

DOCKETED

Docket Number:	01-AFC-19C
Project Title:	SMUD Cosumnes Power Plant - Compliance
TN #:	244287-4
Document Title:	Executive Summary
Description:	N/A
Filer:	Patty Paul
Organization:	Ch2mhill/Carrier
Submitter Role:	Applicant Consultant
Submission Date:	8/1/2022 3:19:28 PM
Docketed Date:	8/1/2022

Executive Summary

This Executive Summary comprises the following sections: Section 1.1 is a project overview of the Application for Certification (AFC) of the proposed Cosumnes Power Plant (CPP) project. Section 1.2 provides a general project schedule, and Section 1.3 provides project ownership details. The project alternatives are discussed in Section 1.4. The environmental considerations are discussed in Section 1.5. The list of persons who prepared the AFC is referenced in Section 1.6.

1.1 Project Overview

The Sacramento Municipal Utility District (the District) proposes to develop a natural gas-fired generating facility south of the Rancho Seco Nuclear Plant (Rancho Seco Plant) in Sacramento County, 25 miles southeast of the city of Sacramento (see Figure 1.1-1). The proposed project will be located on a 30-acre parcel that is part of 2,480 acres owned by the District. It will be a high-efficiency, combined-cycle facility that will provide electricity to the District's customers.

The CPP facility will consist of:

- A nominal 1,000-megawatt (MW) combined-cycle generating facility, using natural gas-fired combustion turbines, steam turbines, and associated infrastructure. The plant will be constructed in two phases of 500 MW. Each phase will consist of two combustion turbines, one condensing steam turbine, and two heat recovery steam generators (HRSGs)
- A 230-kilovolt (kV) switchyard
- Approximately 0.4-mile-long new 230-kV transmission line from the switchyard on-site to the existing 230-kV switchyard at the Rancho Seco Plant
- Approximately 26 miles of District-owned natural gas supply line between the project and the Carson Ice-Gen Facility in Sacramento County
- Cooling water will be conveyed from the Folsom-South Canal to the site from a 0.4 mile connection to existing 66-inch diameter underground water line currently servicing the Rancho Seco Plant
- A package treatment plant will provide domestic water by treating surface water from the Folsom-South Canal pipeline
- Approximately 1.5 acres of stormwater detention
- A package treatment/leach system for sanitary wastes

The project site is located on approximately 30 acres in Section 29, Township 6N, Range 8E Mount Diablo base and meridian, adjacent to the Rancho Seco Plant (see Figure 1.1-2). CPP is

located on the southeastern quarter of APN 140-0050-010, and on the southwestern quarter of APN 140-0050-008. Parcel numbers and the names of the owners of land near the site are included in Appendix 1A.

Clay East Road borders the project site to the south. Twin Cities Road (State Route [SR] 104) is the closest road to the north and west of the project site. Two state highways serve the project area, including Twin Cities Road and SR 99 shown on Figure 1.1-1. The Union Pacific Railroad operates the active main line tracks that parallel Twin Cities Road to the north. An active railroad spur crosses Twin Cities Road to the existing Rancho Seco Plant. The site is zoned AG-80, which is compatible with the land use designation for a power generation facility and was previously planned for Rancho Seco Unit 2.

A schematic arrangement of the plant on the 30-acre parcel is presented in Figure 1.1-3. Color figures of the site before and after construction are shown in Figures 1.1-4 and 1.1-5. A color figure of the transmission line is provided in Figures 8.11-2a and 2b.

At buildout, the CPP generating facility will consist of four General Electric 7FA combustion turbine generators (CTGs); equipped with dry, low oxides of nitrogen (NO_x) combustors; four HRSGs; two condensing steam turbine generators (STGs); deaerating surface condensers; mechanical-draft cooling towers; and associated support equipment providing a nominal total generating capacity of 1,000 MW. No auxiliary boilers will be used. Each phase will use a 9-cell mechanical-draft evaporative cooling tower to provide cooling water for the steam turbine surface condenser and other cooling loads. Additional auxiliary equipment will include a 370-horsepower (hp) electric fire pump.

