

Case-by-Case Determinations: Locomotives

CONTACT

Moyer Help

Email MoyerHelp@arb.ca.gov

< Back to Carl Moyer Program Page

< Back to CBC Main Page

Reference #2023-14

Request: Allow Napa Valley Wine Train to replace six uncontrolled locomotives with two Tier 4 switcher locomotives.

Air District: Bay Area Air Quality Management District (BAAQMD)

Guidelines Section(s): 2017 Carl Moyer Program, Chapter 6 (Locomotive), Section D.2.

CARB Action: Approved.

Determination: The proposed grant is for Napa Valley Wine Train (NVWT) to replace six uncontrolled locomotives with two Tier 4 locomotives, as two 3-for-1 replacements. Two of the six baseline locomotives contain two uncontrolled off-road engines each and will therefore use off-road emission reduction calculations. The remaining four locomotives contain a single uncontrolled locomotive engine. NVWT will destroy six baseline locomotives (locomotive chassis + engines). The replacement locomotives will be Knoxville Locomotive Works (KLW) NZE15BE T4L, with MTU Series 2000 engines. These engines have been US EPA certified and CARB verified to Tier 4 standards.

Project Type

Baseline Unit

Reduced Unit

3-for-1
Replacement

NVRR 52

Engine 1: 1974 Cummins N-855P220 (400HP)

Engine 2: 1974 Cummins N-855P220 (400 HP)

NVRR 57

Engine 1: 1985 Cummins NTA-855-L4 (400HP)

Engine 2: 1985 Cummins NTA-855-L4 (400 HP)

NVRR 72

Engine: 1959 ALCO 251 V-12 (1800HP)

3-for-1
Replacement

NVRR 62

Engine: 1959 ALCO 251 V-12 (1800HP)

NVRR 69

Engine: 1958 EMD 16-567-C (1950HP)

NVRR 70

Engine: 1958 ALCO 251 V-12 (1800HP)

KLW – 2023 MTU 16V2000S96 (1560HP) – Tier 4

KLW – 2023 MTU 16V2000S96 (1560HP) – Tier 4

NVWT has confirmed with BAAQMD that the two replacement units will be able to perform the same scope of work as the six baseline units, despite the overall decrease in horsepower.

This approval does not constitute a comprehensive review of the project, nor does it imply or equate to “blanket approval” of other similar projects. It is the District's responsibility to verify that the project conforms to all applicable guidelines & statutes, cost-effective limits, co-funding limitations, and is surplus to applicable emission control rules & regulations. Please include this case-by-case reference number in the comment field for this project in the Clean Air Reporting Log (CARL) database.

Determination Date: Aug 11, 2023

Contact: Ken Bhatti (279)-208-7736, Ambreen Afshan (279)-208-7168

Reference # 2022-29

Request: Allow replacement of an uncontrolled diesel switcher locomotive with a zero-emission battery-electric rail car mover (Project Number G-73567).

Air District: San Joaquin Valley Air Pollution Control District (SJVAPCD or District).

Guidelines Section(s): 2017 Carl Moyer Guidelines, Chapter 2, U, and Chapter 6, D.2(B) and (C).

CARB Action: Approved.

Determination: The proposed project consists of replacing a diesel-powered switcher locomotive (1954 model year, EMD GP-9) with a new zero-emission battery-electric rail car mover (Nordco, NVX-E). Chapter 6, section A states that rail equipment such as rail car movers are allowed to replace switcher locomotives. Consistent with Carl Moyer Program goals to fund emerging advanced commercially available technologies yet also ensure incentive funds go towards reliable technology, the Guidelines require that funded emission control technologies are certified and verified. A formal approval process for zero-emission off-road equipment is currently under development to provide assurance that funded equipment will meet Moyer program goals. The air district provided information that the zero-emission equipment is commercially available and can provide one-for-one replacement of diesel-powered equipment. Therefore, the zero-emission equipment is eligible as replacement equipment for funding. Failure of the replacement equipment to provide the required project emission reductions is at the air district's risk.

This project will use CAP incentives and supports the goals of Assembly Bill (AB) 617. The project is in a disadvantaged community and incorporates advanced technologies.

This approval does not constitute a comprehensive review of the project nor should it be considered a blanket approval for similar projects. It is the district's responsibility to verify that the project conforms to applicable cost-effective limits, all other applicable guidelines, and statutes, and is surplus to existing emission control rules. Please include this case-by-case reference number in the comment field for this project in the CARL database.

Determination Date: August 25, 2022

Contact: Holmes Bassette (951-542-3081), or Ken Bhatti (279-208-7736, or Cynthia Ortiz (951-542-3327)

Reference# 2022-15

Request: Allow Union Pacific Railroad (UP) to replace three Tier-0+ locomotives with three zero-emission battery-electric locomotives.

Air District: South Coast Air Quality Management District (SCAQMD or District) (Project number: 23CMP73)

Guidelines Section(s): 2017 Carl Moyer Guidelines (Guidelines), Chapter 6 (Locomotive), Sections A, Table 6-1, D.1.(B), D.1.(C), & D.2.(C).

CARB Action: Approved

Determination: The proposed project consists of replacing three diesel-fueled Tier 0+ locomotives (3000 horsepower (hp) Electromotive Diesel (EMD) model SD40N) with three battery-electric locomotives (one 3000 hp Wabtec model FLXswitch and two 3000 hp Progress Rail EMD model Joule BE2.4C) utilizing Carl Moyer funds.

These baseline locomotives owned by UP are subject to the 1998 South Coast Memorandum of Understanding (MOU).

Consistent with Carl Moyer Program goals to fund emerging advanced technologies and also ensure incentive funds go toward reliable technology, the Guidelines require that funded emission control technologies are certified and California Air Resources Board (CARB) verified. A formal approval process for zero-emission locomotive equipment is currently under development to provide assurance that funded equipment will meet Carl Moyer Program goals. The District provided information that the zero-emission

equipment is commercially available. Therefore, the zero-emission equipment is eligible as replacement equipment for Carl Moyer Program funding. Failure of the replacement equipment to provide the required project emission reductions is at the District's risk.

