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AIR QUALITY CONSTRUCTION MITIGATION PLAN

DEMOLITION OF THE INLAND EMPIRE ENERGY CENTER

DOCKET NO. 01-AFC-17C

DATE OF PLAN: JANUARY 28, 2020

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INTRODUCTION

When the California Energy Commission (CEC) approved the Decommissioning and Demolition Plan for the Inland Empire Energy Center (IEEC), the CEC imposed various conditions for the demolition project, including AQ-SC1, requiring that an Air Quality Construction Mitigation Manager be designated to assure compliance with the various mitigation measures which are imposed; AQ-SC-2 requiring the preparation of a construction mitigation plan; AQ-SC3 containing mitigation measures and requirements to submit a Monthly Compliance Report (MCR) that demonstrates compliance with the various measures; AQ-SC4 that contains specific limits on the opacity from various construction activities, and AQ-SC6 that limits fugitive dust causing activities to no more than a twelve-hour per day schedule and requires records of compliance as part of the MCR.

This Air Quality Construction Mitigation Plan addresses each of the mitigation measures that the CEC has required.

AQ-SC1: AIR QUALITY CONSTRUCTION MITIGATION MANAGER

The project owner has designated the following person as the on-site Air Quality Construction Mitigation Manager (AQCMM):

Paul A. Weir, Senior Air Quality Engineer

Mr. Weir is currently certified by the California Air Resources Board (ARB) as a Visible Emission Evaluator. In addition, Mr. Weir is a Certified Permitting Professional (CPP) in the jurisdiction of the South Coast Air Quality Management District (AQMD), which is the local air pollution control agency.

As the designated AQCMM, Mr. Weir will be responsible for the preparation of the construction mitigation report as part of the Monthly Compliance Report (MCR), summarizing compliance with the various mitigation conditions. He will also be directly responsible for verifying the compliance status of all portable and mobile off-road equipment that operate at the site, including tracking fuel usage.

The project owner has also designated air quality construction mitigation monitors to which some of the duties of the AQCMM may be delegated. Those individuals, who are currently undergoing certification by the California ARB as Visible Emissions Evaluators, have been designated as monitors and will be identified upon receipt of CLARB certification.

Copies of pertinent certifications are included as an Appendix to this report.

AQ-SC2: CONSTRUCTION MONITORING PLAN

The project owner has prepared this Construction Mitigation Plan to document the steps that will be taken and the reporting requirements that will be followed to ensure compliance with the mitigation conditions found in the approval of the Decommissioning and Demolition Plan for the IEEC. The project owner is providing this construction mitigation plan to the CPM for comment and approval.

AQ-SC3: CONSTRUCTION MITIGATION REPORT

The on-site AQCMM shall submit to the CPM, in the Monthly Compliance Report (MCR), a construction mitigation report that demonstrates compliance with each of the mitigation measures shown below. Each of the actual mitigation measures is shown in italics, with the action that the project owner will be taking to achieve compliance with each condition directly following in regular typeface.

A) *All unpaved roads and disturbed areas in the project and linear construction sites shall be watered until sufficiently wet for every four hours of construction activities, or until sufficiently wet to comply with the dust mitigation objectives of Condition AQ-SC4. The frequency of watering can be reduced or eliminated during periods of precipitation.*

Whenever any construction activity is undertaken in a specific area of the site, all unpaved roads in the vicinity of that area, as well as the area itself, will be watered with the on-site water truck in accordance with the following schedule:

- 1) Before any construction activity is undertaken in that area (e.g. 8 AM).
- 2) If activity is to continue in that area during the afternoon, before resuming activity after the lunch break (e.g. 12:30 PM)

B) *No vehicle shall exceed 15 miles per hour within the construction site.*

A Contractor Compliance Requirements Statement (CCRS), listing all of the applicable rules for dust control, shall be prepared and each contractor or sub-contractor representative will be required to sign the CCRS before beginning work at the site. In addition, compliance with all of these conditions will be reviewed at each weekly tailgate safety meeting.

C) *The construction site entrances shall be posted with visible speed limit signs.*

A clearly visible sign stating the 15 MPH speed limit will be posted at the entrance of the construction site, and two relocatable signs will be utilized to remind vehicles of the speed limit on interior roads in the specific area(s) being worked each day.

D) *All construction equipment vehicle tires shall be washed or cleaned free of dirt prior to entering paved roadways.*

Rumble strips will be utilized to clean the tires of all vehicles exiting the construction areas onto any paved roadway.