The CPP facility would use raw water from the Folsom-South Canal for cooling and process makeup water. The District presently has a contract for 75,000 acre-feet of water from the Bureau of Reclamation, for the purposes of electrical generation. Cooling water would be discharged to Clay Creek, according to the requirements and conditions of an National Pollution Discharge Elimination System (NPDES) permit for surface water discharge. Stormwater would be routed to a new 1.5-acre detention pond that will hold a volume of 100,000 cubic feet of water, and from there discharge to Clay Creek at a rate not to exceed the present discharge rate. Domestic water would be provided by treating Folsom-South Canal water to Title 22 standards using an on-site package treatment plant. Sanitary waste would be discharged to an on-site septic and leachfield system. Electricity from the project would be transmitted via approximately 0.4-mile of 230-kV transmission line routed along the existing PG&E 230-kV transmission line right-of-way from the CPP switchyard to the existing Rancho Seco Plant switchyard. The transmission line will be located entirely on property owned by the District.

Natural gas would be delivered to the project via an extension of the District-owned high-pressure pipeline ("the District Pipeline") connected to PG&E's backbone transmission system. The District gas pipeline is currently 20 inches in diameter and 51 miles long and connects to Lines 400 and 401 of PG&E's backbone transmission system near Winters, California. The District Pipeline terminates approximately 20 miles northwest of the CPP site at the Carson Ice-Gen Facility. A new 24-inch-diameter pipeline will be constructed from Carson Ice-Gen Facility to the CPP site. The route is approximately 26 miles long. The District evaluated several alternatives to determine the route that would have the lowest

potential for conflicts in land use, avoided most environmental impacts, and had the lowest cost.

1.2 Project Schedule

Construction of both phases of the CPP, including the linear routes will take approximately 44 months, from winter 2002 to summer 2006. Phase 1 is anticipated to take 24 months to complete, and Phase 2 is expected to be completed in 18 months, with a 2-to 3-month idle period between phases.

1.3 Project Ownership

The plant, transmission lines, and natural gas supply line will be owned and operated by the Sacramento Municipal Utility District.

1.3.1 Labor Agreements

As a public entity, the District requires its construction contractors to pay prevailing wages. The District had labor agreements during construction of its cogeneration and peaker projects. A good relationship has been established with Sacramento Sierra Building Trades Council. The District and the Council expect to enter into an agreement for this project.

1.4 Project Alternatives

A “No Project” Alternative was considered and rejected as inconsistent with the District’s purpose of having a generating facility, such as CPP, to provide clean, reliable, and cost effective electric power to the District’s customers and to provide ancillary services to the District’s grid. In addition, the No Project Alternative could result in greater fuel consumption and air pollution in the state because older, less efficient plants with higher air emissions would continue to generate power instead of being replaced with cleaner, more highly efficient plants such as CPP.

The possible alternative sites in the general vicinity of the proposed site were reviewed and found to be less acceptable than the site described in Section 1.1. Alternative routes for the natural gas line were also reviewed and found to be less acceptable than the chosen routes.

Several alternative generating technologies were reviewed resulting in the selection of a modern, yet conventional, combustion turbine combined-cycle arrangement for CPP using natural gas for fuel. The alternative technologies included conventional oil and natural-gas-fired plants, simple-cycle combustion turbines, biomass-fired plants, waste-to-energy plants, solar plants, wind generation plants, and others. None of these technologies were considered better than or equal to the combined-cycle technology selected for CPP. A complete discussion of project alternatives is presented in Section 9.0 of this AFC. Natural gas pipeline alternatives are presented in Section 6.0.

1.5 Environmental Considerations

The AFC evaluates sixteen areas of possible environmental impact from the proposed project, presented in Sections 8.1 through 8.16. Appropriate mitigation measures, as well as a plan for monitoring and compliance is discussed in each section. The possible effects of key areas are described briefly in this section.

