of prior plant outage inspection reports.

The audit process involved multiple steps. AES Huntington Beach was notified by CPSD in August 2004 that the plant would be audited for compliance with Maintenance and Thermal Logbook Standards beginning with a site visit in October 2004. (The audit did not examine compliance with Operation Standards, which were adopted in December 2004, and were therefore not in effect at the time of this audit.) In advance of the audit, CPSD staff requested documents and data pertinent to the audit. After reviewing the plant’s responses to these data requests, auditors from CPSD spent a week on the plant site, inspecting equipment, examining documents, and interviewing plant staff. Based on this audit, CPSD issued a Preliminary Audit Report, dated January 12, 2005, to which the plant responded on February 24, 2005. Since that time CPSD has met and conferred with the staff of AES Huntington Beach, asked for additional documentation, and consulted with experts in the field. CPSD now issues this Final Report.

During the audit, CPSD auditors identified potential violations of one or more Maintenance Standards, as described in this report. The violations listed in “Section 1” of this report are safety hazards and require immediate corrective action. The violations listed in “Section 2” of this report require corrective action as soon as reasonably possible. Major corrective actions (some in progress before the audit, some taken in response to the audit) include:

- a. Repair of hazardous, sagging insulation around the Unit 1 Hopper (Figures 1a and 1b).

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- b. Repair of disintegrating concrete on the turbine deck of units 3 and 4, which had fallen on pumping equipment and put the plant out-of-service.
- c. Clearance and maintenance of turbine deck drains.
- d. Repair of the ceiling in the staff's break room
- e. A new cover for an open, disused high-voltage electrical box.
- f. Reorganization of chemicals in the plant's lab, with proper labeling and the installation of proper cabinets.
- g. Implementation of a documented and systematic housekeeping procedure.
- h. Expansion of predictive maintenance activities, including vibration, oil, thermography, and inspections of high-energy piping.
- j. Designation of written maintenance procedures for many plant systems (the plant elected to use Original Equipment Manufacturers (OEM) manuals in many cases).
- k. Quarterly audits of spare parts and materials
- l. Tracking of the expiration dates of chemicals
- m. Implementation of a new return-to-service checklist, including the testing of components before they are placed into service.
- n. Replacement of missing bolts on heat exchangers for cooling water.
- o. Implementation of a program to assure regular calibration of instruments and tools.
- p. Preparation of a summary document for the plant's predictive maintenance plan to assure timely performance of all predictive maintenance tasks.
- q. Use of a preventive maintenance program for the continuous emissions monitoring system (CEMS).
- r. Elimination of most pools of standing water in the facility and use of improved warning signage for new pools that may occur.

In response to the Preliminary Audit Report and further discussions during the meet and confer period, AES Huntington Beach has voluntarily proposed, and in many cases completed, extensive corrective actions to comply with GO 167. This is despite the fact that, in many cases, the plant has disputed the CPSD findings and their characterization as violations. CPSD is satisfied that the proposed corrective actions adequately address every issue raised in the preliminary report. CPSD also requests the progress reports and items indicated below for corrective actions which have not been completed as of the time of this Final Report, and will follow up to ensure that the plant completes all proposed corrective actions. Some of the outstanding corrective actions require follow-up progress reports and monitoring, some of the items are indicated below. Details of all the corrective actions required are included in the report under the "Final Outcome and Follow-up" sections which follow the description of the corresponding potential violation.

CPSD staff requests that the plant provide quarterly progress reports on:

- a. Implementation of a new safety system beginning August 31, 2005, including more systematic inspections of the plant and its equipment by plant staff. (Preliminary Report Finding 2.1, 2.2).
- b. Installation of a new computerized maintenance management system in 2006. Installation of the new system should require review and correction of problems and

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discrepancies in the existing system (Preliminary Report Finding 2.12). The plant states that the new system will include the tracking of significant repairs recommended by predictive maintenance activities such as thermography reports (Preliminary Report Finding 2.13). CPSD requests quarterly progress reports on the implementation of this system, and will review the system operation when the implementation is complete.

- c. The development and documentation of a new preventive maintenance plan for station alarms. Based on an assessment of alarm priority, the plan will, for each alarm, specify the calibration process to be used and a regular schedule for those calibrations. (Preliminary Report Findings 1.8 and 2.9).

CPSD staff requests that the plant notify CPSD of the completion of the following items:

- a. The repairs to the envelope of the plant's office building, which was planned for completion by December 30, 2005 (Preliminary Report Finding 1.4).
- b. Results of boiler testing the plant will be conducted in 2006. The plant will be using these tests to determine if chemical cleaning of the plant's boilers is necessary (Preliminary Report Finding 2.8).
- c. Return to service of a disused main steam probe (Preliminary Report Finding 2.10).
- d. A review of alarm policy at a regularly scheduled operator's meeting (Preliminary Report Findings 1.8 and 2.9).

CPSD identified 29 preliminary findings (including eight which were safety hazards requiring immediate action), of which 20 items were corrected by the plant before the issue of this Final Report. Corrective actions, including monitoring to ensure continued compliance, have been established for the remaining 9 items.

CPSD notes that, since the audit, the plant has taken a number of steps that have significantly improved plant performance. In the year before the AES Huntington Beach audit, CPSD inspectors made 27 visits to the plant for forced outages or restrictions. In the year following the audit, CPSD inspectors made only 16 visits for forced outages or restrictions. A rough measure of improved plant performance is the decrease in the number of CPSD plant inspections, since CPSD generally inspects a plant during every forced or planned outage.¹ CPSD believes this is partially due to the plant correcting problems related to the re-powering of Units 3 and 4 in 2003, including some recommended boiler modifications.

¹ CPUC staff are currently developing and analyzing more exact measures of plant performance. First, the staff has requested availability data from the California Independent System Operator. Second, the staff is analyzing data from the Generating Availability Data System (GADS) database maintained by the North American Electric Reliability Council (NERC). Under Commission General Order 167, generators must submit GADS data to NERC and to authorize the release of that data to the Commission.

INTRODUCTION

Starting in August 2004, a team from the Consumer Protection and Safety Division (CPSD) conducted an audit of AES's Huntington Beach Power Plant to determine whether the plant was in compliance with General Order (GO) 167, which includes maintenance standards for power plants.² In part because of extensive discussions between Commission and plant staff, the audit extended into December of 2005. The audit targeted a wide range of items, including training, safety, preventive and predictive maintenance, care of tools, spare parts and plant chemistry. The audit covered all units at the plant.

CPSD provided the plant with advance notification of the audit, and worked with the plant to establish a convenient time frame for the plant site visit. CPSD sent a letter to AES Huntington Beach on August 24, 2004, informing the plant of CPSD's intent to conduct an audit, including a plant site visit from September 13, 2004 to September 17, 2004. At the request of AES Huntington Beach, CPSD postponed the plant site visit until the week of October 18, 2004. On September 14, 2004, CPSD sent AES Huntington Beach a request to make selected documents available for review by CPSD staff during the plant site visit.

The audit team visited the plant site from October 18, 2004 through October 22, 2004. Members of the team were Ben Brinkman, James Cheng, Steven Espinal, Winnie Ho, Alan Shinkman, and Rick Tse. During the inspection, CPSD auditors identified potential violations of one or more Maintenance Standards, as described in this report. The violations listed in "Section 1" of this report were safety hazards and required immediate corrective action. The violations listed in "Section 2" of this report required corrective action as soon as reasonably possible.

CPSD sought input from AES Huntington Beach on multiple occasions while preparing this Final Audit Report. CPSD sent a Preliminary Audit Report to AES Huntington Beach on January 12, 2005. On February 24, 2005, AES Huntington Beach presented the "Corrective Action Plan of AES Huntington Beach, LLC" (hereafter referred to as the "Corrective Action Plan") as a response to the preliminary audit report. CPSD and AES Huntington Beach staff held a meet-and-confer meeting on April 14, 2005. The purpose of the meeting was to discuss the Corrective Action Plan, to verify the completion of certain corrective actions, and to arrange for further follow-up activities. Attending this meeting for CPSD were Mark Ziering, Ben Brinkman, Alan Shinkman and Steven Espinal. A "Draft Final Report on the Audit of the AES Huntington Beach Power Plant" (hereafter referred to as the "Draft Final Report") was mailed to AES Huntington Beach on August 2, 2005. On August 3, 2005, CPSD auditors made a conference call to discuss the final audit report with AES Huntington Beach plant management. The AES Huntington Beach plant management responded with written comments entitled "Treatment of Final Audit Report for AES Huntington Beach, LLC" (hereafter referred to as "Treatment of Final Report") on August 12, 2005. In order to resolve some outstanding issues, the staff sent the plant a data request for generation curves and repair records on August 17, 2005. The plant responded to this data request on August 23, 2005. CPSD and AES Huntington Beach staff conducted several

² Staff did not audit for compliance with operation standards, which were adopted after the audit began.

meetings subsequent to these data requests, in order to resolve outstanding issues. CPSD sent AES Huntington Beach a letter on October 24, 2005, in order to resolve the four remaining issues prior to finalizing the Final Audit Report. CPSD and the plant were able to resolve these issues in a meeting on November 4, 2005. The plant sent CPSD a response on November 7, 2005 responding to the October 24, 2005 letter, and confirming the agreements from the November 4, 2005 meeting.