Until verification occurs, the District's contract for this proposed project may allow the grantee to proceed at the grantee's risk with the following condition:

- SCAQMD shall structure the agreement to prevent the expenditure of any funds until after the locomotives are certified or CARB verified.

Carl Moyer Guideline criteria require Class 1 freight locomotive projects meeting the eligibility requirements for the Goods Movement Emission Reduction Bond Program (Proposition 1B Goods Movement Program) are only eligible for Carl Moyer program funding on a case-by-case basis. Carl Moyer funding is approved for this zero-emission replacement locomotive project only.

This approval does not constitute a comprehensive review of the project nor does it imply or equate to "blanket approval" of other similar projects. It is the District's responsibility to verify that the project conforms to applicable cost-effective limits, all other applicable guidelines and statutes, and is surplus to existing emission control rules. Please include this case-by-case reference number in the comment field for this project in the Clean Air Reporting Log (CARL) database.

Determination Date: April 18, 2022

Contact: Ken Bhatti (Ken.bhatti@arb.ca.gov)

Reference #2020-36

Request: Allow Pacific Harbor Line (PHL) to replace four National Railway Equipment (NRE) locomotives and repower two NRE locomotives. PHL will replace/repower a total of six triple-engine switcher locomotives with four single-engine switcher locomotives in a 3-for-2 replacement and a 3-for-2 repower project.

Air District: South Coast Air Quality Management District (District)

Guidelines Section(s): 2017 Carl Moyer Program, Chapter 3 (Program Administration), Section V.6.B, Chapter 6 (Locomotive), Section D.2, D.3.

CARB Action: Approved.

Determination: The proposed grant is for PHL to replace their four 3GS21B NRE triple-engine genset locomotives and repower two 3GS21C NRE triple-engine genset

locomotives. All baseline locomotives are equipped with three diesel engines (700 horsepower [HP] per engine) and the new or repowered locomotives will be equipped with one Tier 4 diesel engine (2,400 HP). PHL will destroy four triple-engine locomotives (locomotive chassis + engines) and six engines. The replacement locomotives will be the Wabtec ET23DCM and the repowered engines will be the General Electric GEVO L6.

Project Type	Baseline Unit	Reduced Unit
3-for-2 Replacement	PHL 30	PHL New 1
	(700 HP x 3 engines)	(2,400 HP engine)
	PHL 31	
	(700 HP x 3 engines)	PHL New 2
	PHL 33	(2,400 HP engine)
	(700 HP x 3 engines)	
3-for-2 Repower	PHL 34	PHL 80 (repowered)
	(700 HP x 3 engines)	(2,400 HP engine)
	PHL 80*	
	(700 HP x 3 engines)	PHL 81 (repowered)
	PHL 81*	(2,400 HP engine)
	(700 HP x 3 engines)	

* Baseline chassis to be repowered

To correctly calculate emission reductions from this project, the total emissions from the baseline equipment will be subtracted from the total emissions from the reduced equipment for the replacement and repower portions separately. All baseline engines must use U.S. EPA certification emission levels, NOx: 2.7 g/bhp-hr, ROG: 0.11 g/bhp-hr, PM: 0.07 g/bhp-hr.

Project Type	Baseline Emissions	Reduced Emissions
Replacement	PHL 30 + PHL 31 + PHL 33	PHL New 1 + PHL New 2
Repower	PHL 34 + PHL 80 + PHL 81	PHL 80 (repowered) + PHL 81 (repowered)

PHL does not have actual fuel activity records for the baseline locomotives but has provided statements indicating the current annual fleet average usage per locomotive. Independently, the District reviewed information for PHL's operation that is publicly available in the 2019 Port of Los Angeles Air Emission Inventory to more accurately estimate the usage specifically for these triple-engine genset locomotives.

This project directly benefits or is located within a disadvantaged community, it makes use of the cleanest available technology, and is consistent with project types supported by the community.

Note that this approval is limited to the preceding description and does not constitute a comprehensive review of the project. In addition, the District is responsible for ensuring that all projects conform to applicable guidelines and statutes, including all co-funded guidelines and statutes, cost-effectiveness, co-funding limitations, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: December 30, 2020

Contact: Ken Bhatti (916) 323-2730, Holmes Bassette (626) 350-6541

Reference #2020-12**Request:**

- 1) Allow Metrolink to use existing baseline locomotives in zero-emission, alternative fuel, and diesel demonstration projects.
- 2) Allow demonstration projects to be conducted outside of South Coast Air Quality Management District (SCAQMD or District) or out of state.
- 3) Allow the demonstrator to continue operating the locomotives if the repowered locomotive can achieve the Tier 4 or cleaner emission standard.
- 4) Request to replace a 2008 Tier-2 locomotive with a Tier- 4.
- 5) Allow the grantee to fulfill the Carl Moyer scrap requirement by destroying the locomotive propulsion engine and off-road head-end power (HEP) engine (if applicable) of the baseline locomotive.

Air District: South Coast Air Quality Management District (SCAQMD or District)

Guidelines Section(s): 2011 Carl Moyer Program (CMP), Chapter 3 (Program Administration), Section AA.4

ARB Action:

- 1) Approved
- 2) Approved
- 3) Approved
- 4) CBC determination not needed
- 5) Approved

Determination:

1) This case-by-case (CBC) determination shall modify previous CBC #2013-10, which allowed for the retention of five existing baseline locomotives for use in limited-term alternative fuel demonstration projects in SCAQMD. The preceding CBC had the original intent of demonstrating natural gas; however, the District reported that no operators expressed an interest in demonstrating the alt-fuel mainly due to the infrastructure and safety concerns. The request to allow the Metrolink to use up to five baseline locomotives in zero-emission, alternative fuel, and diesel demonstration projects is approved.

