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5.0 PROJECT ALTERNATIVES

5.1 Introduction

The following sections identify and compare the relative merits of alternatives to the proposed project as required by the CEQA guidelines. According to CEQA Guidelines §15126.6(a), “An EIR shall describe a range of reasonable alternatives to the proposed project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project...” Additionally, §15126.6(c) of the CEQA Guidelines stipulates that the EIR should identify alternatives that were considered but rejected as infeasible during the scoping process. Section 15126.6(f) of the CEQA Guidelines stipulates that the range of alternatives required in an EIR is governed by a rule of reason in that the EIR must discuss only those alternatives "necessary to permit a reasoned choice" and those that could feasibly attain most of the basic objectives of the project. Both the identified feasible project alternatives as well as the alternatives rejected as infeasible are discussed further below.

In accordance with §15126.6(e) of the CEQA Guidelines, the "No Project" Alternative shall be evaluated along with its impact. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. An analysis of the No Project Alternative is discussed below.

Two project alternatives are proposed for consideration, including the No Project Alternative. Project alternatives were developed by considering different engineering designs that would aid LADWP in complying with its future RECLAIM annual allocations and meet the terms of the Compliance Agreement it entered into with the SCAQMD.

5.2 Alternatives Rejected as Infeasible

In accordance with CEQA Guidelines §15126.6(c), a CEQA document should identify any alternatives that were considered by the lead agency, but were rejected as infeasible during the scoping process and briefly explain the reason underlying the lead agency’s determination. Section 15126.6(c) also states that among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts. Furthermore, CEQA Guidelines §15126.6 (f)(2)(B) indicates that if the lead agency concludes that no feasible alternative locations or project alternative for the project exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. Table 5-2.1 identifies the project alternatives that were initially considered by the SCAQMD but were subsequently rejected as infeasible. An alternative location is not feasible, as the project consists of modifications to an existing facility, which contains available natural gas, water supply, and electric transmission infrastructure necessary to support the project.

**Table 5.2-1
Description of Alternatives Rejected as Infeasible**

Rejected Alternative	Description	Comment
#1 – Different Air Pollution Controls	Rather than installing SCR systems on the new CTGs at the VGS, LADWP would install other air pollution controls such as: SCONOx, water injection, or steam injection.	The SCAQMD looked at these controls initially since no ammonia is associated with their use. However, the use of SCONOx was not feasible since the manufacturer of this technology did not submit a bid on LADWP's Request for Proposal (RFP) for the installation of control equipment on the new CTGs. As to water injection and steam injection, the new CTGs will have water injection as a built-in pollution control. However, the use of this technology alone would not satisfy the SCAQMD's regulatory or permitting requirements. To receive permits to construct and operate, the project must be equipped with control technology that meets both Best Available Control Technology (BACT), which is consistent with EPA's lowest achievable emission rate. Only the SCR manufacturers that bid on LADWP's RFP meet the BACT and lowest achievable emission rate criteria.
#2 – Import More Out-of-Basin Power	Rather than install the new CTGs, import more out-of-Basin power.	Currently, a significant portion of the electricity that LADWP provides to its customers is from out-of-Basin. Historically, LADWP has purchased inexpensive out-of-Basin power for its customers' use. This practice is expected to continue with or without the proposed project. However, LADWP's ability to import more out-of-basin power is limited. This is partly due to its recent decision to divest itself from 750 MW coal-powered station in Nevada. The LADWP made this divestment decision for environmental and system reliability reasons. LADWP believes that it is more environmentally sound to produce electricity from clean fuel sources such as natural gas rather than coal, which is inherently more polluting.