1.5.1 Air Quality

The site is located in an area that is designated as nonattainment for state and federal ozone air quality standards, and for state fine particulate matter (PM₁₀) standards. An assessment of the impact to air quality was performed using detailed air dispersion modeling. The air impacts from the project will be mitigated by the advanced nature of the combustion turbine emission control technology. Additionally, emission reduction credits (ERCs) will be obtained to offset increases in emissions of volatile organic compounds (VOCs) and NO_x (both precursors of ozone), and of PM₁₀. The combination of the detailed air quality modeling analyses, and the proposed mitigation measures will result in the project having no significant adverse impact on air quality. See Section 8.1 and Appendix 8.1 for a detailed analysis of air quality.

1.5.2 Water Resources

The project will use raw water from the Folsom-South Canal that is part of the District's water rights. The CPP would use an average of 8,000 acre-feet per year (AFY) (9,000 AFY peak) for cooling and process needs. Domestic water will be supplied from the same source but will be processed through a package treatment plant prior to use. The project would use no groundwater.

The proposed project site is crossed by 3 ephemeral drainages, all of which join Clay Creek within 0.25 mile of the site. These drainages have distinct hydrologic features, and some vegetation that indicate they would be defined as jurisdictional wetlands, according to Army Corps of Engineers (ACOE) criteria. The project proposes to divert these drainages around the proposed site to support local drainage, minimize erosion in the project area, and to maintain the benefits of the drainages. The District proposes to construct an on-site detention basin that would capture essentially all site stormwater runoff. This will maintain the volume and rate of off-site runoff to that which presently occurs. As a result of using best management practices (BMPs) and other mitigation measures, no significant adverse impacts to water resources are anticipated.

1.5.3 Visual

The Rancho Seco Plant cooling towers are the most prominent visual features in the vicinity of the proposed facility. The most prominent features of the CPP facility will be the HRSG structure and its associated stack. The combustion turbine exhaust stacks will be approximately 160 feet tall.

Historically, plumes were emitted from the Rancho Seco Plant when weather conditions were suitable (i.e., during cold, humid weather). The CPP plant will also create water vapor plumes. Most will occur during nighttime and early morning hours. See Section 8.11 for a detailed description of the visual effects.

