

LOS ESTEROS CRITICAL ENERGY FACILITY: PHASE 2

Condition of Certification AQ-SC2 Air Quality Construction Mitigation Plan



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Prepared by

Air Quality Construction Mitigation Plan, Los Esteros Critical Energy Facility: Phase 2

Prepared for
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SECTION 1

Introduction

This Phase 2 Air Quality Construction Mitigation Plan (AQCMP or plan) describes a program for ensuring compliance with the requirements of the California Energy Commission (CEC) license related to suppression of dust and emissions from the operation of diesel construction equipment during construction at the Los Esteros Critical Energy Facility (LECEF). This plan describes the measures and procedures that will be implemented to monitor and control site activities over the duration of the construction effort. This AQCMP responds to conditions of certification imposed on this project by the CEC. CEC condition AQ-SC2 requires the development of this plan, which must be submitted to the Compliance Project Manager (CPM) at least 60 days in advance of the start of the construction.

The CEC conditions for certification for the project include conditions related to the control of fugitive dust and the restriction of emissions from the operation of diesel powered equipment. Section 2 of this plan discusses the responsibilities of the Air Quality Construction Mitigation Manager (AQCMM). Section 3 contains a dust control plan (DCP), which addresses the specific fugitive dust control measures to be implemented before, during, and after any dust generating activity. Section 4 includes an overview of the methodology that will be followed to ensure that the Diesel construction equipment used during construction complies with the applicable CEC requirements. Section 5 describes the air quality construction mitigation compliance reports that will be submitted monthly during the construction phase at the LECEF.

1.1 Project Description

The LECEF is located within a 21-acre project site in San Jose, California that includes the fenced area of the LECEF and the facility's surrounding landscaping. The project site is located within a larger 34 acre parcel, the Phase 2 equipment will be installed inside the 21-acre project site. Construction of Phase 2 will use a 13-acre construction parking and laydown area immediately south of the project site that is also contained within the 34-acre parcel.

Phase 1 consisted of four General Electric LM6000 SPRINT combustion turbine generators, four selective catalytic reduction and oxidation catalyst units, four heat recovery steam generator (HRSG) casings and stacks (installed in anticipation of Phase 2), a one-cell cooling tower, and ancillary equipment. Phase 1 was granted a license on July 2, 2002, was constructed, and became fully operational in March 2003.

Phase 2 includes conversion of the LECEF to a combined-cycle facility through the addition of HRSG tube sections and associated evaporator drums and piping, HRSG duct burners, a nominal 140-MW steam turbine generator, a six-cell plume abated cooling tower, ancillary equipment, and a 230-kilovolt transmission interconnection with the Silicon Valley Power (SVP) switching station. Construction of Phase 2 will require excavation and trenching in

the switchyard, along onsite roadways, in the southwestern corner of the site, and adjacent to the combustion turbines near the chiller system.

Construction – including site preparation, foundation work, and the installation of major equipment and structures – is expected to begin in May of 2011 and to last approximately 19 months.

SECTION 2

CEC Condition for an Air Quality Construction Mitigation Manager

CEC Condition AQ-SC1 describes the requirement for and responsibilities of the AQCMM.

The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with conditions AQ-SC3, AQ-SC4 and AQ-SC5 for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the compliance project manager.

2.1 Air Quality Construction Mitigation Manager

The AQCMM or an AQCMM Delegate will be responsible for ensuring that required construction mitigation measures are successfully implemented throughout the period of project construction. The AQCMM will also work with the LECEF Construction Manager to ensure that all construction workers are aware of the requirements of the AQCMP. A single AQCMM will be responsible for all phases of project construction. In accordance with the requirements of AQ-SC1, LECEF will submit to the CEC for CPM approval the name, resume, qualifications, and contact information for the onsite AQCMM and all AQCMM Delegates.

Contact information for the LECEF Construction Manager and the individual contractors responsible for the implementation of the plan is summarized in Table 1.