**Table 5.2-1 (Concluded)
Description of Alternatives Rejected as Infeasible**

Rejected Alternative	Description	Comment
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<p>#2 – Import More Out-of-Basin Power (cont'd)</p>		<p>Furthermore, to prevent future brown or blackouts, similar to the ones experienced throughout California in the summer of 2000, LADWP believes that new power is needed in-Basin. Therefore, the installation of the new CTGs is necessary to meet these environmental and system and reliability goals as well as aid LADWP in complying with its future RECLAIM annual allocations, which must also comply with its Compliance Agreement with the SCAQMD.</p>
<p>#3 – Energy Conservation</p>	<p>Rather than install the new CTGs, use more renewable energy sources (e.g., solar, wind, hydroelectric, etc.)</p>	<p>The LADWP currently has an aggressive energy conservation program that consists of 14 separate initiatives. For example, LADWP currently is installing rooftop solar systems, assisting its largest customers by installing energy storage systems to shift electrical load from daytime to nighttime hours, and providing electric buses and solar-powered recharging stations for electric buses at a local community. However, even with these actions, there will not be sufficient energy to meet in-Basin demands. Therefore, LADWP must install the new CTGs to provide cleaner power and help it comply with its future RECLAIM annual allocations, which must also comply with its Compliance Agreement with the SCAQMD.</p>
<p>#4 - Alternative Site</p>	<p>Rather than modify an existing facility, construct a new power plant</p>	<p>Project is a modification of an existing facility. Advantages of the site would be lost if another location were proposed.</p>

5.3 Project Alternatives

Two project alternatives have been identified for the proposed project, including the No Project Alternative. It should be noted that the range of reasonable alternatives to the proposed project is relatively limited for several reasons. As noted elsewhere in this [Draft/Final](#) EIR, LADWP has entered into a Compliance Agreement, which is a legally binding contractual agreement between LADWP and SCAQMD. The Compliance Agreement specifically stipulates the number of CTGs to be installed at the VGS. The Compliance Agreement also stipulates when the CTGs and SCR must be operational. Consideration of some project alternatives, such as alternative locations and types of BACT (e.g., SCONOX) (as discussed in Table 5.2-1), were precluded in order for the Order of Abatement to comply with RECLAIM’s allocations, and to comply with SCAQMD Regulation XIII and/or Rule 2005 BACT requirements. Other LADWP facilities are also subject to conditions under the Order of Abatement.

The project alternatives were developed by modifying one or more components of the proposed project taking into consideration the project's limitations as to space, permitting requirements, and Compliance Agreement stipulations. Unless otherwise stated, all other components of each project alternative are identical to the proposed project.

5.3.1 Alternative A – No Project

The No Project Alternative would consist of the continued operation of the power generating station with the existing equipment. The new CTGs with associated pollution control equipment (e.g., SCR systems) needed to aid LADWP in meeting future RECLAIM requirements as well as improve its ability to provide reliable in-Basin power would not be installed. Thus, the goals of the Compliance Agreement, a legally binding contractual agreement between LADWP and SCAQMD, would not be met. This could result in a potential exceedance of LADWP's annual allocations of NO_x emissions, which could subject LADWP to substantial fines and penalties, and a reduced ability to meet peak energy demands in-Basin and in California.

5.3.2 Alternative B – Install a Dry Cooling System

An alternative to wet cooling towers is dry air cooling. Air is substituted for water to provide the necessary cooling to condense the exhaust steam from the steam turbine. While reducing water use and discharge, this alternative has several disadvantages in terms of plant efficiency, capital cost, and space utilization. Dry cooling requires the use of electric fans to move air across the heat exchangers. These electric fans would reduce plant efficiency, measured as net power output from the plant, by an estimated 10 percent. Because air is a less efficient heat exchange media than water, dry air cooling requires substantially larger heat exchangers, and a substantially larger footprint for installation, than the proposed wet cooling system.

5.4 Alternatives Analysis

This section contains an analysis of project alternatives as they relate to each environmental impact area evaluated in the [Draft/Final](#) EIR. Both alternatives are separately discussed for each environmental impact area.

5.4.1 Air Quality

The following air quality analysis for the feasible alternatives to the proposed project is based on the same methodologies that were used to estimate the construction and operation-related impacts associated with the implementation of the proposed project. See Appendix C for the assumptions and methodologies used in this analysis.

5.4.1.1 Alternative A - No Project

Alternative A would not generate the significant adverse air quality impacts from construction-related activities. Additionally, increased ammonia emissions from operation of the SCR system at the project site would not occur. However, due to lack of emission controls on the existing

equipment at the facility and emission limitations imposed by the NO_x RECLAIM program, LADWP would be unable to generate an equivalent level of electric power from VGS, compared to the proposed project. Furthermore, LADWP would violate its Compliance Agreement with the SCAQMD resulting in fines and other penalties.

5.4.1.2 Alternative B – Install a Dry Air Cooling System

The construction schedule for this alternative would be substantially longer than the schedule for the proposed project because the dry cooling systems require substantially more space for installation, requiring additional grading and site preparation, construction of foundations, and erection of the cooling units themselves. The number and type of construction equipment and workforce would be anticipated to be the same (but for a longer time period) as for the proposed project, so peak daily construction-related emissions are expected to be the same. Both the proposed project and Alternative B generate significant CO, VOC, NO_x, and PM₁₀ emissions from construction activities. See Table 4.2-4 in Chapter 4 for the overall peak daily emissions during construction for the proposed project.

The use of dry cooling would avoid the generation of PM₁₀ emissions associated with the wet cooling towers. However, the reduction in PM₁₀ emissions would not reduce the impact of PM₁₀ emissions to levels of insignificance. Further, dry cooling requires more energy for operation than wet cooling, and would lower the net power output from the facility by an estimated 10 percent.

5.4.2 Geology/Soils

No significant impacts to geology/soils would result from implementation of Alternative A, as no changes to existing operations would occur.

Alternative B would not be expected to result in substantially different geology/soils impacts than those expected from the proposed project, as the changes associated with the alternative would occur within the confines of the existing project site. As noted in Subsection 4.4.3, after mitigation, no significant adverse geology/soils impacts at the project site are anticipated for the equipment installations.

5.4.3 Hazards and Hazardous Materials

No significant impacts from hazards or hazardous materials would result from implementation of Alternative A, as no changes to existing operations would occur.

Implementation of Alternative B would require ammonia use comparable to the proposed project; therefore, the hazards associated with this alternative are expected to be comparable with those associated with the proposed project.

5.4.4 Hydrology/Water Quality

Alternative A would not change existing wastewater discharge profiles and volumes from the VGS facility. Therefore, Alternative A would not create any new or additional hydrology/water quality impacts.

Implementation of Alternative B would result in reduced water discharge. However, no adverse impacts related to water discharge were identified for the proposed project. Only the use of aqueous ammonia during project operation was determined to have the potential to adversely impact water quality. As equal amounts of aqueous ammonia would be used by Alternative B and the proposed project, this alternative would yield no change in water quality from that of the proposed project. Because there is expected to be no significant impact from the project as proposed, similarly there would be no significant impact to hydrology/water quality from Alternative B.

5.4.5 Noise

Because no changes to existing operations at the VGS facility would occur, no construction-related noise impacts would occur as a result of Alternative A. Furthermore, existing operation-related noise levels at the VGS facility would remain unchanged under Alternative A.

Alternative B involves modifications and additions within the existing LADWP project site's boundaries. As a result, noise levels generated by Alternative B would be equivalent to those generated by the proposed project. While implementation of this alternative would involve noise associated with industrial activities, none would include components that would generate substantially different noise during construction or operation than the proposed project.

5.4.6 Transportation/Traffic

Because no changes to existing operations at the project site would occur with Alternative A, no impacts to transportation/traffic would be expected.

Implementation of Alternative B would require a similar number of construction workers as for the proposed project. For operation-related activities, Alternative B would have equal impacts to the proposed project, since operational characteristics under this alternative will remain unchanged. Therefore, as with the proposed project, impacts to transportation/traffic are expected to be significant.

5.5 Conclusion

As the alternatives discussed above are primarily slight changes to the project site to account for engineering design considerations, the construction- and operation-related environmental impacts differences are not expected to be substantially different than those of the proposed project. With the exception of reduced PM10 emissions, implementation of the alternatives does not create a substantially different impact to the environment than the proposed project.

Section 15126.6 of the CEQA Guidelines indicates that a CEQA document shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each project alternative may be used to summarize the comparison. Table 5.5-1 lists the alternatives considered by the SCAQMD and how they compare to the proposed project. Table 5.5-1 presents project-specific environmental impacts, as well as mitigation measures, associated with the proposed project and the project alternatives for the environmental impact areas analyzed. The table also characterizes each impact area as to whether the proposed project or a project alternative would result in greater or lesser impacts relative to one another.

Alternative A is not consistent with Compliance Agreement between the SCAQMD and LADWP, which requires the repowering of VGS using electrical generating equipment installed with BACT. Alternative B results in similar impacts to the proposed project, but does not eliminate any of the significant adverse impacts associated with the proposed project, and would result in lower net power output from the facility for the same level of emissions. Therefore, the proposed project is the preferred alternative, since it will aid LADWP in complying with its Compliance Agreement with the SCAQMD; and allow LADWP to provide cleaner power.

**Table 5.5-1
Comparison of Adverse Environmental Impacts Associated with
Project Alternatives to the Proposed Project**

Environmental Topic	Proposed Project	Alternative A (No Project)	Alternative B (Dry Cooling)	Mitigation Measures	
Air Quality, Construction	Significant	Not Significant	Significant, equivalent to proposed project	Additional watering in addition to complying with Rule 403, proper equipment maintenance; low sulfur diesel; evaluate emission reduction retrofit technologies for construction equipment.	
Air Quality, Operation	Significant	Not Significant, less than proposed project	Significant, equivalent to proposed project	Low sulfur diesel; VOC Offsets	
Geology/Soils	Mitigated to insignificant level	Not Significant, less than proposed project	Mitigated to insignificant level, equivalent to proposed project	Foundation elements will set back a minimum of 200 feet from the pit walls	
	Hazards and Hazardous Materials	Significant	Not Significant, less than proposed project	Significant, equivalent to proposed project	Perform pre-start Job Safety Analysis; Manual shutdowns on tanks
	Hydrology/Water Quality	Not significant	Not Significant, less than proposed project	Not Significant, equivalent to proposed project	None Required
	Noise	Not significant	Not Significant, less than proposed project	Not significant, equivalent to proposed project	None Required
Transportation/ Traffic	Significant	Not Significant, less than proposed project	Significant	None identified	

6.0 CUMULATIVE IMPACTS

6.1 Introduction

“An EIR shall discuss cumulative impacts of a project when the project’s incremental effect is cumulatively considerable,...” (CEQA Guidelines §15130(a)). The assessment of cumulative impacts in this EIR includes a discussion of the potential cumulative effects of past, present, and probable future projects in the vicinity of the project site that may produce related or cumulative impacts affecting a given resource. The cumulative impact analyses in this section addresses the following:

- Do the impacts of individual projects, when considered together, compound or increase other environmental impacts?
- Will significant cumulative impacts result from individually minor but collectively significant projects taking place over a period of time?

According to §15130(b) of the CEQA Guidelines, “The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone.”

The environmental impact areas evaluated in this EIR are included in this section together with proposed appropriate mitigation measures for potential cumulative impacts.

6.2 Other Proposed Projects

Based upon information received from local planning agencies and individuals contacted to compile data for this section, projects with the potential to have cumulative impacts with the proposed project are discussed in this section. Currently, there are no significant projects planned by LADWP or currently underway at VGS that would create cumulative impacts when considered with the proposed project. With reference to the project currently underway to install a peaking turbine and ancillary equipment, construction for that project is expected to be completed prior to the start of construction activities associated with the currently proposed project.

The following projects are in various stages of planning, permitting, and/or construction in the vicinity of VGS (LADOT, 2001).

- A 550,000-square-foot self storage facility (LADOT EAF No. 1999-3266) at San Fernando Road and Branford Street, approximately one-half mile northwest of the project site
- A 300,000-square-foot light industrial development (LADOT EAF No. 1999-0352) at San Fernando Road and Osborn Street, approximately one mile northwest of the project site

- Two 25,000-square-foot industrial buildings (LADOT EAF No. 1998-0414) at Osborn Place and Glenoaks Boulevard, approximately one mile north of the project site
- A 115,000-square-foot maintenance facility (LADOT EAF No. 1999-2220) at Glenoaks Boulevard and Pendleton Street, approximately one mile east-southeast of the project site

6.3 Cumulative Effects

The cumulative effects of the projects discussed in Section 6.2 and the proposed project are assessed in the following subsections.

6.3.1 Air Quality

6.3.1.1 Construction Impacts

Depending on when the above identified projects are approved and permitted, the construction schedules may overlap with the construction of the proposed project. Some cumulative impacts may occur due to construction of these projects if they overlap with proposed project construction. The mitigation measures discussed in Section 4.2.6 should reduce the cumulative impacts to the maximum extent feasible, but not to insignificance. Remaining cumulative impacts are expected to be localized and temporary in nature and within the normal amount of construction activity that occurs daily in these highly industrial areas.

6.3.1.2 Operational Impacts

LADWP is currently installing a 47-MW CTG at VGS. The combined operating emissions associated with the 47-MW CCT and the proposed equipment will be significant for CO and PM10. The combined emissions are not expected to be significant for NO_x, VOC, or SO_x.

6.3.2 Geology/Soils

No unique geologic resources are located at the project site. Seismic hazards will be insignificant using proper design and construction standards. No cumulative impacts to geologic structures or processes are expected to occur from the combined construction or operation of the projects discussed in Section 6.2.

Since the mitigated project-related geology/soils impacts do not exceed the SCAQMD's significance criteria, consistent with CEQA Guidelines §15130(a), cumulative impacts to geology/soils are not expected from the implementation of the proposed project.

6.3.3 Hazards and Hazardous Materials

Most of the projects discussed in Section 6.2 that could contribute to cumulative impacts pose no substantial hazards or risk of upset because, based on available information, they do not utilize hazardous materials to a significant degree. Therefore, no significant cumulative impacts from hazards are expected. However, it should be noted that the specific industrial tenants are not

known at this time, so it is speculative as to whether or not cumulative hazard impacts could be significant.

6.3.4 Noise

No significant noise impacts from construction-related activities are anticipated as a result of the proposed project at the VGS. Considering the existing noise levels in the area of the project site and the potential from the proposed project, the cumulative impacts from operational noise are not expected to be significant. It should also be noted that the other projects would have to comply with applicable noise ordinances.

Since the project-related noise impacts do not exceed the SCAQMD's significance criteria, significant adverse cumulative noise-related impacts are not expected from the implementation of the proposed project.

6.3.5 Transportation/Traffic

As discussed in Section 4.7, the proposed project is not expected to create long-term impacts to traffic in the area of the VGS. Additionally, with the exception of one intersection near the VGS, the short-term construction impacts are considered insignificant and are not expected to affect traffic patterns in the area, even if other projects were to overlap with the proposed project construction.

The construction phase of the proposed project may result in significant short-term construction impacts to traffic at one intersection during the afternoon peak hour (4:00 pm to 6:00 pm). Cumulative effects on transportation and traffic in the vicinity of the VGS will be significantly adverse during the temporary construction period. However, cumulative effects on traffic and circulation in the vicinity of the project site will be transitory due to the temporary nature of the construction.

6.4 Mitigation Measures

Cumulative impacts from individual projects considered together may affect air quality and transportation and traffic. Mitigation measures for these environmental issue areas are identified in Chapter 4. Implementation of the mitigation measures proposed in Chapter 4 will assist in mitigating cumulative air quality impacts.

7.0 ORGANIZATIONS AND PERSONS CONSULTED

CEQA Guidelines § 15129 requires that organizations and persons consulted be provided in the EIR.

In the course of preparation of the EIR for the Los Angeles Department of Water and Power's Installation of a Combined Generating Facility at the VGS Project, various federal, state, and local agencies; industries; and individuals have been consulted. A Notice of Preparation for this EIR was distributed to interested parties and individuals in June 2001. Additionally, the Notice was announced in the Los Angeles Times. Comments received in the Notice have been reviewed and as appropriate been used to focus the analysis in this EIR.

Listed below are the following organizations and individuals that provided input to the EIR.

7.1 Organizations

Austin-Foust Associates, Inc.

California Air Resources Board

City of Los Angeles Planning Department

County of Los Angeles

California Department of Conservation – Division Mines and Geology

Los Angeles Department of Transportation

Los Angeles County Fire Department

Los Angeles County Sanitation Districts

Los Angeles County Sheriff's Department

South Coast Air Quality Management District

7.2 Persons Consulted

King, Wayne. City of Los Angeles Planning Department, San Fernando Valley Office

Plaskin, Hadar. City of Los Angeles Planning Department, Environmental Review Division

Pringle, Wes. City of Los Angeles Department of Transportation

Weintraub, David. City of Los Angeles Planning Department, Site Plan Review Division

7.3 List of Preparers

South Coast Air Quality Management District, Diamond Bar, California

ENSR International, Camarillo, California

Parsons Engineering Science, Pasadena, California

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