1.5.4 Biology

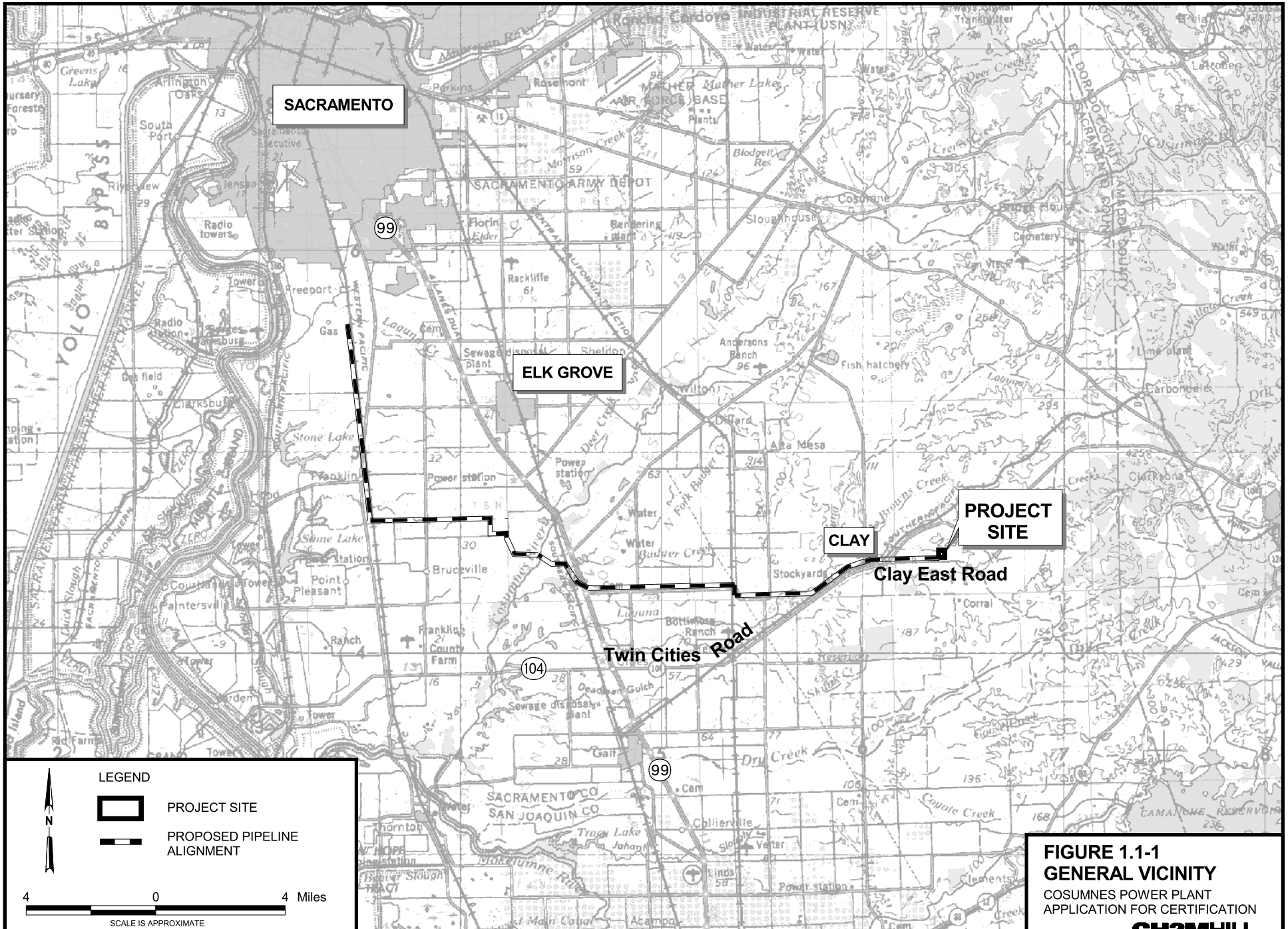
The proposed CPP site, the 230-kV transmission line, and water supply pipeline routes are currently dominated by annual grassland, used as pasture. Vernal pools are present north and east of the project, and the ephemeral drainages support some vernal pool plant species. Fairy shrimp, tiger salamander, and other vernal pool species occur in the vicinity, but have not been observed on the project site. The gas pipeline for the proposed project passes through industrial, urban, landscape, agriculture (row crop, vineyard, and pasture), and railroad right-of-way habitats, and would cross three significant waterways (Cosumnes River, Badger Creek, and Laguna Creek). Swainson's hawks nest throughout South Sacramento County and are likely to occur near pipeline construction areas. Construction along the pipeline will be preceded by field surveys of the intended alignment, and construction scheduled to avoid sensitive nesting periods for birds potentially affected. Large waterways will generally be crossed using trenchless technologies such as Horizontal Directional Drilling (HDD) that will leave riparian vegetation and water quality undisturbed. By avoiding, minimizing, and, if necessary, compensating for affected habitats, the project will not convert any significant biological habitat, nor cause take or significant effect on any special status or wildlife species. Details are described in Section 8.2.