After a description of the plant and the plant's performance, this report discusses each potential violation in turn. For each, the report presents the text of the staff's Preliminary Report, followed by a summary of the plant's comments or replies, any applicable corrections or clarification, the outcome of corrective actions and needed follow-up.

PLANT DESCRIPTION AND PERFORMANCE

This section will present a general description of the capacity and performance of the plant. AES Huntington Beach is a 900 MW generating station, which consists of two 225 MW drum type steam generators (units 1 and 2), and two 225 MW once through, sub-critical boiler units (units 3 and 4).

Units 1 and 2 operate more reliably than units 3 and 4. According to the plant's January 2004 business plan, in 2003 units 1 and 2 had a Commercial Availability (CA) of [REDACTED] percent, compared to Commercial Availability of [REDACTED] percent for units 3 and 4.³ The Equivalent Forced Outage Factor (EFOF) is a measure of the percentage of time a unit is on Forced Outage or Forced Derate during a given time period. According to the plant's January 2004 business plan, the composite EFOF for units 1 and 2 was [REDACTED] percent for 2003, compared to a composite EFOF of [REDACTED] percent for units 3 and 4 during the same year. According to the business plan, a top decile performer will have an EFOF of 2.0 percent or less. The California Independent System Operator (CAISO) has declared Units 1 and 2 to be Reliability Must Run (RMR) units, and has concluded contracts with the AES to allow the ISO to operate the units to preserve the stability of the electric grid.

Units 3 and 4 were returned to service after extensive renovations in 2003, and have experienced significant problems with the boiler, turbine control valves, and Distributed Control System (DCS), based on CPSD's power plant inspections.

³ [REDACTED]

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SECTION 1—Safety Hazards Requiring Immediate Corrective Action

Of the 29 potential violations of maintenance standards found in this audit, eight were potential safety violations which required immediate corrective action. Among other things, staff found dangling insulation in an area open to foot traffic, deteriorating (and fallen) concrete on the underside of a turbine deck; standing water on floors, some near electrical boxes; uncovered electrical boxes; and carelessly stored laboratory chemicals. Hazards were not properly marked or barricaded. These observations indicate that the plant was not following the plant's own procedures, for example, Section 23 of the plant's "Station Safety Manual" which states that "Team leaders will identify all workplace hazards in areas under their direction and ensure that appropriate signs and warning devices are posted." [AES Huntington Beach, Station Safety Manual, Section 27.] It appears that that plant staff were not following various CPUC safety guidelines, which indicates potential violations of the associated safety standard.⁴ Below we cite the relevant Standard and Guidelines, and discuss each potential violation in detail.

⁴ The introduction to the Operation Standards comments on the relationship between each Standard and the associated guidelines:

The Committee does not intend these guidelines to be enforceable. There may be reasonable ways of meeting a particular standard that do not follow every provision of the associated guidelines. On the other hand, the guidelines may not be an exhaustive list of the actions required by a standard, because at particular plants there may be special conditions not contemplated here.

GAOs should consider the guidelines in reviewing or reformulating their own policies, operating procedures and implementation schedules, to ensure that the concerns raised by the guidelines are addressed, where relevant, at each power generation unit. We anticipate that that Commission staff will use the guidelines as indicators of the kinds of GAO activities that are sufficient to meet standards. Failure to meet guidelines under a particular standard may of course raise questions about the completeness of a GAO's program. Failure to meet a guideline, in combination with other evidence, may indicate a violation of the Standards. However, failure to meet a guideline should not be taken, per se, as a failure to meet the associated standard.

GO 167, Maintenance Standard I.A.1 – Safety (Maintenance Organization Management and Leadership)

GO 167, Assessment Guideline I.A.2.A.3, states:

“Individuals at all levels of the organization contribute to the safety culture of the work environment through demonstrating a willingness to identify problems and ensure they are corrected.”

GO 167, Assessment Guideline I.A.2.C.1, states:

“Work practice norms in the organization promote the safety culture through appropriate defenses, such as technical accuracy, precautions, cautions and notes, are explicitly embedded in procedures, processes, equipment configuration to minimize the occurrences and consequences of inappropriate actions.”

GO 167, Assessment Guideline I.A.2.C.3, states:

“Work practice norms in the organization promote the safety culture through ensuring safety concerns are promptly identified and resolved.”

Preliminary Report Finding 1.1 – Detached Insulation Hanging Over Unit 1 Hopper

Insulation attached to the Unit 1 hopper was falling down and hanging over an area accessible by foot traffic. CPUC engineers found this area not clearly delineated because the safety barrier had collapsed. See Figure 1A and Figure 1B in the addendum section.

Final Outcome and Follow-up

Plant personnel immediately re-barricaded the hopper area when CPSD staff pointed out that it had collapsed. The repairs for the hopper were completed on April 25, 2005. CPSD auditors verified the repairs on June 2, 2005. No further action is needed.



Figure 1A. Insulating materials of the Unit 1 & 2 forced draft fan hopper bin was falling down and hanging over an area accessible by foot-traffic. CPUC engineers found this area not clearly delineated because the caution tape had broken off.



Figure 1B. Close-up (within 3 feet) view of the corroded beams and deteriorated insulating materials of the Unit 1 & 2 forced draft fan hopper bin.

Preliminary Report Finding 1.2 – Unit 4 Fallen Concrete

Staff auditors observed chunks of concrete, the largest measuring one by three feet, on the ground next to the hydraulic power unit (HPU) oil motor controller of Unit 4, which lies under that unit's turbine deck. The concrete had fallen from the underside of the turbine deck onto and around the controller in July 2004, temporarily putting Unit 4 out of operation. According to the Plant Engineer, this event was due to deteriorating rebar in the cement. As of the time of the audit, a licensed civil engineer had been contracted to evaluate the cement problem, which recommended cleaning deck drains that were plugged. Another contractor was consulted, who recommended the use of epoxy for repairs. The CPSD auditor was given a photocopy of a document titled, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." This document, prepared in 1995 by the "International Concrete Repair Institute", had general technical guidelines for conducting the recommended repairs, but gave no specific instructions for the cement repairs at AES Huntington Beach. Neither the drain cleaning nor concrete repair had been completed at the time of the audit. Plant staff stated that evaluation of the turbine deck had been completed by outside contractors, but no written reports of this evaluation were prepared. Additional deterioration of concrete could pose both safety and reliability hazards. As of the CPUC audit, from October 18th to October 22, 2004 there were no barricades around the area where the concrete had fallen and no additional measures had been taken to ensure that surrounding areas under the turbine deck were safe. The concrete was still on the ground under Unit 4. In a letter dated November 4, 2004, AES Huntington Beach stated that it had "re-barricaded the area," and "made arrangements to place a support system under an adjacent area that shows small signs of cracking." The letter stated that plugged drains on the turbine deck needed to be cleared. The letter also stated that another contractor had been located to make the repairs, and the timeline for the repairs would be set in a November 12, 2004 meeting. In a December 3, 2004 conference call, plant staff stated that 35 out of about 105 possible drains had been identified as plugged, that scaffolding had been erected around the drains, and about ten percent of them had been cleaned. AES Huntington Beach has agreed to provide reports and schedules for repairs, along with written reports on contractor findings. However, at the time the preliminary report was issued, neither the written reports on contractor findings nor the schedules for repairs had been received. CPUC staff will continue to monitor this situation on a post-audit basis. (See Figure 2A and Figure 2B in the addendum section).



Figure 2A. Deteriorated concrete fell from a 15-17 feet turbine deck ceiling in July 2004. CPUC auditors found the fallen concrete chunks, which weigh approximately 20-30 pounds, still on the ground (See Figure 2B). This area is accessible by foot-traffic and the fallen concrete poses slip and fall hazards. The area is also not delineated with caution tape.



Figure 2B. The chunk of cement that fell from the turbine deck was still on the ground at the time of the audit.

Final Outcome and Follow-up

AES Huntington Beach agreed on two phases of corrective action after hiring structural engineers to inspect the turbine decks in January 2005. The plant provided the consultant's reports to CPSD auditors. In Phase I, which is complete, the plant cleaned up the fallen cement chunk, placed protective devices under the deck to catch falling cement, and began cleaning clogged drains. The plant has tried to limit concentrated loads to

under 5,000 pounds per support beam as recommended by the consultant's report, and ensure that all major loads are placed over the deck's steel members. A CPSD auditor inspected the turbine deck on June 2, 2005. Even though it was a rainy day, the auditor saw no standing water on the decks. According to the plant engineer, all the drains had been cleared.

In Phase II, AES Huntington Beach will perform patching and repair of the decks. On June 2, 2005 the CPSD auditor inspected the decks that had been marked for repair by the structural engineering contractor. The decks were also marked for load bearing limits. The plant states that it completed the work in Phase II, which consists of patching of the concrete on the decks, by June 30, 2005. No further CPSD action is necessary.

Preliminary Report Finding 1.3 – Water Slip Hazards

Throughout the audit, there were pools of standing water at various places in the facility that were not adequately marked or barricaded to minimize any electrical, or slip and fall hazards. See Figure 3 in the addendum section.

Final Outcome and Follow-up

During an inspection of the bays on April 14, 2005, only one significant pool of water was found. It appeared to be new, and a large sign was evident. No follow-up is necessary.



Figure 3. Pools of standing water were observed throughout the facility that were not adequately marked or barricaded to minimize any electrical, or slip and fall hazards. The growth of algae and accumulation of rust indicated that the standing water was tolerated for a period of time without any cleanup.

Preliminary Report Finding 1.4 – Break Room Roof Leaking Water and Loose Ceiling Tiles

The break room roof was leaking water and several ceiling tiles had broken loose. CPSD auditors witnessed one tile falling on the floor during the audit and saw that some of the other tiles had been tagged for maintenance action. The plant manager stated that facility repairs were planned for the fourth quarter of 2005, but gave no specific timeline for the ceiling repair at the time of the audit. See Figure 4 below.



Figure 4. A piece of wet tile fell from the plant break room ceiling during the audit.

Final Outcome and Follow-up

On April 14, 2005, CPSD inspectors confirmed that all ceiling tiles had been replaced. AES Huntington Beach will repair the roof and other parts of the building by August 2006. CPSD requests that the plant notify CPSD staff after the corrective action is completed.

Preliminary Report Finding 1.5 – Exposed Electrical Box

An electrical box was found open to the atmosphere (see Figure 5 in the addendum section). If the box is active this condition could lead to electrical shock. If the box is inactive it should be so labeled and actions should be taken to prevent accidental reconnection in accordance with electrical codes.



Figure 5. An open service panel with electrical connections exposed to the weather.

Final Outcome and Follow-up

A cover was placed over the unused box, and it was inspected on April 14, 2005. No follow-up is required.

Preliminary Report Finding 1.6 – Improper Handling/Labeling of Chemicals

The AES Huntington Beach “Station Safety Manual”, Section 1.4.3 stated, “All chemicals will be properly segregated in designated storage cabinets.” The following conditions were observed at the plant (see Figure 6 and Figure 7):

- CPSD auditors saw a palette of reagent boxes on the floor of the Raw Water Intake room for Unit 1. This could cause a spill of hazardous chemicals, as well as being a trip and fall hazard.

- CPSD auditors saw a jar labeled “urea” and at least two other unlabeled jars scattered on the laboratory table in the Units 1 and 2 chemical laboratories. Labeling is essential because use of incorrect chemicals could cause unwanted and dangerous reactions. In addition to compromising safety, improper storage may contribute to chemical degradation.
- CPSD auditors saw chemicals stacked in a haphazard manner on the floor and on overhead cabinets in chemistry laboratory for Units 3 and 4. Sampling bottles were seen on a makeshift table above a relay box. Improper storage of chemicals could lead to potentially dangerous spills, as well as possible degradation over time, impacting plant reliability.
- In both chemistry labs, chemical storage cabinets are insufficient and in disarray. CPSD auditors saw reagent bottles (squeeze bottles) that were used daily by plant workers without proper labeling. Use of incorrect chemicals could cause unwanted and dangerous reactions.



Figure 6. Bottles of chemicals were observed to be in disarray and appeared to be improperly stored throughout the Chemistry and Water Lab.

Final Outcome and Follow-up

As of April 14, 2005, the plant has corrected these problems. All of the chemical labs have been cleaned and reorganized as of April 14, 2005. New cabinets have been purchased for the reagents, which have been stored and labeled with names and dates of purchase. No follow-up is necessary.



Figure 7. Bottles of chemicals were observed to be in disarray and appeared to be improperly stored throughout the Chemistry and Water Lab.

Preliminary Report Finding 1.7 – Facility Inspection Checklist

Out-of-date safety policies do not foster a safety culture, and do not indicate accurate embedding of safety precautions in a major plant procedure. The AES Huntington Beach “Station Safety Manual”, Section 21.4, stated that the Facility Inspection Checklist from Appendix A of the manual “will be used to conduct the Safety and Housekeeping audit”. This checklist was not being used or retained by the plant.

Final Outcome and Follow-up

The plant now uses a safety rover to conduct plant inspections. A formal list of the duties of the safety rover was presented to CPSD auditors during the April 14, 2005 meeting. However, CPSD staff believes that the plant’s plan for inspections is not systematic. AES Huntington Beach is preparing a new safety manual and safety program to comply with a new AES Corporate Safety System. In a telephone conference between CPSD auditors and plant management on August 3, 2005, the plant manager informed CPSD auditors that the plant would begin implementing the safety manual “a chapter at a time” on August 31, 2005. CPSD requests that the plant provide quarterly progress reports on the implementation of the new safety plan until the implementation is completed.

Preliminary Report Finding 1.8 – Unclear Practices Regarding Alarms

As discussed in Section 2 of this report, under standard III A.1, CPSD auditors observed plant staff ignoring alarms and believe this behavior could result in unsafe practices. In

particular, CPSD auditors are concerned that if plant employees routinely ignore malfunctioning alarms under the assumption that readings are incorrect, employees may not respond to an actual alarm for a real problem. This practice could endanger the safety and reliability of the plant. The plant should have a clear, written policy on malfunctioning alarms.

Final Outcome and Follow-up

In the response dated February 24, 2005, AES Management described the reaction of its staff to alarms at Unit 1 and 2 as acceptable and normal during periods of starting and cycling. AES argues that the CPSD auditor made his observations during such periods. AES emphasized that its staff is not “ignoring alarms.” CPSD understands that alarms do sound during cycling, and that operators often have to decide whether or not to respond actively to various alarms around a plant. While the plant continues to contend its processes are adequate, the plant has ultimately agreed to the following actions, in a response on November 7, 2005:

- The plant forwarded CPSD a copy of the Control Operator qualification book and a list of alarms on Units 1 and 2, including the initiation devices on November 7, 2005.
- The plant provided CPSD a copy of the most recent instrumentation calibration records on November 7, 2005.
- The plant agreed to discuss response to alarms and what to do when they appear to not be functioning properly with the Control Operators in the next regularly scheduled meeting.
- During the last two months of 2005, and the first 4 months of 2006, the plant maintenance team will be developing and documenting a preventive maintenance plan for the station alarms. The plan will include an assessment of alarm priority and a calibration process and frequency for each alarm. The plant will forward a copy of the plan to CPSD on completion.

This finding is based on the same set of conditions as Preliminary Report Finding 2.9. The corrective actions described above apply to both Preliminary Report Finding 1.8 and Preliminary Report Finding 2.9. CPSD is satisfied with these corrective actions.

SECTION 2—Other Apparent Violations of Standards Requiring Corrective Action

In addition to the eight potential Safety violations in Section 1 which required immediate corrective action, CPSD also identified 21 other potential violations of maintenance standards. The 21 potential violations reported in this section encompassed several categories of the performance standards: maintenance organization management and leadership (safety), maintenance personnel resources; maintenance strategy; maintenance procedures use; work management process; procurement of parts, material and services; equipment performance and monitoring. For instance, CPSD found many preventative tasks to have fallen behind schedule, a lack of preventative maintenance work on emissions monitoring equipment, and a lack of various written maintenance procedures. Corrective actions have been completed for the majority of the preliminary findings. CPSD expects progress reports for the outstanding items, as well as continued monitoring to ensure continued compliance. The potential violations are identified and detailed in the Preliminary Report Findings sections below.

GO 167, Maintenance Standard I.A.1 - Safety (Maintenance Organization, Management, and Leadership)

GO 167, Assessment Guideline I.A.2.C.3, states:

“Work practice norms in the organization promote the safety culture through ensuring safety concerns are promptly identified and resolved.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.1 – Safety Manual Not Up-to-Date

Out-of-date safety policies and procedures do not foster a safety culture. The AES Huntington Beach “Station Safety Manual” was not up-to-date as of the time of the audit. It was written in 2001 and although some sections may describe adequate safety measures, other sections are out of date from a regulatory and company policy perspective. The following discrepancies were found:

The AES parent corporation developed a Global Safety System dated July 30, 2004. The corporate cover letter for this Global Safety System states that it must be implemented within 90 days from July 30, 2004. The Global Safety System description provided by AES Corporate includes specific recommendations for safety auditing processes. It is unlikely that the safety manual could be updated without including references to elements of the Global Safety System. The AES Huntington Beach 2004 business plan also stated that the manual should be updated but there was no definite timeline to complete this, and no updates or revisions were available for review at the time of the audit.

Final Outcome and Follow-up

In its corrective action plan, AES Huntington Beach points out that despite the 2001 date on the cover, the plant's safety manual was updated in 2004, as indicated by revision sheets in the front of the manual. However, the plant does not address CPSD auditors' main concerns that the manual does not accurately reflect current safety practices at the plant. In some instances, such as the use of the housekeeping checklist, the manual includes policies that the plant no longer follows. In other cases, such as the use of the safety auditor, the manual does not describe safety activities that are currently employed by the plant.

AES Huntington Beach is already in the process of preparing a new safety manual and safety program to comply with a new AES Corporate Safety System, under the direction of the plant engineer. CPSD will review the new manual and safety program when they are completed. On June 2, 2005, plant staff informed the CPUC that the new safety system and manual are on schedule for completion by the end of August. In a telephone conference between CPSD auditors and plant management on August 3, 2005, the plant manager informed CPSD auditors that the plant would begin implementing the safety manual "a chapter at a time" on August 31, 2005. CPSD requests that the plant provide quarterly progress reports on the implementation of the new safety plan until the implementation is completed.

Preliminary Report Finding 2.2 – Missing Safety Reporting Procedures

The AES Huntington Beach "Station Safety Manual" did not include the current requirement to report major safety incidents to the CPUC per GO167, Section 10.4.

Final Outcome and Follow-up

The plant manager has agreed to include the requirement to report safety related incidents in the next version of the safety manual. CPSD will follow up, and requests the plant to submit quarterly progress reports.

Preliminary Report Finding 2.3 – Obstructed Work Areas

The attitudes and behaviors of individuals are not always consistent with the plant's own procedures. Additionally, individuals and managers are not identifying and promptly resolving safety issues. The AES Huntington Beach "Station Safety Manual", Section 1.4.9 stated, "Work areas will be kept clean and free from obstruction. Cleanup will be done at the end of each operation or at the end of each shift." CPSD auditors saw cigarette butts, oil containers, a rubber mat, and a chunk of cement on the ground level of Unit 4. The CPSD auditor nearly tripped over the rubber mat, which was difficult to see in the darkened area.

Final Outcome and Follow-up

As of April 14, 2005, AES Huntington Beach had instituted an organized and systematic housekeeping policy, through a written procedure and a formal monthly preventive maintenance task. The plant now assigns four separate teams to systematically clean each of four geographical sections of the plant. CPUC staff observed the plant to be clean and orderly on April 14, 2005. No follow-up is necessary.

GO 167, Maintenance Standard II.A.1 - Maintenance Personnel, Knowledge, Skills, and Performance (Maintenance Personnel Resources)

GO 167, Maintenance Standards II.A.1, states:

“Maintenance personnel are trained and qualified to possess and apply the knowledge and skills needed to perform maintenance activities that support safe and reliable plant operation.”

GO 167, Assessment Guideline II.A.2.F, states:

“Initial and continuing training, including programs to develop and maintain managerial skills, are effectively implemented.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.4 – Missed Safety Training

As of the time of the audit, a plant worker had not made up safety training from which he had been necessarily absent over four months before. This plant worker’s name appears as one of twenty-three required participants in safety training on June 2, 2004. He did not sign the meeting attendance sheet. The Unit Manager stated that this plant worker was unable to attend the full training session for personal reasons, and had to make up this portion of the training. As of the time of the audit, the plant worker had not made up this part of the safety training. Additionally, this plant worker’s personnel training folder was unavailable for the CPSD auditor’s review because it was missing from the plant’s filing cabinet at the time of the audit. The CPSD auditor randomly selected four other plant

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worker's names from the June 2004 safety-training list and found the training folders for those four names present in the filing cabinet.

Final Outcome and Follow-up

The CPSD auditor verified on April 14, 2005 that the employee had made up the necessary training in March of 2005. The missing employee folder was available in the filing cabinet. No follow-up is necessary.

Preliminary Report Finding 2.5 – Inaccurate Work Tracking Forms

Plant personnel closed out a work order before it was actually completed. AES Huntington Beach used a "Filemaker" work tracking system. Filemaker is a database that schedules work through Work Tracking Forms (WTF). These are similar to work orders, in that they indicate maintenance tasks that need to be accomplished. When a task is required, but not yet completed, the WTF has a "status" attribute of "active." When the work is completed, the "status" is changed from "active" to "retired." Plant personnel incorrectly and prematurely changed the WTF status from "active" to "retired" before the work was actually completed for an October 2004 heat treat. As of the time of the audit, the heat treatment had still not been completed. The worker was not interviewed because even if the worker intended to complete the work at the soonest possible opportunity, changing the status of the work order before the work is completed controverts the entire work management process and could easily result in the work never being completed, but appearing as if it was completed. The only clear record of work that needs to be completed or has been completed is the work order. In response to the CPSD auditor's inquiry on this matter, the Unit Manager stated that the individual who made this change needed to be retrained on proper use of the Filemaker program.

Final Outcome and Follow-up

As of April 14, 2005 this individual had already been retrained on the use of Filemaker. The individual is currently not employed at the plant. The plant management has assured CPSD auditors that there will be careful training on the use of Filemaker to track work orders. No follow-up is necessary.

**GO 167, Maintenance Standard III.A.1 - Balance of Maintenance Approach
(Maintenance Strategy)**

GO167, Maintenance Standard III.A.1, states:

“The maintenance program includes the proper balance of various approaches to maintenance, e.g. preventive, predictive, and corrective. The approach is adequately documented with consideration of economics and reliability of equipment or components, and their affect on reliable operation of the unit. Operating experience is factored into the program. Maintenance procedures and documents should include the generation equipment and all those components owned by the generation owner directly connected to the plant that are an integral part of delivering power to the grid including fuel supply systems, electrical switchyards, transmission lines, penstocks, flumes, exhaust system, etc.”

GO 167, Assessment Guideline III.A.2.D, states:

“Preventive maintenance tasks are technically based, including vendor input and industry experience.”

GO167, Assessment Guideline III.A.2.F, states:

“Qualified personnel perform preventive maintenance tasks.”

GO 167, Assessment Guideline III.A.2.H, states:

“Predictive maintenance data receives appropriate technical review and is trended to predict when maintenance should be done to prevent failure.”

GO 167, Assessment Guideline III.A.2.I, states:

“Predictive maintenance data is captured in equipment history in a manner to support maintenance analysis and equipment performance problem analysis.”

GO167, Assessment Guideline III.A.2.J, states:

“Performance of predictive maintenance is monitored through effective performance measures.”

GO167, Assessment Guideline III.A.2.K, states:

“The effectiveness of predictive maintenance tasks is periodically reviewed for effectiveness.”

GO 167, Assessment Guideline III.A.2.L, states:

“Equipment or components that are degraded or not performing their intended function are restored in a timely manner, consistent with their respective importance to personnel safety and efficient, reliable operation of the unit.”

The following observations indicate one or more violations of the standard.

CPSD auditors found no evidence demonstrating a proper balance of preventive, predictive, and corrective maintenance approaches at the plant. Based on a review of the AES Huntington Beach work tracking system, maintenance work is primarily preventive and corrective. Some of the preventive maintenance work is not completed on schedule (see section “GO 167, Maintenance Standard V.A.1”).

In particular, CPSD auditors found the following evidence of the lack of a predictive maintenance program:

Preliminary Report Finding 2.6 – Lack of Written Predictive Maintenance Procedures

- When asked by CPSD auditors if there was a written predictive maintenance program, the Maintenance Manager and chemistry staff replied that written predictive maintenance procedures do not exist at the plant.
- When asked by CPSD auditors if equipment failure data is collected and analyzed, plant management replied that this practice is not done.
- CPSD auditors’ observations are consistent with the AES Huntington Beach business plan dated January 2004, that stated there was a need to “improve preventative and predictive maintenance capabilities.”

In response to questions from auditors on predictive maintenance at the plant, plant staff stated that prior to October 2004, the plant did not conduct periodic oil, vibration, and thermography analyses. Such analyses were conducted only on an as-needed basis. Plant staff stated that it was in the process of implementing such a program, for at least certain aspects of plant operation, by hiring a contractor. However, to be in compliance with the standards, the plant should have comprehensive written procedures for predictive maintenance.

Final Outcome and Follow-up

During the audit in October, 2004 AES Huntington Beach was just starting a comprehensive predictive maintenance program. The plant had been using vibration analysis since 1998, and began using thermography analysis in September 2004, the month before the audit. By April 2005, AES Huntington Beach had further expanded its predictive maintenance program to include oil analysis. Predictive maintenance testing programs are contracted to various vendors, but AES Huntington Beach staff is supposed to review the results regularly. The plant has developed written policies describing its predictive maintenance program, including the tasks they will perform, who will perform them, how they will be done, and how often they will be done. This written plan summary was presented to CPSD on April 22, 2005.

The plant clarified in its Corrective Action Plan and at the meet-and-confer meeting that equipment failure data is gathered in the Filemaker program, and used for analysis of

equipment problems, but is not regularly or automatically trended to predict future problems, except for failures occurring that cause outages. This data is tracked by the Generator Availability Data System, or GADS.

Starting in September 2004, Rockwell Automation began conducting monthly vibration analyses on the plant's rotating equipment. Rockwell downloads the results into a database, which AES Huntington Beach staff review. The Rockwell engineers also make recommendations regarding necessary repairs.

Under contract with AES Huntington Beach, Shell takes oil samples from various pieces of equipment at one, three, six, and twelve-month intervals. The samples are shipped to a Shell laboratory in Oakland for analysis, which returns the results to the plant engineer at AES Huntington Beach. The plant engineer determines what work is necessary. Shell is building an oil testing database for use at AES Huntington Beach.

AES Huntington Beach has been conducting thermography analysis since 1998. AES Huntington Beach has contracted with Proline to conduct thermography analysis, which uses infrared equipment to measure remotely the temperature of plant equipment. When the units are on line, Proline takes thermographic images to determine the temperature of and current flow through vital plant components. Proline tags equipment that fall out of specifications and reports any problems to AES Huntington Beach electricians.

AES Huntington Beach has contracted with Edison International in order to inspect high energy piping bi-annually. Piping tests include Ultrasonic Testing (UT), Magnetic Particle Testing (MPT) and boroscoping. Edison International determines which pipes are inspected prior to scheduled outage season. If serious flaws are located, AES Huntington Beach staff is notified and corrective action will be taken.

AES Huntington Beach has also begun tracking equipment failures that lead to outages, or could lead to outages. These reports track the serious events that lead up to the failures, timeline for repair, down time cost, and root cause analysis. These reports are distributed to the maintenance staff.

Preliminary Report Finding 2.7 – Lack of Preventive Maintenance Work on Continuous Emissions Monitoring System (CEMS)

The CPSD auditor found no evidence of preventive maintenance work performed on the Continuous Emissions Monitoring System (CEMS). CPSD auditors observed two CEMS failures due to clogged capillary sampling tubes during the weeklong audit of the plant. The plant is not contracted with anyone to provide preventive maintenance or onsite repair of the CEMS. The plant has contracted with Delta Air Quality Systems to perform Annual Relative Accuracy Testing and Linearity Testing of the CEMS. These tests are not preventive maintenance tasks, which are necessary to promote equipment reliability and prevent reoccurrence of the failures.

Final Outcome and Follow-up

AES Huntington Beach has developed preventive maintenance procedures for the CEMS. These preventive maintenance tasks have been entered into the Filemaker database. The CPSD auditor received copies of several descriptions for new preventive maintenance activities, which include lens cleaning, desiccant inspection, cleaning of nozzles, and cleaning of regulators. These tasks are performed on schedules anywhere from daily to annually, as indicated by the paperwork presented to the auditor. No follow-up is required.

Preliminary Report Finding 2.8 – Lack of Corrective, Predictive, and Preventive Maintenance for Boiler Tubes

CPSD auditors found that the plant had not taken any steps to reduce the reoccurrence of certain equipment failures. The Babcock and Wilcox report dated March 2004 stated that for Unit 3 the "second pass boiler tube number 12 has failed five times and there is pitting of the primary Superheater header". The reports recommended chemical cleaning, feed water analysis and changes in cold and hot clean up to prevent increased damage and repeated failure. The plant had not taken any action on performing the recommended tasks at the time of the audit. In response to the CPSD auditor's inquiry on this matter, the Plant Engineer replied the plant was evaluating the cost of performing the recommendations to determine whether it will fit into the budget for the spring outage.

Final Outcome and Follow-up

AES Huntington Beach states in their response that they have undertaken several actions to mitigate boiler tube problems. These include:

- Modifying buckstays for better expansion and stress reduction
- Flushing waterwall headers to remove debris
- Installing thermocouples on some waterwall tubes
- Contracting Babcock and Wilcox to troubleshoot and tune the burners in the boiler to correct problem of uneven combustion

CPSD is concerned that, like some other California power plants, AES Huntington Beach has discontinued the process of regular chemical cleaning of boiler tubes for all units. The plant states that it has not discontinued boiler chemical cleaning, and will be performing deposit weight analysis on boiler tubes in 2006 to determine if chemical cleaning is necessary. The plant will forward the results of these tests to CPSD within 30 days of their completion.

Preliminary Report Finding 2.9 – Malfunctioning Alarms and Incorrect Instrumentation Readings

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AES Huntington Beach has not corrected malfunctioning alarms and incorrect instrumentation readings. The CPUC is concerned that if plant workers continued to routinely ignore these malfunctioning alarms and incorrect readings, they may not respond to an actual alarm or reading for a real problem. This practice could endanger the safety and reliability of the plant. The CPSD auditor observed the following during the audit:

In the Unit 1 and 2 control room, an operator dismissed a feed water alarm by pushing a reset button without checking any other instrumentation to verify the actual condition of the alarm. The same alarm indicator was flashing again when the CPSD auditor returned approximately 30 minutes later.

Final Outcome and Follow-up

See Outcome and Follow-up section of Preliminary Report Finding 1.8 of this report.

Preliminary Report Finding 2.10 – Steam pH

In the Unit 3 and 4 control room, the Distributed Control System (DCS) had a steam pH of 14 (there are a total of eight reading points). Steam pH should be at 9.3 according to Original Equipment Manufacturer (OEM) standards. Two different plant workers dismissed the high caustic reading with two different explanations to the CPSD auditor: (1) the probe was in a buffer solution and it was never properly installed, and (2) the transducer failed in the open position.

Final Outcome and Follow-up

In the AES response dated February 24, 2005, the plant stated that the main steam pH probes were taken out of service as the reason for the misreading of the pH at 14. Although the plant believes multiple pH probes in other areas of the feedwater system can adequately maintain pH monitoring, it has agreed to put the main steam pH probes back in service on units 3 and 4. CPSD requests a report from the plant when this action has been completed.

GO167, Maintenance Standard IV.A.1 – Maintenance Procedures and Documentation (Maintenance Procedures Use)

GO167, Maintenance Standard IV.A.1, states:

“Maintenance procedures and documents are clear and technically accurate, provide appropriate direction, and are used to support safe and reliable plant operation. Procedures must be current to the actual methods being employed to accomplish the task and are comprehensive to ensure reliable energy delivery to the transmission grid.”

GO167, Assessment Guideline IV.A.2.A, states:

“The preparation review, approval, and revision of procedures and documents are properly controlled and timely.”

GO167, Assessment Guideline IV.A.2.D.5, states:

“Maintenance procedures and documents should include the generation equipment and all those components owned by the generation owner directly connected to the plant that are integral part of delivering power to the grid including fuel supply systems, electrical switchyards, transmission lines, penstocks, flumes, exhaust system, etc.”

GO167, Assessment Guideline IV.A.2.H, states:

“Procedures, documents, drawings, and other work-related references are readily accessible, authorized, clearly identified, controlled, technically accurate, and up to date.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.11 – Lack of Comprehensive Maintenance Procedures and Standardized Processes

AES Huntington Beach did not have comprehensive procedures for all major equipment to ensure reliable energy delivery. The CPSD auditor did not find maintenance procedures for the air compressor and vacuum pump. The CPSD auditor’s observations are consistent with a report dated October 15, 2004 by Interliance, a consultant hired by AES Huntington Beach to audit the plant. The report stated there was a lack of “standardized processes” for many areas in the plant.

Final Outcome and Follow-up

AES Huntington Beach states, and CPSD concurs, that the plant did have OEM (Original Equipment Manufacturer) manuals at the facility during the audit. However, at the time of the audit, there was no formal plan, procedure or other document describing the use of OEM manuals for repairs of major equipment in an ordered, systematic way. AES Huntington Beach supplied CPSD auditors with a major equipment list with applicable OEM manuals on June 1, 2005. This listing, along with the OEM Manuals, constitutes acceptable written maintenance procedures, presuming they are kept up to date and are actually utilized. No further action is required at this time.

AES Huntington Beach also points out in their Corrective Action Plan that the consultant Interliance was only hired on a trial basis and did not conduct a full audit of the plant. Interliance did conduct a training assessment and proposed the creation of more formalized procedures at the plant.

GO 167, Maintenance Standard V.A.1 – Work Management (Work Management Process)

GO167, Maintenance Standard V.A.1, states:

“ Work is identified and selected based on value to maintaining reliable plant operation. Work is planned, scheduled, coordinated, controlled, and supported with resources for safe, timely, and effective completion. ”

GO167, Assessment Guideline V.A.2.E.1, states:

“Work is implemented and controlled consistent with the planning and schedule such that personnel qualifications, procedure guidance, and supervision are commensurate with the complexity of the activity.”

GO167, Assessment Guideline V.A.2.E.6, states:

“Work backlogs are maintained at a manageable level that supports safe and reliable station operation.”

GO167, Assessment Guideline V.A.2.E.15, states:

“Work completed is compared to work planned and scheduled to identify improvement opportunities.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.12 – Maintenance Activities and Corrective Repair Not Performed as Scheduled

Plant personnel are not performing maintenance activities and corrective repair work in a scheduled, coordinated, and timely manner. Filemaker is used to plan, schedule, and record work activities at the plant. The CPSD auditor conducted a random review of Preventative Work Forms (PWF) and related WTF from Filemaker for safety housekeeping, boiler critical piping, gas burners, SCR analyzers, electrical transformers, turbine turning gear oil pumps, and condenser vacuum pumps on Units 1, 2, 3, and 4. The CPSD auditor found that plant personnel failed to complete the scheduled preventive work according to the specified frequency on the PWF as listed in the following tables.

UNIT 1

PWF Number	Equipment Name	Maintenance Frequency per PWF	Findings
PW000173	Safety Housekeeping	Once per month	Maintenance frequency exceeded one month. There are only two WTFs dated January 7, 2002 and April 4, 2004 on file.
PW000417	Turbine Turning gear oil pump	Once per year	Maintenance frequency exceeded one year. A WTF dated February 15, 2003 has not been completed as of the time of the audit.
PW000491	Condenser Vacuum Pump	Once per year	Maintenance frequency exceeded one year. A WTF dated April 28, 2003 has not been completed as of the time of the audit.

UNIT 2

PWF Number	Equipment Name	Maintenance Frequency per PWF	Findings
PW000118	Turbine Lube Oil Main	Every 3 months	Maintenance frequency exceeded three months. A WTF dated February 18, 2004 has not been completed as of the time of the audit.
PW000174	Safety Housekeeping	Once per month	Maintenance frequency exceeded one month. There are only three WTFs dated January 7, 2002, February 14, 2002, and June 4, 2002 on file.
PW000492	Condenser Vacuum Pump	Once per year	Maintenance frequency exceeded one year. A WTF dated April 28, 2003 has not been completed as of the time of the audit.
PW000614	Generator Exciter High Pressure Motor	Once per year	Maintenance frequency exceeded one year. A WTF dated February 1, 2003 has not been completed as of the time of the audit.
PW000655	Boiler Forced Draft Fan Motor East	Every 6 months	Maintenance frequency exceeded six months. A WTF dated May 1, 2003 has not been completed as of the time of the audit.

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UNIT 3

PWF Number	Equipment Name	Maintenance Frequency per PWF	Findings
PW000175	Safety Housekeeping	Once per month	Maintenance frequency exceeded one month. There are only three WTFs dated January 1, 2002, June 15, 2002, and February 23, 2004 on file.
PW000718	Boiler Critical Piping	Once per year	Maintenance frequency exceeded one year. There are only two WTFs dated February 1, 2003 and October 16, 2004 on file.
PW000753	Gas Burners	Once per year	Maintenance frequency exceeded one year. There are only two WTFs dated February 1, 2003 and October 7, 2004 on file.
PW000815	Electrical Transformers	Once per month	Maintenance frequency exceeded one month. There are only three WTFs dated June 1, 2003, February 4, 2004, and October 9, 2004 on file.
PW001003	Turbine Turning Gear Oil Pump	Once per year	Maintenance frequency exceeded one year. There is only one WTF dated January 1, 2003 on file.
PW001014	SCR Analyzers	Every 3 months	Maintenance frequency exceeded three months. A WTF dated November 27, 2003 has not been completed as of the time of the audit.

UNIT 4

PWF Number	Equipment Name	Maintenance Frequency per PWF	Findings
PW000176	Safety Housekeeping	Once per month	Maintenance frequency exceeded one month. There are only four WTFs dated January 7, 2002, February 14, 2002, April 6, 2002, and March 19, 2004 on file.
PW000839	Boiler Critical Piping	Once per year	Maintenance frequency exceeded one year. A WTF dated October 1, 2004 has not been completed as of the time of the audit.
PW000870	Gas Burners	Once per year	Maintenance frequency exceeded one year. A WTF dated October 1, 2004 has not been completed as of the time of the audit.
PW000891	Flame Scanner Blower North	Once every 6 months	Maintenance frequency exceeded six months. A WTF dated November 1, 2003 has not been completed as of the time of the audit.
PW000956	Turbine Turning Gear Oil Pump	Once every 2 years	Maintenance frequency exceeded two years. A WTF dated January 1, 2004 has not been completed as of the time of the audit.
PW001015	SCR Analyzers	Every 3 months	Maintenance frequency exceeded three months. A WTF dated November 27, 2003 has not been completed as of the time of the audit.

Final Outcome and Follow-up

The Plant has stated that many of the overdue maintenance actions were unnecessary or duplicates of maintenance actions separately scheduled and already performed. The plant will review all existing preventive maintenance tasks, and implement of a new maintenance management software system which will provide an effective tracking system for completion of all maintenance tasks. This project will be completed in 2006. CPSD requests quarterly progress reports for this activity.

Preliminary Report Finding 2.13 – Inadequate Corrective Actions and Documentation of Repair Work

The plant failed to adequately document repair work or take corrective action on some equipment with severe problems. The CPSD auditor reviewed thermography reports dated September 2, 2004 and September 29, 2004 from Pro-Line Inspections, a contractor hired by the plant to inspect electrical equipment, and made the following observations:

The CPSD auditor could not determine the date or the nature of the corrective action that was taken to repair severe problems because the repair completion date was missing from the repair records. In particular, the thermography report dated September 2, 2004 contained incomplete repair records for two “code 4” problems on the Unit 2 main transformer. A “code 4” is defined in the report as a severe condition requiring immediate corrective action by the generator. These severe problems were identified as a terminal crimp connection (problem no. 5), and a terminal connection (problem no. 7). The repair records showed that a plant worker performed some type of repair work on the problems, but the records did not provide a completion date. In response to the CPSD auditor’s inquiry on this matter, the Unit Manager conducted a search in Filemaker to locate an electronic work order that might have provided the repair completion date on these problems, but failed to find any repair work order records.

The plant failed to take immediate corrective action to repair or even to schedule repair work on equipment previously identified as having a severe problem. In particular, the thermography report dated September 29, 2004 has two “code 4” problems that had not been corrected as of the date of the audit. A “code 4” is defined in the report as a severe condition requiring immediate corrective action by the generator. The first problem (no. 9 in the report) concerned braided connectors from the ISO bus to the Unit 2 main transformer. There was no evidence of repair work done on the equipment, nor was any work order found in Filemaker indicating the plant had planned the repair work at a later time. In response to the CPSD auditor’s inquiry on this matter, the Unit Manager explained that the problem had not been corrected because it would require taking the unit offline to repair. The second problem (no. 12) concerned a fuse clip connection from the ISO bus to the transformer on Unit 2 main fused disconnect switch. The CPSD auditor

did not find any evidence of repair work done on the equipment, or any work order to schedule the repairs.

Final Outcome and Follow-up

The plant repaired the fuse holder in September 2005, completing all the thermography related repairs mentioned in the preliminary report finding above. The plant feels the current process is adequate, but in 2006 the plant will be implementing a new maintenance management system, which will include complete documentation of repairs recommended by predictive maintenance, such as thermography analysis. CPSD is satisfied with this corrective action, and requests quarterly reports on the progress of the implementation of this new maintenance management system.

GO167, Maintenance Standard VI.A.1 – Spare Parts, Materials, and Services (Procurement Of Parts, Materials And Services)

GO167, Maintenance Standard VI.A.1 states:

“Correct parts and materials in good condition, are available for maintenance activities to support both forced and planned outages. Procurement of services and materials for outages are performed in time to ensure materials will be available without impact to the schedule. Storage of parts and materials support maintaining quality and shelf life of parts and materials.”

GO167, Assessment Guideline VI.A.2.J, states:

“Preventive maintenance requirements for spare components are properly specified and performed to specifications.”

The following observation indicates one or more violations of the standard.

Preliminary Report Finding 2.14 – Lack Of An Inventory System

AES Huntington Beach did not have a systematic approach to evaluate existing parts and materials to ensure their good condition for the support of outages. In response to CPSD auditor’s inquiry about such an evaluation program, the Maintenance Manager replied that informal visual inspections are conducted from time to time, but not according to a schedule, to remove obsolete parts and materials from inventory. However, when asked to review supporting documents that detail how such informal evaluations are performed and what they entailed, none were provided because such visual inspections are not formally recorded. AES Huntington Beach Inventory Procedure, Section 7.A.1.1, stated “inventory aging reports will be prepared and analyzed on a quarterly basis by the Warehouse Manager to determine if any reserve is required for excess or obsolete inventory.” This

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report was not available for review by the CPSD auditor at the time of the audit. AES Huntington Beach stated that Section 7.A.1.1 of the inventory procedure had become effective only a week before the audit. The lack of an inventory aging report or other supporting documents substantiates this audit finding.

Final Outcome and Follow-up

AES Huntington Beach will initiate quarterly cycle counts of parts and materials. These will determine whether the parts should remain in inventory, be discarded, or transferred to another plant with a need for a particular item. According to the AES Huntington Beach audit response, this method has the approval of their external auditor, Deloitte and Touche. The types of parts and material in general storage at the plant do not typically degrade over time. Parts and materials are stored in a warehouse, are protected from the elements, and should be available for their full service lives once installed in the plant. Therefore, according to the audit response, the plant believes that a “complete inventory aging analysis” of parts in storage is unnecessary.

The plant has established a different procedure for chemicals, which do expire over time. Under this procedure, plant staff tracks the expiration of all chemicals in stock, and plans for the procurement of replacement stocks. CPSD accepts these explanations and corrective actions.

GO167, Maintenance Standard VII.A.1 - Equipment Performance and Material Condition (Equipment Performance and Material)

GO167, Maintenance Standard VII.A.1, states:

“Equipment performance and material condition support reliable plant operation. This is achieved using a strategy that includes methods to anticipate, prevent, identify, and promptly resolve equipment performance problems and degradation.”

GO167, Assessment Guideline VII.A.2.A, states:

“Plant equipment operates on demand.”

GO167, Assessment Guideline VII.A.2.B, states:

“Personnel exhibit a low tolerance for equipment and material condition problems by identifying deficiencies and advocating resolution.”

GO167, Assessment Guideline VII.A.2.N, states:

“Equipment problems receive appropriate attention and timely resolution. Based on priorities established through the work management process. Technical support is available to resolve equipment problems.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.15 – Backup Boiler Feed Pump Operation and Testing

AES Huntington Beach has not taken the necessary steps to ensure the backup boiler feed pump operated properly to support reliable plant operation. On August 18, 2004, the Unit 2 backup boiler feed pump failed to operate when it was activated after the main boiler feed pump failed. This incident resulted in a 75 MW unit derate for five days. A CPSD inspector examined this incident in August 2004 and determined that the failure was due to a bad seal. The inspector learned that the pump had been repaired before the August 2004 failure, but not tested before being placed back in service. The backup boiler feed pump was placed in a system that was parallel to the main boiler feed pump system in Unit 2. The backup boiler feed pump could and should have been tested under operating conditions by realigning some valves.

Final Outcome and Follow-up

AES Huntington Beach has prepared a new return-to-service checklist and protocol, which includes testing of components prior to placing them into service. CPSD auditors reviewed the new checklist and will monitor as needed in the future to ensure that the checklist is implemented.

GO167, Maintenance Standard VII.B.1 – Engineering and Technical Support (Equipment Performance and Monitoring)

GO167, Maintenance Standard VII.B.1, states:

“Engineering activities are conducted such that equipment performance supports reliable plant operation. Engineering provides the technical information necessary for the plant to be operated and maintained within the operating parameters defined by plant design.”

GO 167, Assessment Guideline VII.B.2.D, states:

“Engineering personnel use technical information, such as design analyses, operating experience information, and fundamental engineering principles, to provide recommendations on plant operations.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.16 – Missing End Plate Fasteners

During a plant tour, the CPSD auditor found that fourth-fifths of the fasteners that hold the end plates onto the pressurized vessel were missing from both the heat exchangers for Units 3 and 4. This was true of four end plates in total, two end plates on each of two heat exchangers. This condition is not consistent with the design of the heat exchanger. Most significantly, it reduces the component's safety factor and ability to resist surges in cooling water pressure. In response to the CPSD auditor's inquiry on this matter, a plant worker explained this practice provided easier access for sea life removal, and that the pressure rarely exceeded 35 pounds per square inch. The basis for this explanation appeared to the CPSD auditor to be based on "personal judgment" rather than on engineering calculation or analysis. Given the lack of documentation or analysis supporting this practice, it is not possible to determine whether this practice is adequate to support safe and reliable plant operation. See Figure 8A and Figure 8B in the addendum section.



Figure 8A. Four-fifths of the fasteners that hold the end plate onto the pressurized vessel were missing along the perimeter of the end plate from the heat exchangers for Units 3 and 4.

Figure 8B. (Below) Close up view of the fasteners that hold the end plate onto the pressurized vessel that were missing from the feedwater condenser for Units 3 and 4.



Final Outcome and Follow-up

Plant staff had installed all fasteners on all the heat exchangers visible at the plant as of April 14, 2005. No follow-up is necessary.

GO167, Maintenance Standard VII.C.1 – Chemistry Control (Equipment Performance and Monitoring)

GO167, Maintenance Standard VII.C.1, states:

“Chemistry controls optimize chemistry conditions during all phases of plant operation and system non-operational periods.”

GO 167, Assessment Guideline VII.C.2.C, states:

“Action levels are established and emergency actions are planned and implemented for key chemistry parameters. Out-of-specification conditions and abnormal chemistry are corrected in a timely manner.”

GO 167, Assessment Guideline VII.C.2.E, states:

“Corrective actions are taken before chemistry specifications are exceeded.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.17 – Iron Content Level Excursions

Chemistry conditions were not optimized at AES Huntington Beach. A review of the plant’s chemistry records revealed the following:

- The iron content of the feed water for Units 3 and 4 typically exceeded chemical limits for start-up because the plant was cycled on and off rapidly. The plant’s Station Orders have not been updated to reflect this operating condition. The procedures for maintaining chemical limits during start-up are based on OEM specifications in Station Orders “E-2”. Those specifications were written for units operating at a constant load and not for rapid cycling conditions. Station Order “E-2” also stated “feed water iron content should not exceed 10 parts per billion (ppb)”. Operation logs for the period of January 24, 2004 to October 15, 2004 showed feed water iron content averaged 25 ppb with readings as high as 100 ppb. The CPSD auditor’s observations are consistent with the Babcock and Wilcox report; dated March 2004, which denoted a problem with the plant’s "hot and cold clean up".

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- The plant has not performed any of the corrective work recommended by its contractor to correct problems found in a March 2004 inspection. In the evaluation of the actions taken by the plant to conduct the recommended corrective work, the CPSD auditor reviewed past work-orders and interviewed plant workers. In response to the CPSD auditor's inquiry on this matter, the Plant Engineer replied the plant is evaluating the cost of the work to determine whether it will fit into the spring outage budget. In a report dated March 2004, Babcock and Wilcox, recommended feedwater water analysis and boiler chemical cleaning to help correct the following problems:
 - o The plant routinely operated with unacceptable feedwater conditions.
 - o There were excessive internal deposits that indicated hot and cold clean up was not appropriately gauged (monitored and determined if appropriate).
 - o Unbalanced combustion was evident through excessive deposits on the secondary super heater outlets of Units 3 and 4 and penthouse tubes of Unit 3. There was evidence of overheating and exfoliation of the boiler tubes.

Final Outcome and Follow-up

In response to the CPUC Auditor's observations, the plant showed that the iron concentration in feedwater has been kept within limits given extenuating circumstances. Additional information entitled "Iron Entries 08-25-05" was provided. The plant also provided explanations for the extenuating circumstances caused by the cycling of the plant, which requires generation curves to be considered when evaluating iron concentrations. The plant uses a detailed schedule to determine allowable iron in feedwater at various load levels. (Higher iron content is acceptable at low output.) Measurements of feedwater iron concentration show that the plant observes those limits.

See Preliminary Report Finding 2.8, above, for discussion of the recommendations in the Babcock and Wilcox reports.

GO167, Maintenance Standard VII.D.1 – Regulatory Requirements (Equipment Performance and Monitoring)

GO167, Maintenance Standard VII.D.1, states:

"Regulatory compliance is paramount in the operation of the generating asset. Each regulatory event is properly identified, reported and appropriate action taken to prevent recurrence."

The following observations indicate one or more violations of the standard.

The plant's regulatory manuals and written procedures were not up to date and contained inaccurate information. The CPSD auditor reviewed the regulatory documents and found the following problems:

Preliminary Report Finding 2.18 - Procedures Manual Not Reflecting Current Duties

In the "Standard Laboratory Practices and Quality Assurance Procedures for Environmental Testing" manual (dated July 3, 2004), the position of Principal Analyst was described as a full-time and "dedicated" employee at the plant. Based on the CPSD auditor's interview with various plant chemistry staff, it was not clear whether the Principal Analyst duties were actually being carried out at the plant. The CPSD auditor asked for records of a full time, dedicated plant worker performing the duties of Principal Analyst. The chemistry staff was unable to produce those records. A part-time contractor was mentioned several times by the chemistry staff as the person handling the Principal Analyst duties. CPSD auditor's interview revealed that this part-time contractor does not actually perform the Principal Analyst's duties.

Final Outcome and Follow-up

AES provided a response regarding the staff who currently function as the Principal Analyst. To quote the AES response date February 24, 2005, "One of our operators, who previously served as a chemical technician, was designated as the Principal Analyst, though it was not a dedicated position." The procedures manual has been revised to reflect that AES Huntington Beach no longer requires the Principal Analyst to be a dedicated position. CPSD auditors received a copy of the updated procedures manual.

Preliminary Report Finding 2.19 – Waste Management Procedure Manual Not Up to Date

The "Waste Management Procedure Manual" was not up-to-date. In particular, CalScience Environmental Laboratories and DK, the plant's current EPA approved laboratory and the hazardous waste carrier respectively, were not listed. The instructions and examples for hazardous material manifests were inaccurate. The CPSD auditor found a manifest in the manual that does not belong to DK, the current carrier. The manual contained instructions and an example of a manifest from a previous carrier that is no longer used.

Final Outcome and Follow-up

The manual has been revised to reflect current practices and the plant's current laboratory and hazardous waste carriers. No follow-up is necessary.

GO167, Maintenance Standard VIII.A.1 – Equipment History (Maintenance History)

GO167, Maintenance Standard VIII.A.1, states:

Maintenance standards or procedures clearly define requirements for equipment history for the systems and equipment, including, what information or data to collect, how to record data, and how the data is to be used.

GO 167, Assessment Guideline III.A.2.H, states:

“Predictive maintenance data receives appropriate technical review and is trended to predict when maintenance should be done to prevent failure.”

GO 167, Assessment Guideline III.A.2.I, states:

“Predictive maintenance data is captured in equipment history in a manner to support maintenance analysis and equipment performance problem analysis.”

GO 167, Assessment Guideline VIII.A.2.B, states:

“Procedures clearly define the type of data to be collected and recorded. Accountabilities for data entry are also clearly specified.”

The following observations indicate one or more violations of the standard.

Preliminary Report Finding 2.20 – Lack of Regular Analysis of Equipment Data

AES Huntington Beach does not use Filemaker or any other database system to track and trend equipment failures. In response to the CPSD auditor’s repeated inquires on this matter, plant management personnel replied they were aware of repeated failures associated with the Selective Catalytic Reduction (SCR) system, condensers and feed water pumps. However, this information is not recorded in any written format but retained mentally by individuals instead. This practice is not a consistent, adequate, and complete way to compile information for the proper identification or analysis of equipment failures.

Final Outcome and Follow-up

The plant has replied that staff discusses failures in the staff’s daily meeting as those failures occur. If the failure puts the plant out-of-service, or could have put the plant out of service, the plant performs a root cause analysis of the outage and prepares an event report, based in part on data from Filemaker.

The plant enters repair orders in Filemaker, and therefore has data available on equipment failures of all types. The plant does not systematically and regularly track or analyze this data in the absence of an outage. Rather, plant staff states that they know what’s wrong with the plant though experience. Through daily meetings they develop and modify maintenance strategies for critical components. The Filemaker database is utilized to

some degree, particularly when planning long-term maintenance outages. Plant staff very strongly believes that the plant's approach is adequate. CPSD is satisfied with this explanation, particularly since the plant has increased other predictive maintenance efforts, such as vibration and thermography analysis.

GO167, Maintenance Standard IX.A.1 – Maintenance Facilities and Equipment (Maintenance Facilities, Tools and Equipment)

GO167, Maintenance Standard IX.A.1 states:

“Facilities and equipment are adequate to effectively support maintenance activities”

GO167, Assessment Guideline IX.A.2.G, states:

“Facilities, equipment, and tools are maintained in good repair”

The following observation indicates one or more violation of the standards.

Preliminary Report Finding 2.21 – Lack of Maintenance Program for Repair Tools and Equipment

AES Huntington Beach did not have a routine maintenance program to ensure the adequacy of existing repair tools and equipment for the support of maintenance activities. Such equipment included welding machines, testing instruments, and machining tools. In response to CPSD auditor's inquiry about such periodic maintenance program, the Maintenance Manager replied that tools and equipment are inspected on an as-need basis, primarily each time before the equipment is used. However, when asked to review historical records and/or checklists that demonstrate how and when certain adjustment, calibration, and routine maintenance are performed, none were provided because such inspections are not formally tracked. The lack of these supporting documents substantiates this audit finding.

Final Outcome and Follow-up

In response to the audit, AES Huntington Beach will begin to track the calibration of the plant's equipment and tools, whether or not the plant calibrates instruments on-site. (AES Huntington Beach sends electric equipment out of the plant for calibration. Under the new program, a date sticker on any electrical equipment will verify its current calibration.) A CPSD auditor reviewed a sample routine maintenance/calibration schedule and record-keeping procedure on June 2, 2005. This procedure and database will be prepared and maintained by Wilmington Instruments, a contractor. No further follow-up is necessary.

APPENDIX 1. TABLE OF FINDINGS