

CHAPTER 4

STAFF-INITIATED TEXT CHANGES

The following text changes are made to the Draft Environmental Impact Report (DEIR). These are staff-initiated text changes and errata. Additions to text in this section are shown as underlined, and deletions to the text are noted by strike-through lines.

The second sentence of the last paragraph on page S-5 of the DEIR is hereby revised as follows:

Last year, PG&E auctioned its Morro Bay (~~1,478~~1,002 MW), Moss Landing (~~1,002~~1,478 MW), and Oakland (165 MW) Power Plants to affiliates of Duke Energy Power Services, Inc.

The fourth sentence of the last paragraph on page S-5 of the DEIR is hereby revised as follows:

If PG&E's current divestiture application is approved and the four plants sold, PG&E will still own ~~42~~110 hydroelectric units (3,910 MW), Hunters Point Power Plant (423 MW), Humboldt Bay Power Plant (105 MW), three mobile combustion turbines (45 MW) and the Diablo Canyon Nuclear Power Plant (2,160 MW).

The fourth sentence of the second paragraph on page 2-12 of the DEIR is hereby revised as follows:

These fuels may be delivered by ~~truck~~barge to the Pier 70 marine terminal, one-half mile north of the plant, and then delivered to the site via a 20-inch residual fuel oil pipeline and a 12-inch distillate fuel pipeline.

The first sentence of the first full paragraph on page 2-38 is hereby revised as follow:

Generally speaking, steam is drawn from wells, ~~purified,~~ transported through insulated pipes, ~~pressurized,~~ and converted into electrical power.

The second paragraph on page 3-7 of the DEIR is hereby deleted.

~~It is noteworthy that the plants could eventually be sold without approval of the CPUC, so the physical and operational differences between restructuring with divestiture as currently proposed and without divestiture could, as a practical matter, be minimized or even eliminated, except in the period before market valuation of the plants. With restructuring and without divestiture of the four plants, the market value of the plants must by some means be established and approved by the CPUC no later than the end of 2001. Once market valuation occurs, the plants could be sold without CPUC approval. Thus,~~

~~implementation of restructuring itself could result in plants being sold after their market value is established. PG&E would not be required to sell its plants, and it is not certain that the plants would be sold.~~

The third sentence of the fourth paragraph on page 4.1-1 of the DEIR is hereby revised as follows:

Sonoma County is urbanizing,...

The last sentence of the second paragraph on page 4.5-21 of the DEIR is hereby revised as follows:

Local NSCAPCD regulations limit emissions of particulate matter for each operating unit to 40 pounds per hour and hydrogen sulfide to ~~0.44 pounds~~ 50 grams per gross megawatt hour.

The last sentence of the fourth paragraph on page 4.5-34 of the DEIR is hereby revised as follows:

The City of Antioch is located to the ~~east~~west of the site, and the City of Oakley is located to the ~~west~~east.

The first paragraph on page 4.5-80 of the DEIR is hereby revised as follows:

The principal reason for the difference in power plant emissions estimates is the difference in Bay Area electric power generation projections from which the emissions estimates are derived. For example, the electric power generation projections developed by using a model known as UPLAN (and used for the '97 *Clean Air Plan* power plant emissions estimates) predict electric power generation in 2000 from the steam turbines of 8,536 GWh. In contrast, the electric power generation modeling prepared for this report predicts Bay Area generation that is interpolated to be between 9,220 ~~9,724~~ GWh (baseline) and 18,029 ~~18,534~~ (A-Max) in 2000 (not including the combustion turbines and assuming that Hunters Point operates just to support reliability needs on the San Francisco peninsula).¹ Likewise, in 2003, the '97 *Clean Air Plan* predicts a generation rate of 8,734 GWh whereas the modeling results for this report provides the basis for a prediction of a generation rate of between 9,948 ~~11,964~~ to 16,715 ~~18,732~~ GWh (~~not including the existing combustion turbines, but including a future 480 MW power plant assumed to replace the Hunters Point Power Plant~~).

Added to the references on page 4.5-82 are the following:

Baulch, D.L., R.A. Cox, P.J. Crutzen, R.F. Hamilton, F.A. Kerr, J. Troe, and R.P. Watson, *Evaluated Kinetic and Photochemical Data for Atmospheric Chemistry*, J. Phys. Chem. Ref. Data, Vol 11, 1982.