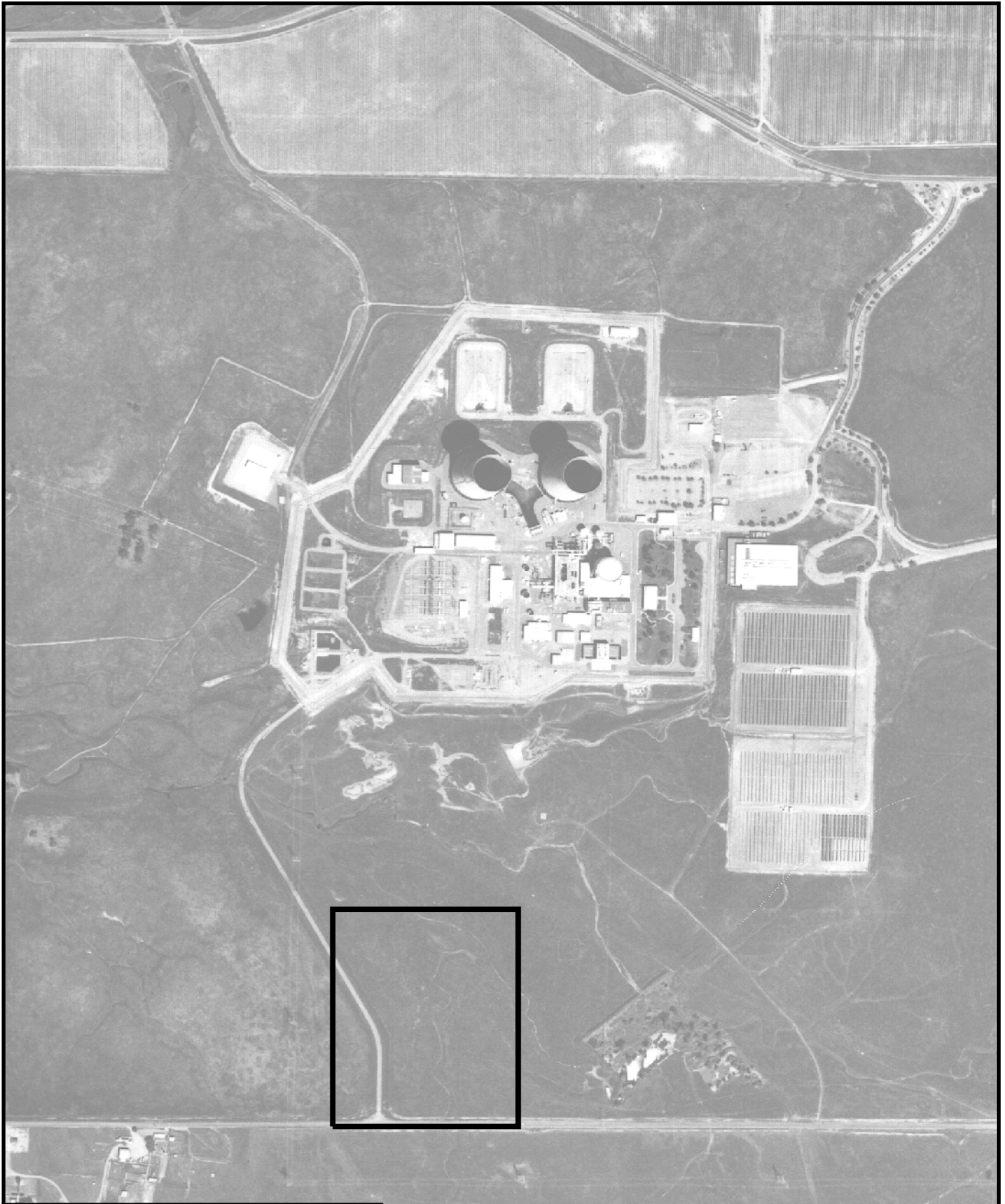
1.5.5 Noise

Ambient noise measurements were taken to determine the average L_{90} (the noise level that is exceeded during 90 percent of the measurement period) nighttime noise level at the nearest residence to the site (i.e., sensitive receptor). Measurements taken over 2 nights had an average L_{90} of 41 and 37 decibels on the A scale (dBA). Noise modeling was used to determine the contribution to the nighttime ambient levels the plant would make during operations. Comparisons of existing quiet-period noise levels to the predicted cumulative noise levels, with the proposed plant in operation, indicate that at the noise-sensitive area closest to the CPP facility (800 feet away), cumulative noise levels will increase to 56 dBA above existing background levels. Noise levels at the second closest receptor (5,100 feet away) are expected to be 42 dBA. Details are described in Section 8.5.


1.6 Persons Who Prepared the AFC


Persons with primary responsibility for the preparation of each section of this AFC are listed in Appendix 1B.