E) *Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.*

An approach ramp to each rumble strip, consisting of at least 20 feet in length of gravel, shall be installed before each rumble strip.

- F) *All entrances to the construction site shall be graveled or treated with water or dust soil stabilization compounds.*

Each entrance to a construction area at the site shall be laid with gravel and watered at no less than a 4 hour interval during any day when that area is being actively used.

- G) *Construction vehicles must enter the construction site through the treated entrance roadways.*

All construction vehicles will first utilize the one entrance to the site and then only enter areas for actual construction activity through designated graveled entrances.

- H) *Construction areas adjacent to any paved roadway shall be provided with sandbags to prevent run-off to the roadway.*

Although no construction areas are anticipated adjacent to any paved roadway, this condition will be complied with in the event that any construction activity approaches or is adjacent to a paved road.

- I) *All paved roads within the construction site shall be swept twice daily when construction activity occurs.*

An independent road sweeping contractor will be employed at the site with scheduled sweeping occurring at 10:00 am and 2:00 pm whenever any construction activity is underway at the site.

- J) *At least the first 500 feet of any public roadway exiting from the construction site shall be swept twice daily when construction activity occurs.*

On any day when construction activity occurs, the independent street sweeping contractor shall operate twice daily on at least the first 500 feet (0.1 mile) of public roadway.

- K) *All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or be treated with appropriate dust suppressant compounds.*

Any soil storage piles and any disturbed areas will be treated with dust suppressant materials that are appropriate for the material being handled, unless the storage pile or disturbed area is small enough to effectively be covered instead of being treated.

- L) *All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.*

This requirement will be written into the CCRS that each mobile on-road fleet representative will be required to sign. It is currently anticipated that all loads leaving the site that have a potential to cause visible emissions will be tarped.

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

Construction areas that are disturbed will exclusively use water for small areas and chemical dust suppressants for larger areas. It is not anticipated that wind breaks or vegetation as cover will be employed at the site.

- N) *Any construction activities that may cause fugitive dust in excess of the visible emission limits specified in Condition AQ-SC4 shall cease when the wind exceeds 25 miles per hour unless water, chemical dust suppressant, or other measures have been applied to reduce dust to the limits set forth in AQ-SC4.*

The AQCMM will be responsible for monitoring daily wind forecasts and alerting any construction activity that may be undertaken on that particular day that the construction work may have to be curtailed. The AQCMM is authorized to require adequate watering of the area or activity being performed in order to prevent visible dust emissions beyond the property boundary or the creation of a visible dust plume of greater than 20% opacity.

O) *Diesel Fired Engines*

1. *All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, containing no more than 15-ppm sulfur.*

A portable diesel storage tank shall be located on-site and exclusively used to fuel all of the mobile off-road equipment (e.g. excavators, front-end loaders, forklifts) and portable equipment (e.g. generators, air compressors) that operate at the site. The portable diesel fuel storage tank will be filled with ultra-low sulfur diesel fuel (maximum of 15 PPM sulfur by weight from a local fuel supplier.

This diesel fuel will be California ARB red-dye diesel, exclusively for use in off-highway equipment. A bill of lading for each fuel delivery will be kept on site by the AQCMM, documenting that the sulfur content of the fuel meets the required standard of 15 PPM sulfur content.

Fuel will be dispensed into mobile off-road vehicles at the end of operations for the day, with the amount of fuel being received by each piece of equipment being recorded in a daily log sheet. Portable equipment need not be refueled each day, but simply as needed, with the amount of fuel being received by each piece of equipment also being logged.

2. *All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM that shows the engine meets the conditions set forth herein.*

The AQCMM shall issue Individual Equipment Tags for each piece of diesel fueled equipment that operates at the site. Each Equipment Tag will contain the following information, as more fully described in ATTACHMENT 1.

- A unique identification number for each piece of equipment.
- Documentation regarding the equipment's status in either the California ARB programs: Mobile Off-Road Vehicle Program or the Portable Equipment Registration Program.
- The make and model of the engine powering the equipment.
- The serial number of the engine powering the equipment.
- The horsepower of the engine and a brief description of the equipment it powers.
- The model year and EPA Tier of the engine and its EPA power range category.

In addition, the Equipment Tag shall contain information on the engine's emission factors for the following criteria pollutants nitrogen oxides (NO_x), volatile organic compounds (VOC), carbon monoxide (CO), oxides of sulfur (SO₂) and particulate matter (PM). Examples of Equipment Tags for both Mobile Off-Road Equipment and Portable Equipment are found in ATTACHMENT 2. Each Tag will be laminated in plastic to make it durable enough to be attached to the equipment it describes.

3. *All large construction diesel engines, which have a rating of 100 hp or more, shall be equipped with catalyzed diesel particulate filters (soot filters), unless certified by engine manufactures or the on-site AQCMM that the diesel engine is not available or the use of such devices is not practical for specific engine types.*

The AQCMM will proceed in the following manner to determine if a device is either not available or the use of such a device is impractical:

- 1) Initially, the owners or operators of all equipment operating at the site with engines of 100 hp or more shall be required to submit documentation to the AQCMM demonstrating that each engine is either an EPA certified Tier 4 Interim or Tier 4 Final engine. Both Tier 4 Interim and Tier 4 Final engine standards require the use of a diesel particulate filter (DPF) in order to be certified, and thus would qualify to be used at the site.
- 2) Acceptable documentation will be in the form of either an Equipment Identification Number (EIN) for a vehicle listed in the ARB Diesel Off-Road Online Reporting System (DOORS), along with a Certificate of Reported Compliance for the off-road fleet; or a current Portable Equipment Registration Program (PERP) registration that identifies both the Serial Number and the EPA Family Name of the engine in question, thus verifying the Tier 4 status of the engine.
- 3) Any engine of 100 or more horsepower that is not a Tier 4 engine will only receive a Tag if it meets the criteria of a device being either not available or not practical, as determined in accord with one of the two criteria found below.

For purposes of this condition, a diesel engine is “unavailable” or the use of such devices is “not practical” if the AQCMM in applying recognized industry practices certifies that:

- *The device is not available. For purposes of this condition, “not available” means that a device certified by either CARB or EPA is: (i) not in existence at any location for use by the project owner at or near the time project construction commences; (ii) in existence but the construction equipment is intended to be on-site for ten (10) days or less or (iii) not available for a particular piece of equipment.*

To receive an Equipment Tag if the engine is not Tier 4 Certified, there must not be a DPF listed for that engine in the California ARB Retrofit Device Verification Database, which contains information for 1988 through 2012 heavy duty diesel engines, and is accessed at:

Ww3.arb.ca.gov/diesel/verdev/vdb/disclaimer.php

The AQCMM will utilize this ARB database by entering the EPA Family Name to determine if the ARB has verified a DPF for the engine in question.

If a verified DPF is found to be listed in the database, then the equipment that the engine powers cannot receive an Equipment Tag from the AQCMM until the suitable DPF is installed on the engine.

Once a suitable DPF is installed in the engine and the equipment owner has properly registered that fact in DOORS, the AQCMM will issue an Equipment Tag with a number ending in either “C”, for Tier 3 engines, or “D”, for Tier 2 engines.

- *Despite the project owner’s best efforts, use of the device is not practical. For purposes of this condition, “not practical” means any of the following: (i) the use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure; (ii) the soot filter is causing or is reasonably expected to cause significant engine damage; (iii) the soot filter is causing or is reasonably expected to cause a significant risk to workers or the public; or (iv) other good cause approved by the CPM.*

If a verified DPF is found to be available for a Tier 2 or Tier 3 engine, but has not been installed because the equipment owner has deemed it use not practical, the AQCMM shall contact both the equipment owner and the original equipment manufacturer to ascertain the detailed reason(s) why the retrofit of a verified DPF has been deemed impractical.

Only the following reasons will be acceptable for the AQCMM to issue an Equipment Tag and let that specific piece of equipment operate at the site:

1. The use of the DPF is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.
2. The DPF is causing or is reasonably expected to cause significant engine damage
3. The DPF is causing or is reasonably expected to cause a significant risk to workers or the public

The cost of the DPF, including the cost of installation and maintenance, will **not** be an acceptable reason for not operating the equipment with a DPF.

If any of the three reasons listed above can be clearly demonstrated, then the AQCMM will issue an Equipment Tag with a number ending in either "C", for Tier 3 engines, or "D", for Tier 2 engines.

The project owner shall notify the CPM within seven (7) days of determining that a soot filter is unavailable or not practical, and the reasons therefore.

In the event that the AQCMM finds that the issuance of an Equipment Tag is justified by any of the above-listed exceptions to the requirement for the engine to have a DPF installed, the AQCMM shall immediately prepare a detailed report to the project owner listing the justification for his action.

Upon filing the report with the project owner, the AQCMM shall issue a provisional Equipment Tag that contains a clearly stated expiration date of no more than 30 days.

The project owner shall file the report with the CPM within 7 days of receiving it from the AQCMM.

The AQCMM shall then await a decision by the CPM regarding the acceptability of the engine in question before issuing any further Equipment Tag allowing operation of the equipment on site.

AQ-SC4: LIMITS ON VISIBLE DUST EMISSIONS

No construction activities are allowed to cause visible dust emissions at or beyond the project site fenced property boundary or any adjacent lands owned by the applicant. No construction activities are allowed to cause visible dust plumes that exceed 20 percent opacity at any location on the construction site. No construction activities are allowed to cause any visible dust plum in excess of 200 feet beyond the centerline of the construction of linear facilities

The AQCMM shall be responsible for conducting a daily Visible Emissions Evaluation of any construction activity being conducted at the site to assure that the following two conditions are met:

- 1) Visible emissions from on-site construction activities do not extend beyond the property line.
- 2) Visible emissions at the actual location of any construction activity do not exceed 20% opacity.

In the event that any visible emissions in excess of the two conditions listed above are detected, the AQCMM shall direct that the specific activity immediately cease operation until sufficient water can be applied to the source to bring the visible emissions into compliance. The AQCMM shall make a written report of the nature and extent of the excess emissions for inclusion in the MCR.

AQ-SC6: HOURS OF OPERATION

During site mobilization, ground disturbance, and grading activities, the project owner shall limit the fugitive dust causing activities (i.e. scraping, grading, trenching, or other earth moving activities) to no more than a twelve-hour per day schedule as provided in Condition NOISE-8.

The AQCMM shall be responsible for completing, at the end of each day when any construction activity occurred, a daily construction activity report (DCAR) that identifies:

- 1) All contractors and sub-contractors working on the site during that day.
- 2) The nature and extent of all construction activities that occurred during that day.
- 3) Whether or not any of those construction activities could have caused fugitive dust.
- 4) The hours during which any potential fugitive dust creating activities were actually conducted.
- 5) The results of any Visible Emissions Evaluations that were conducted.
- 6) The identification tag number of each piece of Mobile or Portable Equipment at the site.
- 7) The daily amount of diesel fuel consumed by each piece of Mobile or Portable Equipment.



CALIFORNIA
AIR RESOURCES BOARD

Air Quality Training Program

Awards This Certificate To

Paul Weir

For Completion Of

MM106 - Visible Emissions Evaluation: Day Certification

In
El Cajon

On
Tuesday, July 16, 2019

This certificate expires six months after the evaluation completion date.

Dr. Todd P. Sax, Chief
Enforcement Division

ATTACHMENT 1

DETAILS TO BE CONTAINED ON EQUIPMENT TAGS

Each tag issued by the AQCM shall contain the following lines of information:

LINE 1 – A unique identification number for each piece of equipment, consisting of a set of alphanumeric characters using the following codes:

POSITION 1 - a letter code, designating the equipment as follows:

ME – Mobile equipment

PE – Portable Equipment

POSITION 2 - a numeric code identifying the class of equipment (e.g. excavators, gen-sets) as more fully described in Table A.

POSITION 3 - a numeric code to differentiate between two or more pieces of equipment in the same class (e.g. Excavator 1 versus Excavator 2 or Excavator 3)

POSITION 4 - a letter code identify the EPA Tier of the engine, as more fully described in Table B

LINE 2: Documentation regarding the engine's status in either of the following California ARB programs for diesel engines, including the Equipment Identification Number (EIN) or the PERP Registration Number:

- Mobile Off-Road Equipment Program (DOORS)
- Portable Equipment Registration Program (PERP)

LINE 3: The make and model of the engine powering the equipment

LINE 4: The serial number of the engine powering the equipment

LINE 5: The horsepower of the engine and what equipment it powers

LINE 6: The model year and EPA Tier of the engine and its EPA power range

In addition, the Equipment Tag also contains information on the engine's emission factors for the following criteria pollutants:

NOx - Nitrogen Oxides

VOC - Volatile Organic Compounds

CO - Carbon Monoxide

SO₂ - Sulfur Dioxide

PM - Particulate Matter

These emission factors are taken from the California ARB Executive Order for the specific EPA Engine Family Name for the engine make and model.

The emission factors are presented in three separate formats on the Equipment Tag:

- GRAMS/KW-HR, as published in the ARB Executive order
- GRAMS/BHP-HR, as derived from the grams/kw-hr, multiplied by a conversion factor of 0.7457
- LBS/1000 GALLON, as derived from the fuel consumption data at full load contained in the ARB Executive Order.

These LBS/1000 GALLON emission factors can be used to calculate proves useful the overall project emissions of each pollutant from the variety of mobile and portable equipment that operate at the site.

Note that the emission factor for sulfur dioxide (SO₂) is constant for all equipment, as it is derived directly from the 15 PPM content of the diesel fuel, as calculated below:

$$\frac{15 \text{ LBS Sulfur}}{1,000,000 \text{ LBS Fuel}} \times \frac{2 \text{ LBS SO}_2}{\text{LB Sulfur}} \times \frac{7 \text{ LBS Fuel}}{1 \text{ Gallon Fuel}}$$

with the emission factor being expressed in LBS/1000 GALLON by multiplying the above calculation by 1,000.

For some engines, particularly older Tier 2 and Tier 3 engines that might possibly be used at the site, the ARB Executive Order may only contain the sum of NOx and VOC emissions, noted on the TAG in the column labeled MIX. In those cases, individual values for NOx and VOC have been estimated by assuming that the VOC fraction of the MIX is equal to 0.4g/ kw-hr and assuming all of the remaining emissions are NOx.

Each individual TAG will be laminated in plastic to make it durable enough to be attached to the individual piece of equipment as it operates at the site. A second Tag for each piece of equipment shall be kept in the office of the AQCMM, along with all documentation that allowed the Equipment Tag to be issued.

TABLE A

EQUIPMENT CLASS IDENTIFIERS

Mobile Equipment (ME) with diesel engines greater than 25 HP

1. Excavators
2. Backhoes
3. Bulldozers
4. Front-end Loaders
5. Skid-steer Loaders
6. Off-Highway Cranes
7. Forklifts
8. Other Vehicle 1
9. Other Vehicle 2

Portable equipment (PE) with diesel engines greater than 50 HP

1. Gen-sets
2. Air Compressors
3. Abrasive Blasting
4. Pumps
5. Other Equipment 1
6. Other Equipment 2

TABLE B

ENGINE TIER IDENTIFIERS

A – EPA Tier 4 Final Engine, with DPF

B – EPA Tier 4 Interim Engine, with DPF

C – EPA Tier 3 Engine, Vehicle is Special use, no DPF retrofit is available or allowed

D – EPA Tier 2 Engine, Vehicle is Special use, no DPF retrofit is available or allowed

E – Exempt from DPF requirements, as the engine is less than 100 HP

F – Exempt from all requirements, based on the actual HP of the engine being less than 50 HP for portable equipment or less than 25 HP for mobile equipment

ATTACHMENT 2

EXAMPLES OF EQUIPMENT TAGS

MOBILE EQUIPMENT TAG

ME-3-01-A

FOR FRONT-END LOADER

PORTABLE EQUIPMENT TAG

PE-1-01-B

FOR DIESEL GEN-SET

ME-3-01-A

STATUS: CARB DOORS EIN PY7N65 (FLEET ID 4453)

SCANIA AB MODEL DC13 ENGINE

SERIAL NUMBER: 14065029B

380 HP @ 2100 RPM POWERING DOOSAN DL500-5 LOADER

2014 TIER 4F CERTIFIED ENGINE (225-560 KW)

WITH ESTIMATED POLLUTANT EMISSION FACTORS OF:

	NOx	MIX	VOC	CO	SO₂	PM
GRAM/KW-HR	0.19		0.08	0.20		0.02
GRAM/BHP-HR	0.14		0.06	0.15		0.015
LBS/1000 GALLON	6.48		2.73	6.82	0.21	0.68

SOURCE: EPA FAMILY NAME EY9XL12.7DAA

CARB EXECUTIVE ORDER: U-R-024-0018-1

PE-1-01-B

STATUS: CARB PERP REGISTRATION 160912

CATERPILLAR MODEL C13 ENGINE

SERIAL NUMBER: K3B00619

569 HP @ 1800 RPM POWERING A 350 KW GEN-SET

2012 TIER 4I CERTIFIED ENGINE (130-560 KW)

WITH ESTIMATED POLLUTANT EMISSION FACTORS OF:

	NOx	MIX	VOC	CO	SO₂	PM
GRAM/KW-HR	1.60		0.06	1.50		0.002
GRAM/BHP-HR	1.19		0.045	1.12		0.0015
LBS/1000 GALLON	53.0		1.99	49.7	0.21	0.066

SOURCE: EPA FAMILY NAME CCPXL12.5HPA

CARB EXECUTIVE ORDER: U-R-001-0428