Bay Area Air Quality Management District, *Air Quality and Urban Development, Guidelines for Assessing Impacts of Projects and Plans*, November 1985.

Bay Area Air Quality Management District, *Results from the 1991-92 Pilot Study of Wintertime PM-10 in the San Francisco Bay Area*, September 1992.

Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, April 1996.

Bay Area Air Quality Management District, *Bay Area '97 Clean Air Plan*, December 1997.

California Air Resources Board, *Nature and Causes of the PM-10 Problem in California*, May 1987.

Added to the references on page 4.5-84 is the following:

Seinfeld, J.H., *Atmospheric Chemistry and Physics of Air Pollution*, John Wile & Sons, pp. 164-169, 1986.

The first full sentence on page 4.9-6 of the DEIR is hereby revised as follows:

The areas most impacted appear to lie within the fuel tank farm and in the part of the plant devoted to customer energy service/~~safety, health and claims~~.

Pacific Gas and Electric (PG&E) Company's contractor, Fluor Daniel GTI, has completed a Phase II Environmental Site Assessment and Risk Assessment for each plant to be divested. The findings of the Phase II Environmental Site Assessment and Risk Assessment for the Pittsburg and Contra Costa Power Plants are summarized in this section. The findings of the Phase II Environmental Site Assessment and Risk Assessment for the Potrero Power Plant are summarized in the response to Comment F33. Results of the Phase II Environmental Site Assessment and Risk Assessment for the Geysers Power Plant are summarized in the response to Comment T10. The findings and conclusions of the Phase II investigations and Risk Assessments do not modify the analysis nor the conclusions of the DEIR.

Page 4.9-9 of the DEIR is amended as follows to reflect the information presented in Fluor Daniel GTI's Phase II Environmental Site Assessment for the Contra Costa Power Plant:

The purpose and objectives of the Phase II Environmental Site Assessment for the Contra Costa Power Plant were:

- to conduct subsurface testing to investigate issues identified in CDM's Phase I Environmental Site Assessment and establish a baseline definition of chemical distribution;
- to present, summarize, and evaluate data collected during the subsurface testing to determine the nature and extent of any impact on soil and groundwater;
- to conduct and present the results of a Baseline Health Risk Assessment (BHRA);

- to establish cleanup levels for chemicals which, based on the BHRA and regulatory requirements, are likely to require remediation; and
- to develop and present reasonable approaches for remediating impacted soil, groundwater and sediment.

Fluor Daniel GTI prepared a soil and groundwater sampling plan for the plant site; a summary of the work that was completed during the Phase II subsurface testing is provided below.

Subsurface Testing Completed Between September and December 1997:

- drilled 343 soil borings, including hand augured borings;
- collected and analyzed 878 soil samples from the borings and 2 soil pile composite samples;
- installed 69 temporary groundwater monitoring wells;
- installed 7 permanent groundwater monitoring wells;
- collected and analyzed 29 groundwater samples from the 7 newly installed wells, 11 existing permanent monitoring wells, and 4 existing sump wells; and
- measured liquid levels in all wells.

The data collected during the Phase II subsurface testing was used to further define site characteristics, to describe the nature and extent of chemicals in soil and groundwater, and to define background concentrations for comparison to site concentrations. A summary of the soil and groundwater testing results is provided below.

Soil Results:

- Volatile Organic Compounds (VOCs) – Methylene chloride was detected at very low concentrations, which was believed to be due to laboratory contamination. Four other VOCs were detected at low concentrations. The highest concentration of any VOC was methylene chloride at 0.04 milligrams per kilogram (mg/kg).
- Total Petroleum Hydrocarbons (TPH) – TPH were identified at concentrations over 300 mg/kg in several areas across the site, with the highest concentration being 1,900 mg/kg.
- Polynuclear Aromatic Hydrocarbons (PAHs) – PAHs were identified in several areas and generally associated with TPH. The highest concentration of total PAHs detected was 56.7 mg/kg.
- Metals – Metals concentrations above calculated background levels were identified in all areas analyzed for metals. Of note is the presence of several metals in subsurface soil samples in the Raw Water Clarifier Sludge Storage Area.