LEGEND

 PROJECT SITE

 N

500 0 500 Feet

SCALE IS APPROXIMATE

FIGURE 1.1-2
PROPOSED PROJECT SITE
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION

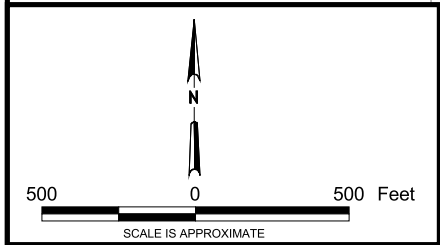
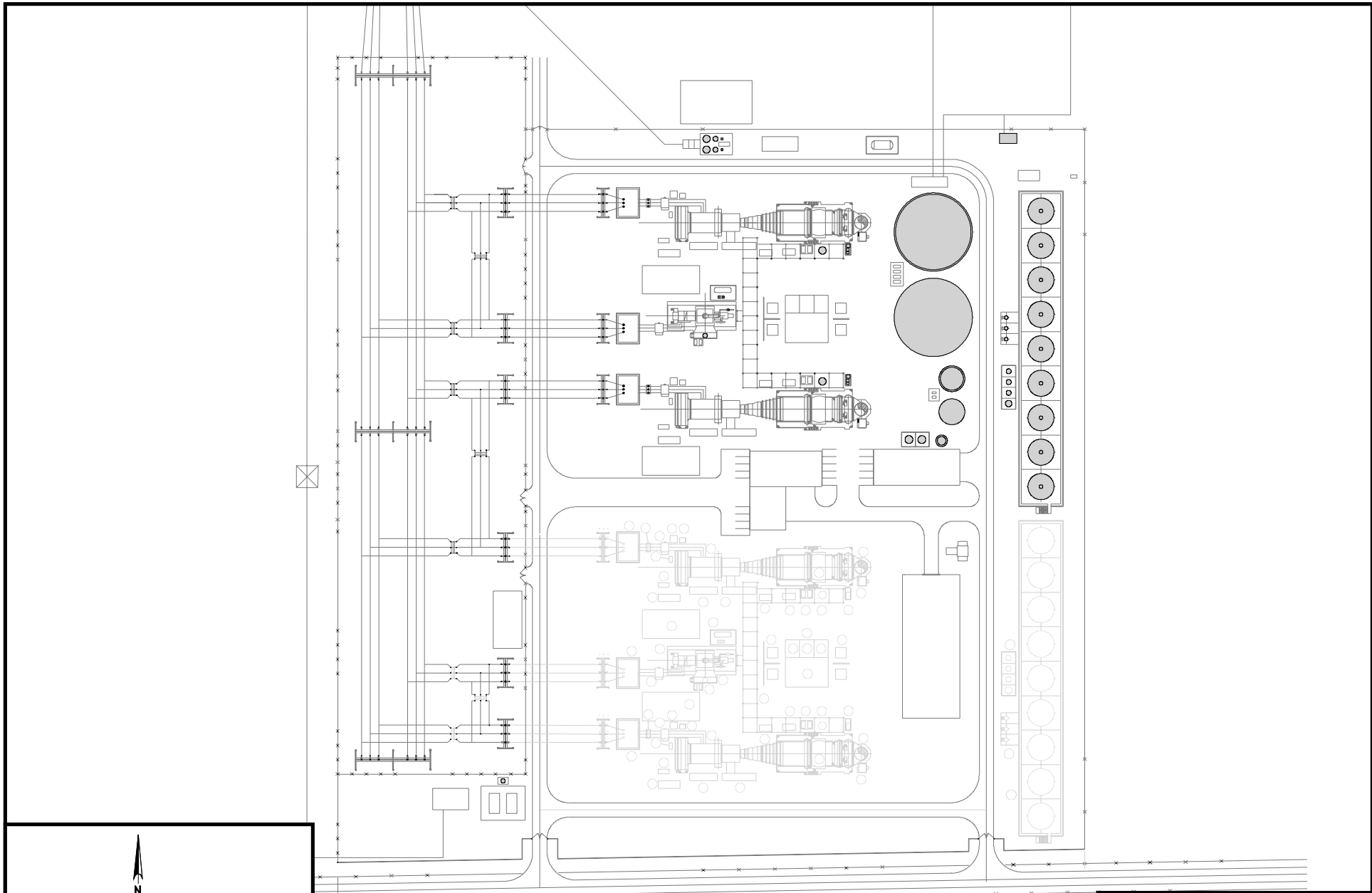


FIGURE 1.1-3
SITE PLAN
 COSUMNES POWER PLANT
 APPLICATION FOR CERTIFICATION
CH2MHILL



FIGURE 1.1-4
APPEARANCE OF THE SITE BEFORE
CONSTRUCTION, LOOKING NORTH
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION

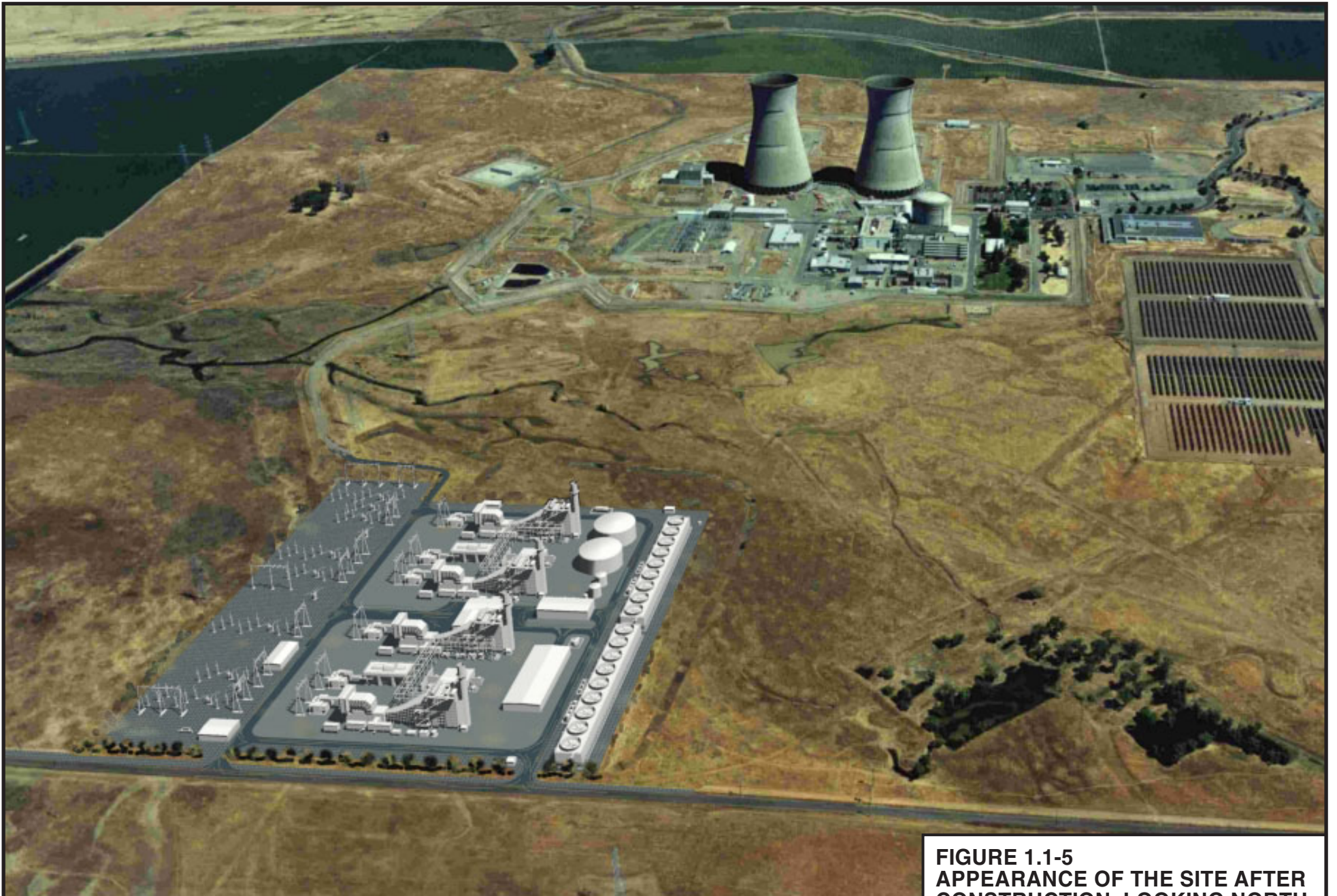


FIGURE 1.1-5
APPEARANCE OF THE SITE AFTER
CONSTRUCTION, LOOKING NORTH
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION