Department of Toxic Substances Control

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Sent Via Email

May 15, 2007

Ms. Yvonne Meeks
Portfolio Manager – Site Remediation
Pacific Gas and Electric Company
4325 South Higuera Street
San Luis Obispo, CA 93401

COMMENTS ON THE RCRA CORRECTIVE MEASURES STUDY WORKPLAN, PACIFIC GAS AND ELECTRIC COMPANY (PG&E), TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA (EPA ID NO. CAT080011729)

Dear Ms. Meeks,

By this letter, the Department of Toxic Substances Control (DTSC) would like to provide additional direction to PG&E with respect to the December 2002 Corrective Measures Study Work Plan (CMS Work Plan) prepared by CH2M Hill for the Topock Compressor Station corrective action project. DTSC notes that we reviewed and approved the CMS Work Plan on June 24, 2003. However, in consideration of the dynamic nature of the stakeholder involvements on this project since the CMS Work Plan approval, and the delay in reaching the anticipated final remedy for groundwater as specified in the CMS Work Plan schedule, DTSC reissued the CMS Work Plan to the Consultative Work Group for additional review in early 2006. On February 16, 2006, SAIC submitted a set of consolidated comments on behalf of the Department of the Interior (DOI) during the specified comment period. DTSC notes that no other comments were received at the close of the comment period and forwarded the DOI comments, by email, to the Consultative Work Group, Native American Tribal contacts and the Technical Work Group members on March 2, 2006.

In consideration of the agreement between DTSC and the DOI, as the lead CERCLA response agency, to utilize a single document to fulfill the needs of both agencies where possible, DTSC believes that a revision of the CMS Work Plan is warranted based on the comments received. The February 2006 consolidated comments from the DOI are enclosed for your information.

In addition to the need to modify the CMS Work Plan based on the DOI comments, DTSC also notes several areas of the 2002 CMS Work Plan which will need to be amended as a result of additional understanding of the site since the creation of the 2002 document. These areas requiring modifications are noted below:

1. In general, much more information regarding the site history and ground water data are now available. PG&E should revise the CMS work plan with up to date information in every aspect of the document.

2. The 2002 CMS Work Plan lacks discussion with respect to ecological receptors at the site and the need for a complete ecological risk assessment. In particular, DTSC notes the lack of discussion regarding chemicals of potential concern in Section 1.3.1 of the soil and sediment discussion.

3. Although DTSC understands that the original CMS Work Plan was focused on the ground water remedy, the CMS Work Plan lacks discussion on PG&E's strategies with respect to corrective measures for the soil component at the site. There is no consideration of possible continued leaching of contaminants of concern to ground water in the Site Conceptual Model. If PG&E decides to separate ground water from the soils for the CMS Work Plan and Report, PG&E should consider phasing the work plans and reports and clearly define that position in the Introduction of the Work Plan as well as the overall project schedule.

4. Section 4.4 of the 2002 CMS Work Plan on Point of Compliance is ambiguous and unclear. For the PG&E Topock Compressor Station Project, DTSC anticipates that the remedial action will be to achieve clean-up standards within the entire affected media. According to the Handbook for RCRA Corrective Action Workshop on Result-Based Management, U.S.EPA, October 26, 1999, the point of compliance is defined as "site-specific locations where media clean-up levels must be measured and achieved. [The point of compliance] should be established for all affected media subject to the remedial action." PG&E must revise this section.

5. In Section 6.1, Evaluation Criteria, PG&E cited the Regional Water Quality Control Board's Remedial Action Plan remedy evaluation criteria. Although these can be considered under Applicable, Relevant and Appropriate Requirements (ARARs), PG&E should, instead, follow the corrective action standards contained in the scope of work for a Corrective Measure Study Report included as attachment to the Corrective Action Consent Agreement. These standards are reproduced and provided for PG&E in Enclosure 2.

6. In Section 6.2, PG&E should specify all relevant studies, including but not limited to, all laboratory, bench scale and pilot studies necessary prior to the CMS report leading to the remedy selection. The objective, purpose, and schedule of these studies should be clearly defined in the CMS Work Plan.

Since the CMS Work Plan is an essential document for the final remedy selection process, DTSC would like to avoid additional delays. Therefore, DTSC requests that PG&E submit a revised CMS Work Plan to DTSC by June 29, 2007.

If you have any questions regarding this letter or the directions for the revised CMS Work Plan, please contact me at (714) 484-5439.

Sincerely,

Aaron Yue
Project Manager
Geology, Permitting and Corrective Action Branch

Enclosures

aky:050703C

cc: PG&E Topock Consultative Workgroup Members – Via email
Tribal Representatives in PG&E Contact List – Via email

Enclosure 1

Consolidated DOI Comments

Comments on CMS Work Plan from DOI, consolidated.

General

The CMS Work Plan does not address the activities required for a CERCLA FS. Many of the activities of a CMS are consistent with an FS but there should be a cross-walk to ensure all the essential components of a CERCLA FS are included in the planning. The Public Participation portion is particularly lacking.
The CMS/FS Work Plan needs to address the CERCLA components of a FS such as the ARARs and RAOs.

1. 1.0 Introduction – Should include reference to the CERCLA requirements as well as the California and RCRA guidance. This section should also reference the DOI Administrative Consent Agreement of 2005 and place throughout rest of workplan where appropriate.
2. Page 2 Section 1.2 – Should include some language referencing the CERCLA requirements; specifically should make the cross-walk between the equivalent CERCLA process steps (RI, FS, alternative analayis, RD/RA).
3. Section 2.0 – This section needs to especially call out the formal structure of the CERCLA process. Objective of the CMS is also to identify the RAOs, satisfy the ARARs etc. These need to be called out under the CM Study box if diagram is to remain the same.
4. Page 5 Schematic diagram – Should include the Risk Assessment, Identification of RAOs, the 9 CERCLA evaluation criteria within the CMS/FS process. Suggest adding separate flow process diagram or combine the present one calling out the CERCLA equivalent. Suggest adding detail between the CMS Report and CMI boxes to indicate the Proposed Plan and Record of Decision, where the public participation is critical. The diagram only provides the California and RCRA process. The CERCLA requirements should also be included.
5. Suggest updating any information regarding number of samples, number of wells installed, etc. since submittal.
6. Page 7, Red Fanglomerate – Should the sentence read - Located between the ***unconsolidated*** aquifer and bedrock is a consolidated …?
7. Page 10, 1st paragraph – Should provide a little more detail on the planned use of the water quality parameters and how they will be used to model the groundwater.
8. Section 4 – The RAOs and acceptable risk levels should be identified before the clean up standards are applied.
9. Page 12 Section 4.4 – Update the information on further well installation data.
10. Section 5.0 – The section should identify the evaluation criteria for both RCRA, California regs., and CERCLA.

11. Section 6.2 – There could be a redundant effort or a change in the final remedy if the primary data gaps are not identified and filled early in the process.
12. Section 4.3, page 11. Site-specific, risk-based levels: Since this workplan has been set-aside for a couple of years, why not add in some suggestions of which site-specific alternatives or risk-based levels they want to use?

    This especially pertains to the language in 4.3 which states "a screening ecological risk assessment [was] conducted but more details have been requested ... for completion. A revised final document is pending (upon completion of the RFI report). Since neither of these have been completed in the RFI, why not identify which risk-based levels or benchmarks we would like to use now rather than later?

    Section 5.3, Phytobarrier at Point of Compliance, page 14: What would PGE do with the trees used as phytobarriers? Along with preventing or reducing plume movement, the trees would also transport COCs into their cellular structure. How would they dispose of this hazardous waste so as not to create a new source of Cr contamination when a tree falls or is cut down?

Enclosure 2

Excerpt from Scope of Work in Corrective Action Consent Agreement

Corrective Measures Study Report

The CMS Report shall, at a minimum, include the following elements:

1. Introduction/Purpose

   Describe the purpose and intent of the document.

2. Description of Current Conditions

   The Owner/Operator or Respondent shall include a brief discussion of any new information that has been developed since the RCRA Facility Investigation Report was finalized. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measure alternative(s).

3. Proposed Media Cleanup Standards

   The Owner/Operator or Respondent shall describe and justify the proposed media cleanup standards and points of compliance.

4. Identification and Screening of Corrective Measure Technologies

   4.1 <u>Identification</u>

   List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the media cleanup standards. The Owner/Operator or Respondent should consider including a table that summarizes the available technologies.

   The Owner/Operator or Respondent should consider innovative treatment technologies, especially in situations where there are a limited number of applicable corrective measure technologies. Innovative technologies are defined as those technologies for source control other than incineration, solidification/stabilization and pumping with conventional treatment for contaminated ground water. Innovative treatment technologies may require extra initial effort to gather information, analyze options and to adapt the technology to site specific situations. However, in the long run,

innovative treatment technologies could be more cost effective. Treatability studies and on-site pilot scale studies may be necessary for evaluating innovative treatment technologies.

4.2 Screening

Technologies must be screened to eliminate those that may prove unfeasible to implement given the existing set of waste and site-specific conditions. The screening is accomplished by evaluating technology limitations (e.g., for volume, area, contaminant concentrations, interferences, etc.) and using contaminant and site characterization information from the RCRA Facility Investigation to screen out technologies that cannot be fully implemented at the facility. The screening process must focus on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions (e.g., depth to ground water and aquitards). As with all decisions during the CMS, the screening of technologies must be fully documented. This is especially true if the screening step indicates that only one corrective action technology should proceed to the next step and be evaluated in detail. List the corrective action technologies selected for further evaluation. Also document the reasons for excluding any corrective action technologies. The Owner/Operator or Respondent should consider including a table that summarizes the findings.

5. Corrective Measure Alternative Development

Assemble the technologies that pass the screening step into specific alternatives that have potential to meet the corrective action objectives. Options for addressing less complex sites could be relatively straightforward and may only require evaluation of a single or limited number of alternatives.

Each alternative may consist of an individual technology or a combination of technologies used in sequence (e.g., treatment train). Depending on the site specific situation, different alternatives may be considered for separate areas of the facility. List and briefly describe each corrective measure alternative.

6. Evaluation of Corrective Measure Alternatives

The four corrective action standards and five remedy selection decision factors described below shall be used to evaluate the corrective measure alternatives. All alternatives must meet the corrective action standards

before the remedy selection decision factors are used for further evaluation.

The corrective action standards are as follows:

- Be protective of human health and the environment;
- Attain media cleanup standards;
- Control the source(s) of releases in order to reduce or eliminate, to the extent practicable, further releases of hazardous wastes (including hazardous constituents) that may pose a threat to human health and the environment; and
- Comply with any applicable federal, state, and local standards for management of wastes.

The remedy selection decision factors are as follows:

- Short- and Long-Term Effectiveness;
- Reduction of Toxicity, Mobility and/or Volume;
- Long-Term Reliability;
- Implementability; and
- Cost.

The corrective action standards and decision factors are described in further detail below.

a. <u>Be Protective of Human Health and the Environment</u>

Describe in detail how each corrective measure alternative is protective of human health and the environment.

This standard for protection of human health and the environment is a general mandate of the RCRA statute. The standard requires that remedies include any measures that are needed to be protective. These measures may or may not be directly related to media cleanup, source control, or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to a contaminated drinking water supply.

b. Attain Media Cleanup Standards

Describe in detail each corrective measure alternatives ability to meet the proposed media cleanup standards.

c. Control the Sources of Releases

Describe in detail each corrective measure alternatives ability to control the sources of releases.

A critical objective of any remedy must be to stop further environmental degradation by controlling or eliminating further releases that may pose a threat to human health and the environment. Unless source control measures are taken, efforts to cleanup releases may be ineffective or, at best, will essentially involve a perpetual cleanup. Therefore, an effective source control program is essential to ensure the long-term effectiveness and protectiveness of the corrective action effort.

The source control standard is not intended to mandate a specific remedy or class of remedies. Instead, the Owner/Operator or Respondent is encouraged to examine a wide range of options. This standard should not be interpreted to preclude the equal consideration of using other protective remedies to control the source, such as partial waste removal, capping, slurry walls, in-situ treatment/stabilization and consolidation.

d. Comply With Any Applicable Standards for Management of Wastes

Discuss how any specific waste management activities will be conducted in compliance with all applicable state or federal regulations (e.g., CAMU closure requirements, land disposal restrictions).

e. Short- and Long-Term Effectiveness

Each corrective measure alternative must be evaluated with regard to its effectiveness in protecting human health and the environment and meeting the proposed media cleanup standards. Both short- and long-term components of effectiveness must be evaluated; short-term referring to the construction and implementation period, and long-term referring to the period after the remedial action is complete. Estimate approximately how much time it will take to implement each corrective measure alternative, the length of time before initial beneficial results are obtained, and the length of time required to achieve the proposed media cleanup standards.

The evaluation of short-term effectiveness must include possible threats to the safety of nearby communities, workers, and environmentally sensitive areas (e.g., oceans, wetlands) during construction of the corrective measure alternative. Factors to consider are fire, explosion, exposure to hazardous substances and potential threats associated with treatment, excavation, transportation and re-disposal or containment of waste material. Laboratory and/or field studies are extremely useful in estimating the effectiveness of corrective measures and should be used whenever possible.

The evaluation of long-term effectiveness must include possible threats to the safety of nearby communities workers, and environmentally sensitive areas (e.g., oceans, wetlands) during operation of the corrective measure alternative.

f. Reduction of Toxicity, Mobility and/or Volume

Each corrective measure alternative must be evaluated for its ability to reduce the toxicity, mobility, and/or volume of the contaminated media. Reduction in toxicity, mobility, and/or volume refers to changes in one or more characteristics of the contaminated media by the use of corrective measures that decrease the inherent threats associated with the media.

Estimate how much the corrective measure alternative will reduce the waste toxicity, volume and/or mobility (compare initial site conditions to post-corrective measure conditions). In general, DTSC strongly prefers corrective measures that have a high degree of permanence and reduce the contaminant toxicity, mobility and volume through treatment.

g. Long-Term Reliability

Each corrective measure alternative must be evaluated with regards to its long-term reliability. This evaluation includes consideration of operation and maintenance requirements.

Demonstrated and expected reliability is a way of assessing the risk and effect of failure. Discuss whether the technology or combination of technologies have been used effectively together under analogous site conditions, whether failure of any one technology in the alternative has an impact on receptors or contaminant migration, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site (e.g., heavy rain storms, earthquakes, etc).

Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements must also be considered.

Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure alternative shall be evaluated in terms of the projected useful life of the overall alternative and of its component technologies. Useful life is defined as the length of time the necessary or required level of effectiveness can be maintained.

h. Implementability of Corrective Measure Alternatives

The implementability criterion addresses the technical and administrative feasibility of implementing a corrective measure alternative and the availability of various services and materials needed during implementation. Each corrective measure alternative must be evaluated using the following criteria:

Construction and Operation: Corrective measure alternatives must be feasible to implement given the existing set of waste and site-specific conditions. This evaluation was initially done for specific technologies during the screening process and is addressed again in this detailed analysis of the alternative as a whole. It is not intended that the screening process be repeated here, but instead to highlight key differences and/or changes from the screening analysis that may result from combining technologies.

Administrative Feasibility: Discuss the administrative activities needed to implement the corrective measure alternative (e.g., permits, public acceptance, rights of way, off-site approvals, etc.).

Availability of Services and Materials: Discuss the availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials, and the availability of prospective technologies for each corrective measure alternative.

i. Cost

Develop a preliminary cost estimate for each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs. Include a description of how the costs were estimated and what assumptions were used.

- The preliminary capital cost estimate must consider all key costs including, at a minimum, costs for engineering, mobilization, demobilization, site preparation, construction, materials, labor, equipment purchase and rental, sampling, analysis, waste disposal, permitting and health and safety measures.

- The preliminary operation and maintenance cost estimate must consider all key costs including, at a minimum, costs for labor, training, sampling, analysis, maintenance materials, utilities, waste disposal, waste treatment, permitting and health and safety measures.

- Calculate the net present value of preliminary capital and operation and maintenance costs for each corrective measure alternative.

7. Owner/Operator or Respondent's Recommended Corrective Measure Alternative

   The Owner/Operator or Respondent may recommend a preferred corrective measure alternative for consideration by DTSC. Such a recommendation should include a description and supporting rationale for the preferred alternative that is consistent with the corrective action standards and remedy selection decision factors discussed above.

Based on the CMS Report and other information including public comments, DTSC will establish final cleanup standards, points of compliance and will select a final remedy for the facility.