TABLE 1
Onsite Contact Information for the LECEF Project

Title	Organization	Contact
Project Manager	LECEF	Name: TBD Title: Project Manager Address: TBD Phone: TBD Fax: TBD Cell: TBD
Construction Manager		Name: TBD Title: TBD Address: TBD Phone: TBD Fax: TBD Cell: TBD
Permitting and Compliance Manager		Name: TBD Title: TBD Address: TBD Phone: TBD Fax: TBD Cell: TBD

SECTION 3

Dust Control Plan

CEC condition of certification AQ-SC3 for the LECEF includes the following requirements for fugitive dust control during the construction of the project:

- All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of AQ-SC4 (the prevention of fugitive dust plumes). The frequency of watering may be either reduced or eliminated during periods of precipitation.
- No vehicle shall exceed 10 miles per hour within the construction site.
- The construction site entrances shall be posted with visible speed limit signs.
- All construction equipment vehicle tires shall be inspected and washed as necessary to be free of dirt prior to entering paved roadways.
- Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
- All construction vehicles shall enter the construction site through the treated entrance roadways unless an alternative route has been submitted to and approved by the CPM.
- Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the stormwater pollution prevention plan (SWPPP) to prevent run-off to roadways.
- All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- At least the first 500 feet of any public roadway exiting from the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or run-off from the construction site is visible on the public roadways.
- All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or treated with appropriate dust suppressant compounds.
- All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks to provide at least one foot of freeboard.

- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

The above requirements are incorporated in this AQCMP.

3.1 Fugitive Dust Sources

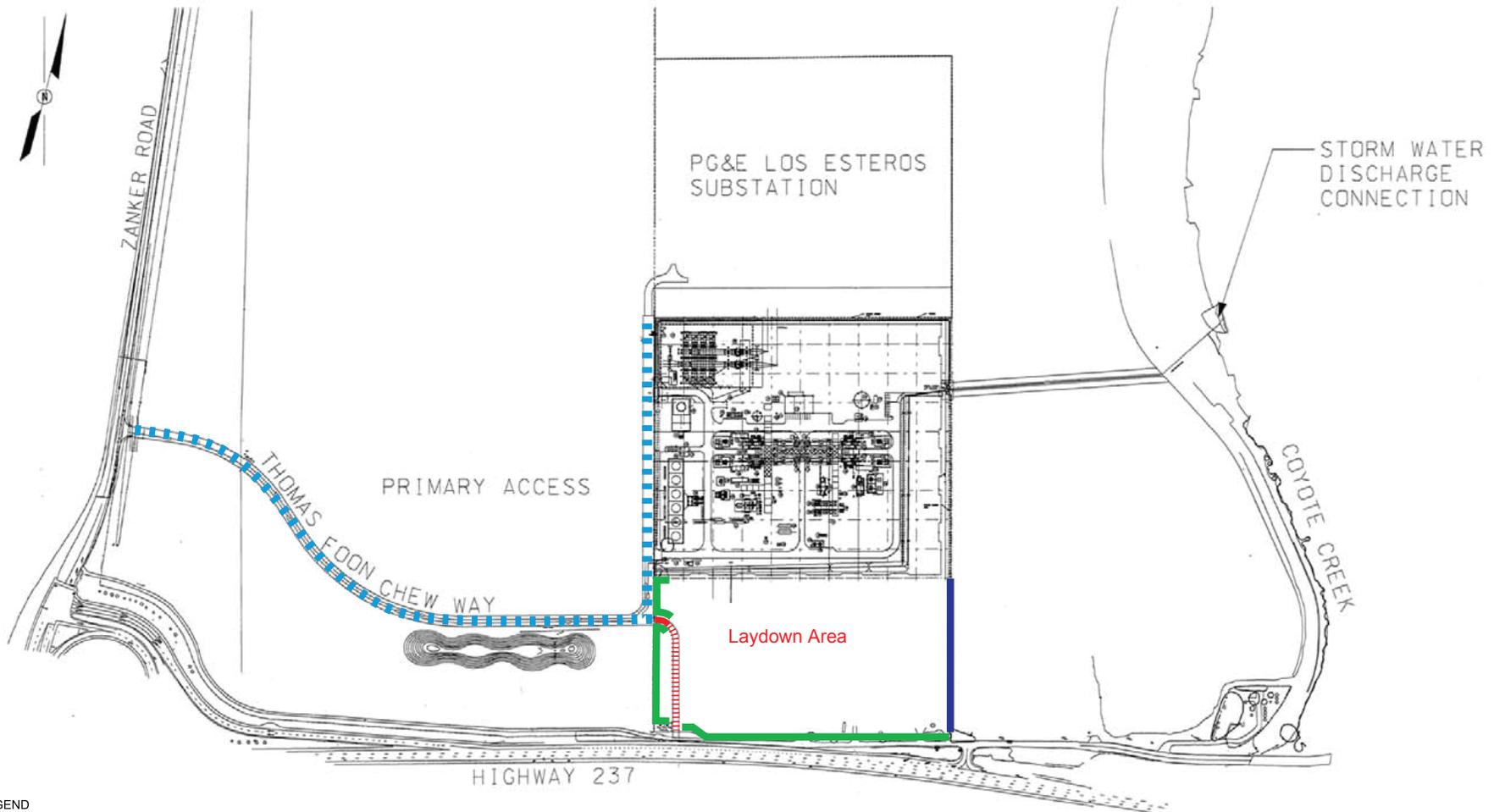
During the construction period, fugitive dust will potentially be generated by the mechanical disturbance of soils on the site by equipment engaged in grading, earth moving, loading and unloading of bulk materials, trenching, excavating and pile driving, and by the travel of equipment and vehicles on paved and unpaved surfaces of the site. Potential sources of fugitive dust emissions include the following:

- Dust entrained during site preparation and grading/excavation at the construction site
- Dust entrained during onsite travel on paved and unpaved surfaces
- Dust entrained during aggregate and soil loading and unloading operations
- Wind erosion of areas disturbed during construction activities

Figure 1 is a site plan of the LECEF with the construction and laydown area outlined. The locations of the gravel ramps and vehicle tire inspection/washing areas, and the locations of sandbags or other measures to prevent runoff to paved roadways, will be provided in the construction-phase SWPPP.

3.2 Dust Control Methods

In accordance with AQ-SC3, dust control will be achieved by applying water or other dust suppressants before/during disturbance of construction areas and onto unpaved traffic areas and by setting up wind fences as needed to limit windblown dust. Additionally, run-off to paved roadways adjacent to construction areas will be prevented with the use of erosion measures as specified in the SWPPP.



LEGEND

-  STREET SWEEPING AND VACUUMING
-  STABILIZED CONSTRUCTION ENTRANCE/EXIT
-  STABILIZED CONSTRUCTION ROADWAY
-  SILTY FENCE OR FIBER ROLL
-  EARTH DIKES AND DRAINAGE SWALES (AS NEEDED)



FIGURE 1
 Site Plan
 Los Esteros Critical Energy Facility

All vehicles within the project site will have a speed limit of 10 miles per hour, and speed limit signs will be posted at the site entrances. Construction equipment vehicle tires will be inspected and washed as necessary to be free of dirt prior to entering paved roadways. Washing/cleaning stations will have gravel ramps of at least 20 feet in length. All site entrances/exits from the site onto paved roadways will be stabilized to reduce tracking of sediment onto paved roads as a result of the construction traffic. Entrances will be graded to prevent both runoff and dust from leaving the construction site. Stabilization material will be 4-inch coarse aggregate.

Preservation of existing vegetation will also provide wind erosion control and dust control benefits. The SWPPP indicates that existing vegetation will be preserved at areas on the site where no construction activity is planned. Heavy equipment, vehicular traffic, or storage of construction materials within the protected area will be prohibited. Temporary fencing and other protective devices will be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities near protected areas.

The SWPPP's drainage erosion sedimentation control plan (DESCP) includes erosion control requirements that also act to stabilize soil and prevent fugitive dust emissions. The DESCP includes measures, such as using straw mulch or dust suppressant compounds on disturbed soil areas that will be inactive for an extended period of inactivity of more than 10 days; and the use of effective soil cover (such as aggregate, paving, or vegetation) following final grading operations.

Table 2 summarizes the total area of land surface to be disturbed, the total area of the project site, and the start and end dates for the LECEF construction project.

TABLE 2
Fugitive Dust Sources During LECEF Construction

Total area of land surface to be disturbed (acres)	21
Total area of project site (acres)	34
Expected construction start date	5/16/2011
Expected construction completion date	12/30/2012

3.3 Dust Plume Response Requirement

CEC condition of certification AQ-SC4 for the LECEF includes the following requirements for Dust Plume Response Requirements during the construction of the project, if visible dust plumes are observed with the potential to be transported (1) off the project site, (2) 200 feet beyond the centerline of the construction of linear facilities, or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner. The condition of certification states that the AQCMM or Delegate will implement the following procedures for additional mitigation measures:

- **Step 1:** The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

- **Step 2:** The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination. These additional methods could include application of chemical suppressants or installation of windbreaks if deemed necessary and appropriate to achieve adequate dust mitigation.
- **Step 3:** The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visible dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

To comply with condition of certification AQ-SC4, the AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes with the potential to be transported off the project site, 200 feet beyond the centerline of the construction of linear facilities, or within 100 feet upwind of any regularly occupied structures not owned by the project owner.

In the event that the mitigation measures outlined in Sections 3.2 and 3.4 of this plan are not effective in reducing the offsite visible dust plumes, the following fugitive dust response measures will be implemented during project construction, to comply with CEC condition of certification AQ-SC4:

Step 1: Within 15 minutes of making such a determination, the AQCMM or Delegate shall direct more intensive application of the existing best mitigation methods for reducing wind erosion, such as additional watering or more frequent street sweeping.

Step 2: If Step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination, the AQCMM or Delegate shall direct implementation of additional methods of dust suppression, such as the construction of temporary wind breaks, application of soil stabilizers, application of plastic sheeting or a geotech fabric, or the temporary halting of construction. Techniques for Limiting Visible Dust Emissions

The following requirements will be in effect during project construction:

- Water will be applied to control fugitive dust during wind events, unless it is unsafe to do so. In accordance with the dust plume response requirement in Section 3.3 above, activities that disturb the soil will cease whenever visible dust emissions cannot be effectively controlled.
- During inactive periods (such as after work hours, weekends, and holidays), water or other dust suppressants will be applied on disturbed surface areas.
- Except during periods of precipitation, all paved roads within the construction site will be swept at least twice daily on days when construction activity occurs.

- Except during periods of precipitation, at least the first 500 feet of public roadway exiting from the construction site will be swept at least twice daily on days when construction activity occurs or on any day when dirt or runoff from the construction site is visible on the public roadways.
- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) will be used on all disturbed construction areas.

The following describes in more detail the additional techniques that will be utilized to limit visible dust emissions from activities that cause fugitive dust emissions:

- **Pre-Activity:** The work site will be pre-watered before the construction begins.
- **Unpaved Access and Haul Roads and Laydown Areas:** Water or dust suppressants will be applied to unpaved access and haul roads and laydown areas for the duration of the LECEF construction period.
- **Loaded Haul Trucks:** All vehicles that are used to transport solid bulk materials on public roadways, and that have the potential to cause visible emissions, will be (1) provided with a cover; or (2) loaded such that the freeboard is not less than 1 foot with water applied to the top of the load before leaving the construction site.
- **Inactive Operations:** During inactive periods (such as after work hours, weekends, and holidays), storage piles and disturbed surface areas that remain inactive for longer than 10 days will be covered, or other dust suppressants will be applied, and vehicle access will be restricted.

SECTION 4

Diesel Construction Equipment Mitigation Measures

The CEC condition for certification AQ-SC5 for the project includes the following requirements for the diesel construction equipment that will be used during the construction of the LECEF:

- a. All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.
- b. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the onsite AQCMM showing that the engine meets the conditions set forth herein.
- c. All construction diesel engines with a rating of 100 hp or higher shall meet, at a minimum, the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless certified by the onsite AQCMM that such engine is not available for a particular item of equipment. In the event that a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers of the onsite AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is “not practical” if, among other reasons:
 1. There are no available soot filter that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or
 2. The construction equipment is intended to be on site for ten days or less.
 3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not possible.
- d. The use of a soot filter may be terminated immediately if one of the following conditions exists, provided that the CPM is informed within 10 working days of the termination:
 1. The use of the soot filter is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
 2. The soot filter is causing or is reasonably expected to cause significant engine damage.

3. The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.
 4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.
- e. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (c) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.
- f. All diesel heavy construction equipment shall not idle for more than five minutes, to the extent practical.

4.1 Diesel Construction Equipment Description

Combustion emissions during construction will result from the operation of diesel-powered construction equipment used for site preparation, grading, excavation, demolition, and construction of onsite structures. Typical diesel construction equipment will include graders, backhoes, compactors, cranes, delivery trucks, excavators welding machines, electric generators, air compressors, and water pumps.

The identification of specific diesel construction equipment used for construction will be included in the monthly compliance reports. The diesel construction equipment information to be reported includes the following:

- Construction equipment make and model number
- Year of manufacture of the construction equipment engine
- Engine displacement
- Engine horsepower rating
- Engine emission standard certification level (i.e., Tier 1, 2, or 3) as certified by the California Air Resources Board (CARB) or the U.S. Environmental Protection Agency (EPA)

AQCMM will be responsible for gathering information on the diesel construction equipment used for the subcontractor's part of the project. A diesel construction equipment information request form has been developed to assist the subcontractors in collecting the required information. A copy of this form is included in Appendix C.

4.2 Control Equipment Description and Installation Criteria

All of the diesel construction equipment associated with the LECEF will be fired on CARB ultra-low sulfur diesel fuel (less than 15 ppm sulfur). Large diesel construction equipment with a rating of 100 hp or higher must be EPA/CARB certified Tier 1 engines, unless such equipment is not available. In the event that Tier 1 certified equipment is not available, the AQCMM will analyze the feasibility of equipping such engines with appropriate diesel particulate filters. To be considered feasible, a control device must be "verified by either the [CARB] or the [EPA] for the engine in question." [Condition AQ-SC5, c.1].

The procedure to be followed in complying with AQ-SC5 (c) is summarized on Figure 2.

Figure 2

Diesel Construction Equipment Mitigation Determination Matrix

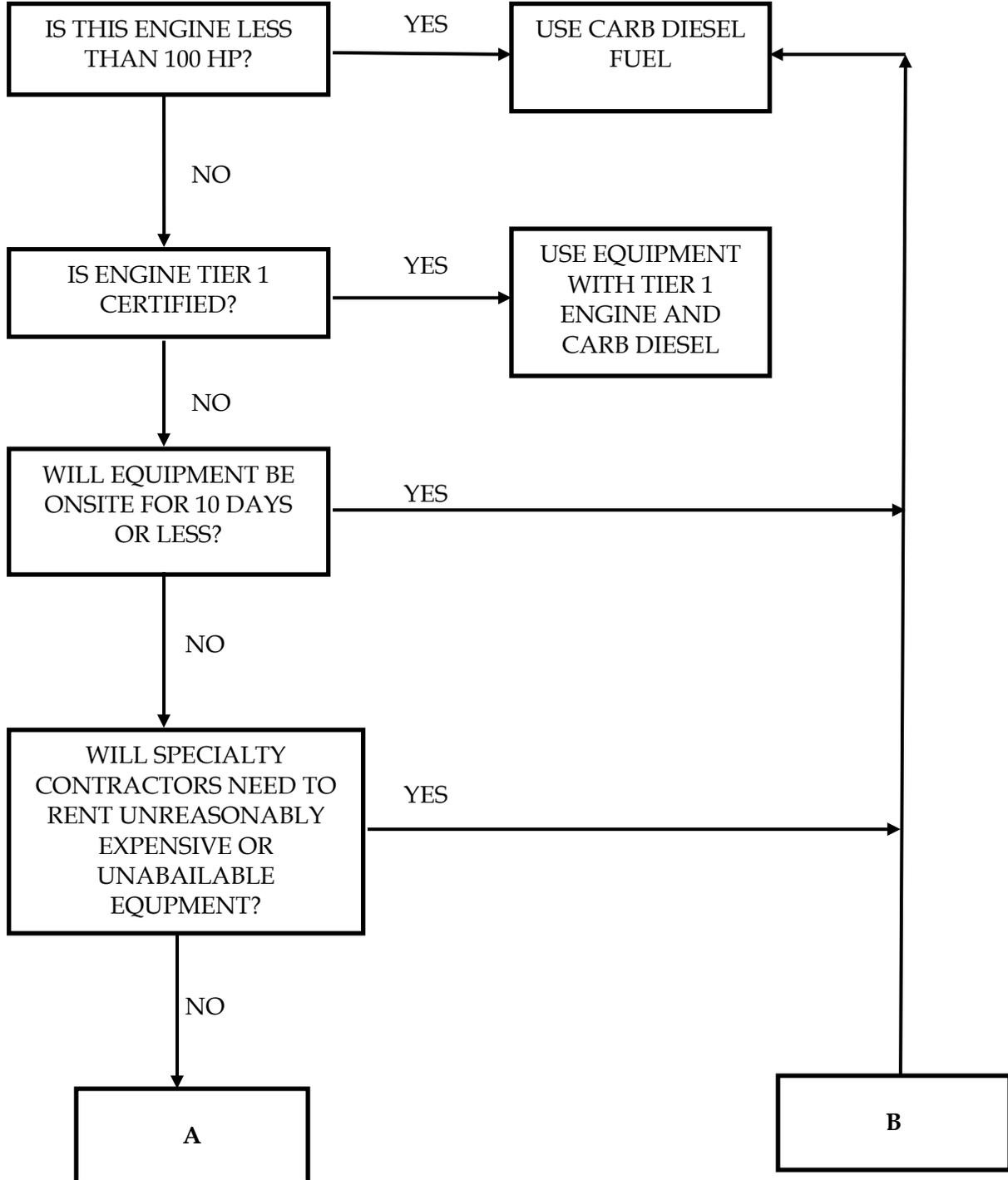
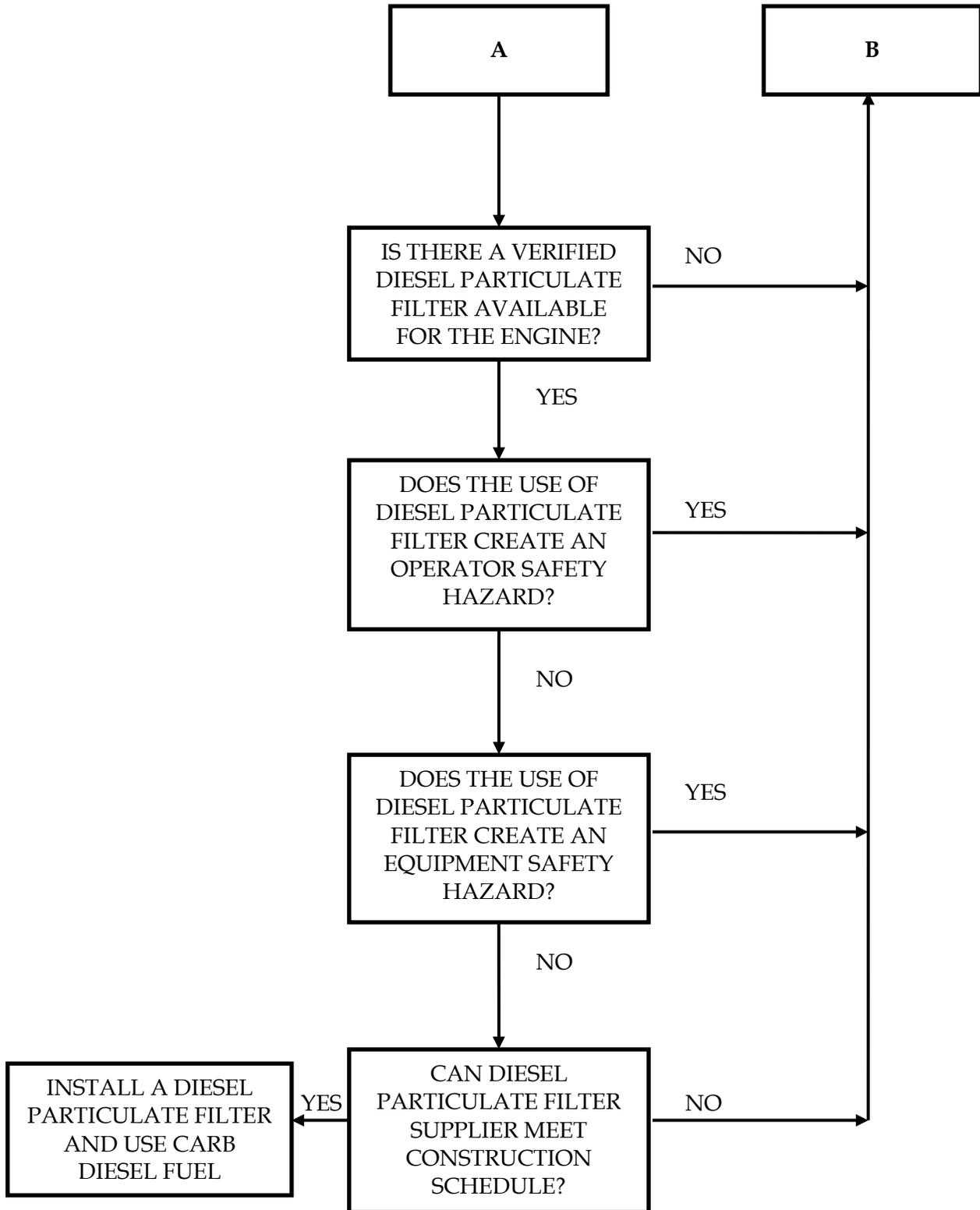


Figure 2

Diesel Construction Equipment Mitigation Determination Matrix (Continued)



SECTION 5

Monthly Compliance Reports

The project owner must submit documentation to the CPM in a monthly compliance report (MCR) that demonstrates compliance with the mitigation measures for purposes of minimizing dust emissions, preventing all fugitive dust plumes from leaving the project site, and minimizing emissions from the operation of the diesel construction equipment. This information may be provided via electronic format or disk at the owner's CPM's discretion.

5.1 Compliance with Dust Control Requirements

The MCRs will include the following elements to demonstrate compliance with the applicable dust control requirements:

- A written summary or checklist of all actions taken to maintain compliance with the dust control measures and emission control measures
- Copies of any complaints filed with the District in relation to project construction
- Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition

The checklist will be completed and signed by the AQCMM or an AQCMM Delegate to confirm that attention has been given to each requirement on each day when emissions generating construction activities may have occurred. An example checklist form is provided as Appendix B, Draft Checklist for Monitoring Air Quality Mitigation Activities for the LECEF. This form may be modified when actual construction monitoring commences to make it more readily usable. Any deviation from the dust control mitigation measures shall require prior CPM notification and approval.

5.2 Compliance with Diesel Equipment Mitigation Measures

The MCR will also include the elements listed below to demonstrate compliance with the applicable diesel construction equipment mitigation measures.

- Summary of all actions taken to maintain compliance with this AQCMP
- Copies of all diesel fuel purchase records
- A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained
- Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this AQCMP

All of the diesel construction equipment information and mitigation determinations will be summarized in tables that will be included with the monthly compliance reports. Example copies of these diesel construction equipment summary tables are included in Appendix D. Any deviation from the diesel mitigation measures shall require prior CPM notification and approval.

Appendix A
Reporting Forms for Monitoring Construction
Air Quality Mitigation Activities at the
Los Esteros Critical Energy Facility

Record Keeping Form

Month: _____

FORM A – Area Water Application

Project Location: _____ City: _____ Size: _____ (Miles/Acres)

Owner: _____ Address _____ City: _____ Zip _____

Contact Person: _____ Title: _____ Phone: () - _____

Watering Schedule

Use this form to document daily water applications at a single site by recording total gallons per day and number of applications per day at a single area. Use additional forms, as necessary, for areas with different treatment schedules.

Area treated: _____.

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Area treated: _____.

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Record Keeping Form

Month: _____

FORM B: For Cleanup of Trackout and Carryout

Project Location: _____ City: _____ Size: _____ (Acres)

Owner: _____ Address _____ City: _____ Zip _____

Contact Person: _____ Title: _____ Phone: () - _____

Sweeping / Cleanup Schedule

Use this form to document the cleanup schedule by entering the time of day cleanup is done.
Mornings = am; Afternoon = pm. Write "end of day" if cleanup is done at the end of the workday.

Week		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	am							
	pm							
2	am	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	pm							
3	am	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	pm							
4	am	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	pm							
5	am	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	pm							

Record Keeping Form

Month: _____

FORM C: For Permanent / Long Term Dust Controls

Project Location: _____ City: _____ Size: _____ (Acres)

Owner: _____ Address _____ City: _____ Zip _____

Contact Person: _____ Title: _____ Phone: () - _____

Permanent Activities

Describe the types of permanent dust controls implemented, the date, the activity, such as applying an organic dust suppressant, gravel, paving or a trackout control device. Add comments such as the amount used, where used, brand name.

Date	Dust Control Activity Performed (Gravel, paving)	Comments: Type of material, application rate.

Comments: _____

Appendix B
Diesel Construction Equipment
Information Request Form

Los Esteros Critical Energy Facility

Please fill out the following information for each piece of diesel construction equipment.

Name of Subcontractor: _____

Subcontractor Mailing Address: _____

Dates Subcontractor Will Be Working Onsite: _____

Construction Equipment Information:

- Equipment type (e.g., backhoe, grader, excavator): _____
- Equipment manufacturer: _____
- Equipment model number: _____
- Location of exhaust muffler (e.g., on top of cab, on top of front engine cover, on top of rear engine cover) _____
- Expected number of days on site: _____

Construction Equipment Engine Information:

- Engine manufacturer: _____
- Engine model number: _____
- EPA engine family number: _____
- Engine serial number: _____
- Engine displacement (liters): _____
- Engine power rating (HP): _____
- Date engine manufactured: _____
- EPA engine conformity statement present (i.e., This engine conforms to [model year] EPA regulation for non-road compression-ignition engines):
 - Present (yes/no) _____ If yes, year: _____
- Number of engine operating hours since last major overhaul: _____