- Polychlorinated Biphenyl (PCBs) – PCBs were detected in two areas of the site. The highest PCB concentration detected was Aroclor 1260 at 0.036 mg/kg.
- Asbestos – No asbestos was detected or observed.

Groundwater Results:

- VOCs – VOCs were detected at low concentrations in two areas. The highest VOC concentration was naphthalene at 190 micrograms per liter (µg/L).
- TPH – Hydrocarbons were found in the vicinity of the Area 2 leach mound, the foot of the marine dock, and at scattered locations. The highest concentration was 14 milligrams per liter (mg/L).
- PAHs – PAH constituents were detected in three areas. The highest PAH concentration was naphthalene at 56 µg/L.
- Metals – Eleven metals were detected in groundwater across the site.
- PCBs – No PCBs were detected in the 28 groundwater samples analyzed.

As part of the Phase II study, a Baseline Health Risk Assessment was done to determine whether concentrations of chemicals detected in soil and groundwater could present an unacceptable risk to human health and the environment, given the assumptions made for the risk assessment. The acceptable level of risk established for the project was consistent with that typically allowed by state and federal environmental agencies, as follows:

- (a) For cancer-causing chemicals (carcinogens): a cumulative (sum of risk posed by all chemicals) incidental increase in risk to human health not exceeding 1 in 100,000.
- (b) For chemicals having other toxic effects (non-carcinogens): a cumulative toxic effect not having a hazard index exceeding 1.0.

Health risks were calculated for three receptor populations, including the current and future on-site workers, current and future construction workers, and current groundskeepers. The risk assessment showed there to be no unacceptable risks to the three human receptor populations. Fate and transport modeling showed there to be no chemicals that would potentially pose an unacceptable risk to ecological receptors at the San Joaquin River via groundwater flow.

In addition to the risk assessment, Fluor Daniel GTI reviewed cleanup levels established in environmental laws and regulations and in previous remediation requests made by environmental agencies having jurisdiction over the Contra Costa Power Plant. The review of clean-up levels established by regulatory agencies showed that since the shallow groundwater beneath the site has been designated as a potential future source of drinking water, the maximum contaminant levels (state and federal) for drinking water are applicable clean-up levels for the groundwater. The review also showed that a regulatory

agency would likely require treatment of petroleum hydrocarbons in soil and groundwater to 300 mg/kg and 100 µg/L, respectively.

Fluor Daniel GTI compared the data collected during the Phase II investigations against the cleanup levels that were determined in the review of regulatory requirements. On that basis, the following issues were identified in the Phase II report as those in which a regulatory agency would likely require remediation:

- Remedial Issue I addresses remediation of arsenic in groundwater at locations where concentrations exceed the maximum concentration level (MCL).
- Remedial Issue II addresses remediation of petroleum hydrocarbons in soil at locations where concentrations exceed 300 mg/kg.
- Remedial Issue III addresses remediation of petroleum hydrocarbons in groundwater where concentrations exceed 100 µg/L.

In addition to those remedial issues, potential future environmental liabilities may be incurred by PG&E. These liabilities are different from those previously discussed in the Phase II report in that a triggering event must occur before they will be recognized. The two future potential environmental liabilities that have been identified for the Contra Costa Power Plant and their triggering events are:

- Potential liability for impacted soil and/or groundwater under petroleum storage tanks, which may be triggered when the tanks are removed.
- Potential liability for impacted soil and/or groundwater under rock blotters, transformers and other permanent structures, which may be triggered when the structures are removed.

Page 4.9-11 of the DEIR is amended as follows to reflect the information presented in Fluor Daniel GTI's Phase II Environmental Site Assessment for the Pittsburg Power Plant site:

The purpose and objectives of the Phase II Environmental Site Assessment for the Pittsburg Power Plant were:

- to conduct subsurface testing to investigate issues identified in CDM's Phase I Environmental Site Assessment and establish a baseline definition of chemical distribution;
- to present, summarize, and evaluate data collected during the subsurface testing to determine the nature and extent of any impact on soil and groundwater;
- to conduct and present the results of a Baseline Health Risk Assessment (BHRA);
- to establish hypothetical cleanup levels for chemicals which, based on the BHRA and regulatory requirements, are likely to require remediation; and
- to develop and present reasonable approaches for remediating impacted soil, groundwater and sediment.

A summary of the work that was completed during the Phase II subsurface testing is provided below.

Subsurface Testing Completed Between September and December 1997:

- drilled 574 soil borings, including hand augured borings;
- collected and analyzed 1,458 soil samples;
- collected and analyzed 21 sediment samples;
- installed 33 temporary groundwater monitoring wells;
- collected and analyzed 242 groundwater samples from hydropunch points, temporary well points, temporary monitoring wells, and existing monitoring wells; and
- measured liquid levels in selected wells.

The data collected during the Phase II subsurface testing was used to further describe site characteristics, to describe the nature and extent of chemicals in soil and groundwater, and to define background concentrations for comparison to site concentrations. A summary of the soil and groundwater testing results is provided below.

Soil Results:

- Volatile Organic Compounds (VOCs) – VOCs were detected at low concentrations sporadically across the site. Work performed in Phase IIB did not confirm the presence of VOCs north of the power building that were reported in earlier studies.
- Total Petroleum Hydrocarbons (TPH) – Hydrocarbons were identified at concentrations over 100 mg/kg across the site. The maximum concentration was reported at 11,000 mg/kg in one soil sample collected north of Tank 1.
- Polynuclear Aromatic Hydrocarbons (PAHs) – PAHs were detected sporadically across the site, and generally were associated with TPH. The maximum concentration of total PAHs was detected at 32.83 mg/kg north of Tank 1.
- Metals – Metals concentrations above calculated background levels were identified in all areas analyzed for metals. Arsenic and beryllium exceeded the industrial PRGs.
- Polychlorinated Biphenyl (PCBs) – PCBs were detected around the power building. The highest PCB concentration detected was for Aroclor 1254 at 0.030 mg/kg.
- Asbestos – No asbestos was detected or observed.

Groundwater Results:

- VOCs – VOCs were detected along the southern property boundary and north of Tank 1. The maximum VOC concentration was total xylenes at 2.3 mg/L.
- TPH – Hydrocarbons were detected sporadically across the site. The maximum concentration was 690 mg/L north of Tank 1.
- PAHs – PAH constituents were detected in Areas 1 and 2. The maximum PAH concentration was acenaphthylene at 0.73 mg/L north of Tank 1.
- Metals – Fifteen metals were detected in groundwater across the site. Some levels exceeded the MCLs.
- PCBs – No PCBs were detected in the groundwater samples analyzed.

A Baseline Health Risk Assessment was done to determine if concentrations of chemicals detected in soil and groundwater presented an unacceptable risk to human health and the environment, given the assumptions made for the risk assessment. The acceptable level of risk established for this project was consistent with that typically allowed by state and federal environmental agencies, as follows:

- (a) For cancer-causing chemicals (carcinogens), a cumulative (sum or risk posed by all chemicals) incidental increase in risk to human health not exceeding 1 in 100,000.
- (b) For chemicals having other toxic effects (non-carcinogens), a cumulative toxic effect not having a hazard index exceeding 1.0.

Health risks were calculated for two receptor populations, including the current and hypothetical future on-site commercial workers, and current and hypothetical future construction workers. The risk assessment showed there to be no unacceptable risks to the two human receptor populations from exposure to surface and subsurface soil. However, the report noted that an unacceptable risk might be posed to hypothetical future on-site commercial workers through potential future contact with groundwater. Therefore, VOCs, PAHs and metals in groundwater were considered in the remedial issue evaluation.

Fluor Daniel GTI reviewed cleanup levels established in environmental laws and regulations and in previous remediation requests made by environmental agencies having jurisdiction over the Pittsburg Power Plant. The review of clean-up levels established by regulatory agencies showed that since the shallow groundwater beneath the site has been designated as a potential future source of municipal, agricultural and domestic water supply, the maximum contaminant levels (state and federal) for drinking water would likely be applicable clean-up levels for the groundwater. The review also showed that a regulatory agency would likely require treatment of petroleum hydrocarbons in soil and groundwater to 400 mg/kg and 0.1 mg/L, respectively.

Data collected during Phase II investigations were compared against the cleanup levels that were determined in the risk assessment and in the review of regulatory requirements. Consequently, the following issues were identified in the Phase II report as those in which a regulatory agency would likely require remediation:

- Remedial Issue I addresses remediation of TPH in soil exceeding the established clean-up level of 400 mg/kg.
- Remedial Issue II addresses remediation of TPH and PAHs in groundwater where concentrations exceed 0.1 mg/L for TPH, and exceed the respective maximum contaminants levels (MCLs, where available) for PAHs or risk derived clean-up levels for PAHs.
- Remedial Issue III addresses remediation of VOCs in groundwater where concentrations exceed MCLs.
- Remedial Issue IV addresses remediation of metals in groundwater where concentrations exceed MCLs.

In addition to those remedial issues, several potential future environmental liabilities may be incurred by PG&E. These liabilities are different from those previously discussed in this report in that a triggering event must occur before they will be recognized. The three future potential environmental liabilities that have been identified for the Pittsburg Power Plant and their triggering events are:

- Potential liability for impacted soil and/or groundwater under petroleum storage tanks, which may be triggered when the tanks are removed.
- Potential liability for impacted soil and/or groundwater under rock blotters, transformers and other permanent structures, which may be triggered when the structures are removed.
- Potential liability for impacted soil and/or groundwater beneath RCRA units.

Page 4.9-25 of the DEIR is hereby amended with the following additional references:

Fluor Daniel GTI, Phase II Environmental Site Assessment: Contra Costa Power Plant, prepared for Pacific Gas and Electric Company, San Francisco, California, June 1998.

Fluor Daniel GTI, Phase II Environmental Site Assessment: Pittsburg Power Plant, prepared for Pacific Gas and Electric Company, San Francisco, California, June 1998.

The second sentence of the second full paragraph on page 4.11-5 of the DEIR is hereby revised as follows:

The Muir Station in Martinez is the nearest station, located roughly 2515 miles to the west.

The partial sentence at the top of page 4.12-10 of the DEIR is hereby revised as follows:

...generation and total uninterruptable load would be in balance should a separation occur during the peak ~~of~~or mid-peak periods.

The text for the “Timing” of Mitigation Measure 4.14-1 on page 4.14-7 is hereby amended as follows:

Timing: Approved by CPUC mitigation monitor of archaeological mitigation program at least 10 business days prior to transfer of ownership of the Geyserseach plant; review implementation reports upon submittal.

The footnote 1 on page 6-9 of the DEIR is hereby deleted.

[†]—~~As noted in Chapter 3, once the plants are market-valued, PG&E could sell or otherwise transfer the power plants without CPUC approval. This analysis assumes that PG&E would retain and operate the plants.~~

The first full sentence on page C-18 of the DEIR is hereby deleted.

~~return. Under Section 377 of AB 1890, after 2001 the IOUs may sell these plants without CPUC approval after the plants have been market-valued.~~

The sixth bullet on page G-3 of the DEIR is hereby amended as follows:

~~Heat rates and other generation characteristics were updated for all PG&E fossil plants pursuant to amended Reliability Must-Run Agreement (RMRA) schedules between PG&E and the ISO~~ Heat rates and other generation characteristics were updated for all PG&E fossil-fueled power plants pursuant to amended Regulatory Must-Run Agreement (RMRA) schedules between PG&E and the ISO. In addition, the Potrero Unit 3 heat rate was updated at its higher levels of generation to reflect new information garnered from PG&E's 1998 Title V submittal to the U.S. EPA. This updated heat rate information was received in time to be reflected in the 2005 modeling results.

Tables G-1 through G-20 of Appendix G of the DEIR, are hereby revised to replace the “Σ” heading for the rows indicating plant totals with the heading “Plant Total.” In addition, the following explanatory note is added to Tables G-1 through G-18:

NOTE: Plant totals shown for the columns labeled “Net Capacity,” “Generation,” and “Tons” are simple arithmetic sums of the figures for the individual generating units. (Note that some of these column sums may not total exactly because values were rounded to the nearest whole number.) Plant totals for all other columns (i.e., those labeled “Capacity Factor,” “#/MWh,” and “#/MMBtu”) are values calculated for the plant as a whole, and are not arithmetic column totals.