2) The District stated there were no demonstration project operators found within SCAQMD or within the State of California. There was only one location identified for the operation of the demonstration project and it is out of the state. The request to allow the demonstration project to occur outside of SCAQMD or out of state is approved.

3) The request to allow the five demonstration locomotives to continue operating if the repowered locomotives achieve the Tier- 4 or cleaner emission standard is conditionally approved provided the locomotives can maintain Tier- 4 emission levels.

4) The request to replace a 2008 Tier- 2 locomotive with a Tier- 4 locomotive is consistent with CMP Guidelines and thus does not need a CBC determination.

5) The request to allow the grantee to fulfill the scrapping requirement by destroying only the main engine and the off-road HEP engine of the locomotive and preserving the chassis is approved. Since locomotive components have a long lifespan, California Air Resources Board (CARB) recognizes the benefits of reusing and/or recycling baseline locomotives. To prevent the baseline locomotive bodies from being fitted with a similar high-polluting engine, the grantee will be required to sign an agreement which will ensure, with due diligence, that the baseline locomotive, if brought back into service, will be repowered to a Tier- 4 or cleaner locomotive engine standard and a Tier- 4 or cleaner off-road engine standard (for HEP if applicable). This allowance adds to the previously requested CBC's #2013-10 and #2018-04. Note that this approval is solely with regard to the items above and does not otherwise impact, alter, or relieve the District or Metrolink from any other aspect of the preceding CBC's #2013-10, #2014-25, #2015-03, or #2018-04 nor does it constitute a comprehensive review of the project. In addition, the District is responsible for ensuring that all projects conform to applicable guidelines and statutes, including all co-funded guidelines and statutes, cost-effectiveness, co-funding limitations, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: March 18, 2020

Contact: Holmes Bassette (626) 350-6541, Ken Bhatti (916) 323-2730

Reference #2020-05

Request: Allow the North County Transit District (NCTD) to fulfill the scrapping requirement of five locomotives by destroying only the main locomotive engines and the off-road HEP engines. The locomotive chassis will not be destroyed but instead will be donated to the Pacific Southwest Railway Museum (PSRM) and used as an educational display.

Air District: San Diego Air Pollution Control District (SDAPCD)

Guidelines Section(s): 2011 Carl Moyer Program, Chapter 3 (Program Administration),

Section AA.4

ARB Action: Approved.

Determination: This case-by-case determination shall modify the previously requested CBC: #2018-01. The proposed changes shall allow NCTD to retain and then donate five intact locomotive chassis with their destroyed locomotive engines to PSRM. The California Air Resources Board (CARB) recognizes the educational value of historical displays and the expense associated with destruction of the locomotive chassis. SDAPCD will be responsible for tracking and providing evidence of the transfer between NCTD and PSRM.

If the baseline locomotive chassis is ever brought back into service, it must be repowered to a Tier 4 or cleaner locomotive engine standard and a Tier 4 or cleaner off-road engine standard (for HEP if applicable). The grantee, NCTD, will still be responsible for ensuring, with due diligence, the baseline locomotives meet these repower standards for the remaining life of the locomotives. The contract between SDAPCD and NCTD must be amended to reflect that only destruction of the locomotive engines is now required, and that NCTD will be held liable if the locomotive chassis are found to be in violation. A written agreement between SDAPCD and the museum is required to demonstrate an understanding of locomotive repower standards.

Note that this approval is solely with regard to the items above and does not constitute a comprehensive review of the project. In addition, the District is responsible for ensuring that all projects conform to applicable guidelines and statutes, including all co-funded guidelines and statutes, cost-effectiveness, co-funding limitations, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: January, 27 2020

Contact: Joshua Simmons (916) 327-9435, Ken Bhatti (916) 323-2730

Reference # 2020-21

Request: Allow the Burlington Northern Santa Fe Railway Company (BNSF) to destroy nine (9) Tier 0/0+ out of state locomotives in lieu of seven (7) Tier 0/0+ locomotives and two (2) Tier 1 engines referenced in the previous case-by-case (CBC) #2020-04 and #2019-13.

Air District: South Coast Air Quality Management District (SCAQMD or District)

Guidelines Section(s): 2017 Carl Moyer Guidelines, Chapter 2 (General Criteria), Section CC; Chapter 3 (Program Administration), Section X.4; Chapter 6 (Locomotive), Section D.1. (B), D.1. (C), D.1. (I), & D.2. (E).

CARB Action: Approved

Determination: This case-by-case determination will modify and effectively replaces the previously issued case-by-case approval, #2020-04.

The previous agreement included the destruction of seven Tier 0/0+ line haul locomotives and two Tier 1 locomotive engines that were in service outside of California. BNSF wants to substitute the two Tier 0/0+ locomotives for two Tier 1 locomotives engines specified in the previous agreement.

With this amendment, CARB is approving BNSF's request to destroy the engines and chassis for nine Tier 0/0+ locomotives. This modification does not otherwise impact, alter, or relieve the district or BNSF from any other aspects of the preceding CBC #2019-13. SCAQMD must verify the destruction of the out-of-state locomotives is done according to the Carl Moyer Program locomotive destruction requirements outlined in Chapter 6, section D.1(I) and in accordance CBC #2019-13.

This approval does not constitute a comprehensive review of the project. It is the District's responsibility to verify that the project conforms to applicable cost-effective limits, all other applicable guidelines and statutes, and is surplus to existing emission control rules. Please include this case-by-case reference number in the comment field for this project in the CARL database.

Determination Date: July 1, 2020

Contact: Ken Bhatti (916) 323-2730 or Holmes Bassette (626) 350-6541

Reference #2020-04

Request: Allow the Burlington Northern Santa Fe Railway Company (BNSF) to destroy five (5) Tier 0 and two (2) Tier 0+ locomotives in lieu of seven (7) Tier 1 locomotive engines referenced in previous case-by-case (CBC) #2019-13.

Air District: South Coast Air Quality Management District (SCAQMD or District)

Guidelines Section(s): 2017 Carl Moyer Guidelines, Chapter 2 (General Criteria), Section CC; Chapter 3 (Program Administration), Section X.4; Chapter 6 (Locomotive) , Section D.1. (B), D.1. (C), D.1. (I), & D.2. (E).

ARB Action: Approved.

Determination: This case-by-case determination will modify a previous CBC, #2019-13.

The prior agreement included the destruction of up to nine Tier 1 line-haul locomotive engines that were in service outside of California. BNSF would like to substitute seven locomotives (5 Tier 0 and 2 Tier 0+) for seven locomotive engines (Tier 1) that were specified in the previous agreement.

With this CBC amendment, BNSF will destroy the engines and chassis for five Tier 0 and two Tier 0+ locomotives. SCAQMD must verify that the destruction of the out-of-state locomotives is done according to the Carl Moyer Program locomotive destruction requirements outlined in Chapter 6, Section D.1(l).

Two Tier 1 locomotive engines, currently in service out-of-state, will have engines destroyed and these chassis may be re-powered in the future with Tier 1+ or cleaner locomotive engines. These re-powered Tier 1+ locomotives are banned from California and may not be sold for the remaining life of the locomotives.

These changes have the added benefit of realizing additional emissions reductions captured from the removal of the lower Tier locomotives. This modification does not otherwise impact, alter, or relieve the District or BNSF from any other aspects of the preceding CBC #2019-13.

This approval does not constitute a comprehensive review of the project. It is the District's responsibility to verify that the project conforms to applicable cost-effective limits, all other applicable guidelines and statutes, and is surplus to existing emission control rules. Please include this case-by-case reference number in the comment field for this project in the CARL database.

Determination Date: January, 23 2020

Contact: Holmes Bassette (626) 350-6541, Ken Bhatti (916) 323-2730

Reference #2019-13

Request: Allow the Burlington Northern Santa Fe Railway Company (BNSF) to fulfill the Carl Moyer Program scrap requirement by permanently banning up to 9 baseline locomotives out of California for the remaining life of the locomotive.

Air District: South Coast Air Quality Management District (SCAQMD or District)

Guidelines Section(s): 2017 Carl Moyer Guidelines, Chapter 2 (General Criteria), Section H, CC; Chapter 3 (Program Administration), Section X.4; Chapter 6 (Locomotive), Section D.1. (B), D.1. (C), D.1. (I), D.2. (E).

ARB Action: Approved.

Determination: The proposed grant is for BNSF to replace up to 9 of their existing 2005 Tier 2 (General Electric ES44DC) line-haul locomotives with new 2019 Tier 4 (General Electric Evolution Series) line-haul locomotives. In lieu of destroying the baseline Tier 2 locomotives, BNSF will permanently ban the units from service in California, resulting in permanent emission reductions in the State. To prevent the applicant from expanding their fleet, BNSF will destroy the engines of 9 Tier 1 line-haul locomotives that are currently in service outside of California. The chassis for these locomotives may be used at a later date. If BNSF decides to repower these chassis in the future, they must be repowered with a Tier 1+ or cleaner locomotive engine. These repowered locomotives must also be banned from entering California.

Due to the high value of a Tier 2 locomotive and the long remaining useful life, California Air Resources Board recognizes the benefits of reusing and/or recycling baseline locomotives. To ensure each banned locomotive will not enter into California for the remaining life of the locomotive, BNSF must install Wi-Tronix GPS tracking that will monitor their location throughout the year. BNSF must provide the location data for each of the banned locomotives semi-annually to SCAQMD for the remaining life of the locomotives. In addition to monitoring, BNSF must set up geofencing to help ensure the banned locomotives stay outside of California in real-time for the remaining life of the locomotives. If the banned locomotives ever cross into California, SCAQMD must take the appropriate enforcement action.

The following additional safeguards are to be included as part of the grant agreement:

1. SCAQMD must verify the destruction of the out of state Tier 1 line-haul locomotive engines is done according to the Carl Moyer Program locomotive destruction requirements outlined in Chapter 6, Section D.1(I).
2. BNSF is precluded from selling the banned locomotives (Tier 2's and repower Tier 1+) for the remaining life of the locomotives. This is to avoid the risk of another owner/operator who may unintentionally bring the equipment back into California.

This project directly benefits or is located within a disadvantaged community, it makes use of the cleanest available technology, and is consistent with project types supported by the community. Community members have identified locomotives and rail yard facilities as a specific source of emissions and for the reasons outlined above, this project is a crucial part of realizing those benefits.

Note that this approval is solely with regard to the items above and does not constitute a comprehensive review of the project. In addition, the District is responsible for ensuring that all projects conform to applicable guidelines and statutes, including all co-funded guidelines and statutes, cost-effectiveness, co-funding limitations, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: August 26, 2019

Contact: Ken Bhatti (916) 323-2730, Adriana Smith (916) 323-5450

Reference #2019-09

Request: Allow Caltrans, a state agency, to enter into a lease with option to purchase financing agreement for a locomotive replacement project. This project will use a variety of funding sources that may include Moyer, AB923, and Community Air Protection Program (CAP) Funds.

Air District: Bay Area Air Quality Management District (BAAQMD)

Guidelines Section(s): 2017 Carl Moyer Guidelines, Chapter 6, Section D.1

ARB Action: Approved.

Determination: The BAAQMD is proposing to fund a passenger locomotive replacement project where Caltrans, the applicant/owner will enter into a lease with option to purchase agreement with Siemens to replace two, Tier 2 locomotives with two, new Tier 4 locomotives. Caltrans will have the option to purchase the locomotives at the end of the lease term. The locomotives will operate on the Capitol Corridor. Other air districts in the operating region may also contribute funding for this project.

Carl Moyer Program and AB923 funds among other sources of funding, like Community Air Protection funds will be used towards this project to help support the goals of AB 617. The project directly benefits or is located within a disadvantaged community, makes use of the cleanest technology, and is consistent with project types supported by the

community. Community members have identified Caltrans locomotives as a specific source of emissions so for the reasons outlined above, this project is a crucial part of realizing those benefits.

This lease with option to purchase arrangement is approved solely on the condition that Caltrans is a state agency and will be the grantee/owner to the project. The project will adhere to the Moyer Guideline requirements. In addition to the standard safeguards related to non-performance and grantee penalties, there will also be special conditional safeguards included in the agreement to protect state investments. These safeguards ensure the necessary emission benefits occur for at least the term as set forth in the agreement.

The following special conditional safeguards are to be included as part of the lease with option to purchase grant agreement:

1. Grantee will consider exercising its option to purchase pending availability of funds at the end of the lease term, after 15 years of leasing, or at any time funding becomes available during the lease term,
2. Grantee will provide a copy of lease agreement to the air district and regularly report on the status of the lease or purchase to the district,
3. In no event will the terms of the lease agreement contradict the requirements of the grant agreement or CARB Program Guidelines, and
4. Grantee must repay the total grant funds awarded on a prorated basis for selling, retiring, scrapping, ore removing any piece of equipment from service within the boundaries of the air district prior to completing its project equipment contract term.

Note that this approval is solely with regard to the one item above and does not constitute a comprehensive review of the project. In addition, the District is responsible for ensuring that the projects conform to all applicable guidelines and statutes, including all co-funded guidelines and statues, cost-effectiveness, co-funding limitations, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: May 30, 2019

Contact: Adriana Smith (916) 323-5450, Ken Bhatti (916) 323-2730

Reference #2019-08

Request: Allow a trade down project where Metropolitan Stevedore Company (Metro Ports) would buy out of their existing Moyer contract and enter into a new Moyer contract for a new Tier 4 switcher locomotive. The Metro Ports baseline Tier 2 locomotive would be donated to Trona Railway (Trona), who will scrap their existing uncontrolled pre-1973 switcher locomotive.

Air District: South Coast Air Quality Management District (SCAQMD), Mojave Desert Air Quality Management District (MDAQMD)

Guidelines Section(s): 2017 Carl Moyer Guidelines, Chapter 2 (General Criteria), Section G, H, M; Chapter 3 (Program Administration), Sections C.4.(I), T.9.(A)(B), X.4.(A)(B); Chapter 6 (Locomotives), Section D.1(H), Section D.2.(E).

ARB Action: Approved.

Determination: The South Coast AQMD is proposing to fund a switcher locomotive project where Metro Ports will replace one Tier 2 switcher locomotive with one new Tier 4 switcher locomotive. The baseline Tier 2 switcher locomotive, which would typically need to be scrapped under the Moyer guideline requirements, will instead be donated to Trona in MDAQMD, who will operate this Tier 2 switcher locomotive and destroy their existing uncontrolled pre-1973 switcher locomotive. In this arrangement, the emission reductions from the Tier 2 locomotive to the Tier 4 locomotive, as well as the emission reductions from the uncontrolled locomotive to the Tier 2 locomotive, will be considered.

The existing 20-year Moyer contract (Project # 08120) with Metro Ports Tier 2 switcher locomotive must be amended by SCAQMD to reduce the term of the contract down to 10 years, which will end this contract. The applicant is responsible for repaying the prorated Moyer Program grant based on the reduced project life. SCAQMD may allow the prorated repayment of Moyer Program funds to be adjusted with the final Moyer grant award of the new Tier 4 switcher contract. This will avoid the up-front repayment by the applicant, reducing the hardship on the grantee. The prorated repayment amount will be subtracted from the final Moyer portion of the district grant award.

The uncontrolled switcher locomotive must be destroyed as outlined in Chapter 3, Section X.4 of the Moyer Guidelines. The Tier 2 switcher locomotive needs to enter into a contract for the next 10 years with MDAQMD in order to consider the emission reductions from the uncontrolled switcher locomotive to the Tier 2. In order to ensure the emission reductions occur in their respective air basins, the Tier 2 switcher locomotive cannot re-enter SCAQMD. MDAQMD must track the location of the Tier 2 locomotive using GPS

tracking and submit annual location reports for the life of the contract.

This project directly benefits or is located within a disadvantaged community, it makes use of the cleanest available technology, and is consistent with project types supported by the community. Community members have identified locomotives and rail yard facilities as a specific source of emissions and for the reasons outlined above, this project is a crucial part of realizing those benefits.

Note that this approval is solely with regard to the items above and does not constitute a comprehensive review of the project. In addition, the Districts are responsible for ensuring that all projects conform to applicable guidelines and statutes, including all co-funded guidelines and statutes, cost-effectiveness, co-funding limitations, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: August 28, 2019

Contact: Ken Bhatti (916) 323-2730, Adriana Smith (916) 323-5450

Reference #2018-20

Request: Allow CEMEX Locomotive Project number #1-2017 (project) to proceed as an eligible Carl Moyer Program project using modified cost-effectiveness calculation that excludes the portion of emissions benefit attributed to environmental mitigation funds.

Air District: Mojave Desert AQMD

Guidelines Section(s): 2017 Carl Moyer Program Guidelines, Chapter 2 (General Criteria), Sections L and V, Chapter 6 (Locomotives), Section D.

ARB Action: Approved.

Determination: The proposed grant is for the Mojave Northern Railroad Company to replace one uncontrolled (Pre-1973 EMY) Electro-Motive Division of General Motors (EMD) diesel-electric six-axle short-haul locomotive with a Tier 4 Knoxville Locomotive Works 4000 Series (SC32C-DE-T4L) diesel-electric six-axle short-haul locomotive. California Air Resources Board (CARB) approves the District's request to co-fund this project with Carl Moyer Program funds. Project costs will be shared with Detroit Diesel Corporation (DDC) environmental mitigation funds and the CEMEX operator cost share. The approval is contingent on exclusion of the share of project emissions benefit attributed to the DDC funds and adjustment to the cost-effectiveness calculation to exclude that proportional

benefit, as explained below. We also specify below requirements related to the pending verification of the replacement locomotive.

The co-funding sources, estimated funding amounts, and portion of project cost for this locomotive project include:

- 1. Carl Moyer Program Year 19 (G16-M015) funds of \$657,641 (19%);
- 2. Carl Moyer Program Year 20 (G17-M019) funds of \$342,359 (10%);
- 3. Operator Cost Share \$852,909 (24.6%); and
- 4. Detroit Diesel Corporation \$1,604,250 (46.4%).

Recent legislative changes allow Carl Moyer Program funds to be combined with other funding sources without the additional funds being factored into the cost-effectiveness calculation, provided that these funds are not used to meet the District's Carl Moyer Program matching funds requirement (Health and Safety Code (H&SC) §44284.2(a)). Under the Carl Moyer Program 2017 Guidelines, mitigation funds may be included in projects that are co-funded with Carl Moyer Program funds only with CARB case-by-case approval (Chapter 3, Section L.3.). The Guidelines further require all covered emissions reductions achieved from a project with multiple funding sources be credited as reductions from the Moyer Program, to ensure proper State Implementation Plan accounting, improve the likelihood of federal credit, and avoid risk of double-counted reductions (Chapter 3, Section L.7.). Statute requires CARB and air districts to "take all appropriate and necessary actions to ensure that emissions reductions achieved through the program are credited by the United States Environmental Protection Agency to the appropriate emission reduction objectives in the state implementation plan" (H&SC §44286(g)). In this case CARB staff finds that because the DDC mitigation funds have been designated under court agreement as needed to correct for excess emissions from improperly certified 2010 DDC heavy-duty trucks, there is risk of double-counting emissions benefit.

Following consultation with U.S. EPA and to ensure SIP creditability, reductions credited to the Carl Moyer Program for this project will exclude a portion of total project reductions. The excluded reductions will be proportional to the 46.4 percent share of total project cost coming from the mitigation funds. The reason of the exclusion of reductions is to avoid potential double-counting of reductions due to the mitigation action, which corrects for excess emissions from Detroit Diesel 2010 model year trucks. The DDC

Locomotive Mitigation Plan approved in the U.S. District Court specifically allows for the inclusion of Carl Moyer Program funds in projects to mitigate these excess emissions. Although it is likely the emissions benefit of the locomotive project exceeds any loss of benefit from 2010 trucks currently operating in the Mojave Desert Air Basin, excluding from SIP accounting the portion of locomotive project benefits made possible by the mitigation funds avoids the potential for counting the same reductions twice and ensures only surplus emissions benefit is credited.

All funding sources and amounts, including the total project cost amount, must be reported for this project in the CARL database (2017 Carl Moyer Program Guidelines, Chapter 3, Section L.8). The sum of project funding from all funding sources, the Carl Moyer Program as well as Non-Moyer program funds, must be disclosed and cannot exceed the total project cost (2017 Carl Moyer Program Guidelines, Chapter 3, Section V.4). The total project cost for this locomotive is limited to what is allowed under Chapter 6 of the 2017 Carl Moyer Program Guidelines. The project is still considered a co-funded project, and the total project cost of \$3,457,159 will be included in project fiscal accounting. Despite the exclusion of emission reductions in proportion to mitigation funds share, the project is expected to remain well within Moyer Program cost-effectiveness limits. The District will use the non-calculation form in CARL to report the project, and the reason for the proportional exclusion of emissions benefit will be noted in the comments field.

Note that this approval is solely with regard to the item above and does not constitute a comprehensive review of the project. The Tier 4 KLV locomotive is certified by U.S. EPA through December 2018, and the manufacturer is seeking an extension of the certification. We note, however, that the 4000 Series replacement locomotive in this project has not yet received CARB locomotive emissions verification. Until verification occurs, the District contract for this proposed project may allow the grantee to commence work at the grantee's own risk with the following conditions:

- a. No payment of any kind is allowed prior to CARB locomotive verification, regardless of the allowance to commence work at the grantee's risk or the delivery and acceptance of the equipment by the grantee.

- b. If the locomotive is not ultimately CARB verified, then the District must amend the contract and take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment as determined by the District in accordance with Carl Moyer Program Guidelines and authorizing statutes.

In addition, the District is responsible for ensuring that the project conforms to all applicable guidelines and statutes, including cost-effectiveness, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: September 12, 2018

Contact: Yvonne Sanchez (626) 575-6618, Hurshey Shahi (916) 323-9687

Reference #2018-04

Request: Allow the grantee to fulfill the Carl Moyer scrap requirement by destroying the locomotive propulsion engine and off-road head-end power (HEP) engine from up to 15 of the baseline passenger locomotives.

Air District: South Coast AQMD

Guidelines Section(s): 2011, Chapter 3 (Program Administration), Section AA.4.

ARB Action: Approved.

Determination: This case-by-case determination shall add to the previously requested CBC: #2013-10.

This would allow the grantee to fulfill the scrapping requirement by destroying only the main locomotive engine and the off-road HEP engine of the locomotives. The grantee would be allowed to keep the locomotive chassis. Since locomotive components have a long lifespan, ARB recognizes the benefits of reusing and/or recycling baseline locomotives.

To prevent the baseline locomotive bodies from being fitted with a similar high-polluting engine, the grantee will be required to sign an agreement which will ensure, with due diligence, that the baseline locomotive, if brought back into service, will be repowered to a Tier 4 or cleaner locomotive engine standard and a Tier 4 or cleaner off-road engine

standard (for HEP if applicable).

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: March 6, 2018

Contact: Ken Bhatti (916)323-2730, Adriana Smith (916)323-5450

Reference #2018-01

Request: 1) Allow work to commence on project prior to California Air Resources Board (CARB) locomotive verification. 2) Allow this project to be co-funded with multiple funding sources, as permissible by SB 513 (Beall, 2015), up to the total project cost without requiring the Non-Moyer funds (listed below) to be factored into the cost-effectiveness calculation.

Air District: San Diego APCD

Guidelines Section(s): 2011 Carl Moyer Guidelines, Chapter 2 (General Criteria), Sections L, M, N, O, BB; Chapter 3 (Program Administration), Sections V.5.(A) 3, Y.4, AA.4; Chapter 11 (Locomotives), Section D.1(J), Section D.2.(A).

ARB Action: Approved.

Determination: 1) The proposed grant is for the North County Transit District (NCTD) to replace five Tier 0 passenger locomotives with five new Tier 4 units. The Tier 4 passenger locomotive is certified by U.S. EPA; however, it has not yet received CARB locomotive emission verification.

CARB approves the District's request that the grant agreement for this proposed project to allow the grantee to commence work, at the grantee's own risk, prior to certification and verification of this equipment with the following conditions:

- (a) No payment of any kind is allowed prior to CARB locomotive verification, regardless of the allowance to commence work at the grantee's risk or the delivery and acceptance of the equipment by the grantee.

- (b) If the locomotives are not ultimately CARB locomotive verified, then the District must amend the contract and take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment as determined by the District in accordance with Carl Moyer Program Guidelines and authorizing statutes.

2) Legislative changes (SB 513) to the Carl Moyer Program allows Carl Moyer Program funds to be combined with various other funding sources without these additional public funds being factored into the cost-effectiveness calculation, provided that these funds are not used to meet the District's Carl Moyer Program matching funds requirement. This approval will allow the project to utilize the statutory flexibility provided by SB 513 to allow co-funding. All covered emission reductions (NOx, ROG, PM) achieved from this project with the funding sources stated below, will be credited as reductions to the Carl Moyer Program. Other emission reductions such as greenhouse gas emissions may be claimed by the other programs used in co-funding this project.

The co-funding sources, and estimated funding amounts for this locomotive project include:

- 1. Carl Moyer Program funds up to \$321,499; and
- 2. AB 2766 funds up to \$9,678,501; and
- 3. State Rail Assistance/State of Good Repair & State Transit Assistance funds of \$11,966,875; and
- 4. California State Transportation Agency's TIRCP Program (receiving a grant from the greenhouse gas reduction fund) \$13,860,000.

All funding sources and amounts, including the total project cost amount, must be reported for this project in the CARL database. The sum of project funding from all funding sources, the Carl Moyer Program as well as Non-Moyer program funds, must be disclosed and cannot exceed the total project cost. The total project cost for these five locomotives is \$35,826,875. Moyer eligible costs are allowed under the locomotives chapter (Chapter 11) in the 2011 Carl Moyer Program Guidelines. Both the Carl Moyer Program funds and the AB 2766, which are being used as match funds, are required to be included in the project cost-effectiveness calculation; while the other funding sources stated above need not be included in the cost-effective calculation.

Furthermore, these 2011 Guidelines (Chapter 2, Sections N and O) exempt public agency applicants from providing a minimum of 15 percent of the project cost from non-public sources. NCTD is a public agency, therefore they will be allowed to fund up to the total project cost with public funding.

Note that this approval is solely with regard to the two items above and does not constitute a comprehensive review of the project. In addition, the District is responsible for ensuring that the projects conform to all applicable guidelines and statutes, including all co-funded guidelines and statutes, cost-effectiveness, co-funding limitations, and is surplus to existing in-use regulations. Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: February 16, 2018

Contact: Adriana Smith (916)323-5450, Ken Bhatti (916)323-2730, Hurshey Shahi (916)323-9687, Katherine Garrison (916)322-1522

Reference #2017-01

Request: 1) Allow work to commence on project prior to U.S. EPA locomotive certification and CARB locomotive verification. 2) Allow the grantee to fulfill the Carl Moyer scrap requirement by destroying the locomotive propulsion engine and off-road head-end power (HEP) engine from the baseline locomotive. 3) Allow the District to estimate fuel consumption based on increased workload. 4) Allow the baseline locomotive's off-road HEP engine to be replaced with a locomotive engine. 5) Allow this project to be co-funded with multiple funding sources, including a grant from the greenhouse gas reduction fund to California State Transportation Agency for their Transit and Intercity Rail Capitol Program (TIRCP), as permissible by SB 513 (Beall, 2015) up to the total project cost without requiring these Non-Moyer funds to be factored into the cost-effectiveness calculation. (Project #: 18-MOY-37)

Air District: Bay Area AQMD/San Joaquin Valley APCD

Guidelines Section(s): 2011 Carl Moyer Guidelines, Chapter 2 (General Criteria), Sections L, M, N, O, BB; Chapter 3 (Program Administration), Sections V.5.(A) 3, Y.4, AA.4; Chapter 11 (Locomotives), Section D.1(J), Section D.2.(A), Section D.6.

ARB Action: Approved.

Determination: 1) The proposed grant is for the San Joaquin Regional Rail Commission (SJRRRC) to replace two Tier 0+ passenger locomotives with two new Tier 4 units. The

proposed project includes replacement locomotives that are not yet U.S. EPA locomotive certified and CARB locomotive verified.

The CARB approves the District's request that the grant agreement for this proposed project allow the grantee to commence work at the grantee's own risk prior to certification and verification of this equipment with the following conditions:

- (a) No payment of any kind is allowed prior to U.S. EPA locomotive certification and CARB locomotive verification, regardless of the allowance to commence work at the grantee's risk or the delivery and acceptance of the equipment by the grantee.
- (b) If the locomotives are not ultimately U.S. EPA locomotive certified and CARB locomotive verified, then the District must amend the contract and take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment as determined by the District in accordance with Carl Moyer Program Guidelines and authorizing statutes.

2) This approval allows the grantee to fulfill the scrapping requirement by destroying only the baseline locomotive engine. The grantee would be allowed to keep the locomotive body. To prevent the baseline locomotive body from being fitted with a similar high-polluting engine, the grantee must sign an agreement with the District (such as included in the grant agreement) which will ensure, with due diligence, that the baseline locomotive, if brought back into service, will be repowered to a Tier 4 or cleaner locomotive engine standard.

3) This approval confirms the District's use of a 10% fuel increase for the replacement locomotive when calculating emission reductions. The replacement locomotive has significantly greater horsepower and will be pulling an additional two railcars; therefore fuel consumption is likely to increase. Based on the District staff's best engineering judgement, fuel consumption for the new locomotive will be increased 10% relative to the baseline locomotive.

4) This approval allows the existing propulsion engine and HEP engine system to be replaced with a combined propulsion and HEP system. Unlike the baseline locomotive, the replacement will not be comprised of one locomotive engine and one off-road HEP engine, but instead will use a combined propulsion and hotel power system.

5) Recent legislative changes (SB 513) to the Carl Moyer Program allows Carl Moyer Program funds to be combined with various other funding sources without these additional public funds being factored into cost-effectiveness calculation; provided, that these funds are not used to meet the District's Carl Moyer Program matching funds requirement. While the full allowances provided by SB 513 have not yet been incorporated into the Carl Moyer Program Guidelines, this approval will allow the project to utilize the statutory flexibility provided by SB 513 to allow co-funding with the greenhouse gas reduction fund grant. All covered emission reductions (NOx, ROG, PM) achieved from this project with the funding sources stated below, will be credited as reductions to the Carl Moyer Program. Other emission reductions such as greenhouse gas emissions may be claimed by the other programs used in co-funding this project.

The co-funding sources, and estimated funding amounts for this locomotive project include:

- 1. Carl Moyer Multidistrict Year 17 (G14-M041) of \$2,495,000;
- 2. Carl Moyer Program/AB 923 funds:
 - a) Bay Area AQMD (\$2,505,000) and
 - b) San Joaquin Valley APCD (\$2,500,000), and
- 3. California State Transportation Agency's TIRCP Program (receiving a grant from the greenhouse gas reduction fund of up to \$7,500,000).

All funding sources, and amounts, including the total project cost amount, must be reported for this project in the CARL database. The sum of project funding from all funding sources; the Carl Moyer Program as well as Non-Moyer program funds, must be disclosed and cannot exceed the total project cost. The total project cost for these two locomotives is what is allowed under the locomotives chapter (Chapter 11) in the current Carl Moyer Program Guidelines (2011). Additionally, these 2011 Guidelines (Chapter 2 Sections N and O) exempt public agency applicants from providing a minimum of 15 percent of the project cost from non-public sources. The SJRRC has stated that they are a public agency and therefore they will be allowed to fund up to the total project cost with public funding.

Note this approval is solely with regarding to the 5 items above; it does not constitute a comprehensive review of the project. It is the District's responsibility to verify that the

project conforms to all applicable guidelines and statutes, including the co-funded TIRCP guidelines and statutes, including cost-effectiveness and co-funding limitations, and is surplus to existing emission control regulations.

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: April 13, 2017

Contact: Ken Bhatti (916)323-2730, Hurshbir Shahi (916)323-9687, Katherine Garrison (916)322-1522

Reference #2015-14

Request: Allow the grantee to fulfill the Carl Moyer scrap requirement by destroying the main engine from the baseline locomotive. The baseline locomotive body will be repowered with a Tier 4 or cleaner engine. (Project# [16MOY38])

Air District: Bay Area AQMD

Guidelines Section(s): 2011, Chapter 3 (Program Administration), Section AA.4.

ARB Action: Approved.

Determination: This case-by-case determination shall modify the previously requested CBC: #2015-08.

Although the life cycle for a locomotive is different than other types of equipment, the Carl Moyer program currently includes the same scrapping requirements for locomotives as it does for all other types of equipment. This would allow the grantee to fulfill the scrapping requirement by destroying only the locomotive engine. The grantee would be allowed to keep the locomotive body. Since locomotive components have a long lifespan, ARB recognizes the benefits of reusing and/or recycling baseline locomotives.

To prevent the baseline locomotive body from being fitted with a similar high-polluting engine, the grantee will be required to sign an agreement which will ensure, with due diligence, that the baseline locomotive will be repowered with a Tier 4 or cleaner engine. A Tier 4 or cleaner engine meets the most stringent federal standard for locomotives and is therefore being required for this repowered locomotive to operate in California.

Please include this case-by-case reference number in the comment field for the project in

the CARL database.

Determination Date: October 9, 2015

Contact: Ken Bhatti (916)323-2730

Reference #2015-13

Request: Allow work to commence on project prior to U.S. EPA locomotive emissions certification and ARB locomotive emissions verification.

Air District: South Coast AQMD

Guidelines Section(s): 2011, Chapter 2 (General Criteria), Section AA; Chapter 11 (Locomotives), Section D.1.(J) and Section D.2.(A).

ARB Action: Approved.

Determination: The proposed grant is to replace and scrap 10, F59PH(I) Tier 0+ with Tier 4 passenger locomotives. The proposed project includes replacement locomotives that are not yet U.S. EPA locomotive emissions certified and ARB locomotive emissions verified.

The ARB approves the District's request that the grant agreement for this proposed project allow the grantee to commence work at the grantee's own risk prior to emissions certification and verification of this equipment with the following conditions:

- (1) The District shall structure the agreement to prevent the expenditure of any funds until after the locomotives are U.S. EPA locomotive emissions certified and ARB locomotive emissions verified.
- (2) If the locomotives are not ultimately U.S. EPA locomotive emissions certified and ARB locomotive emissions verified to meet Tier 4 standards, then the district must amend the contract and take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment as determined by the District in accordance with Carl Moyer Program Guidelines and authorizing statutes.

- (3) If the locomotives are sold and released under a U.S. EPA issued experimental operating permit, payment may not be made until after subsequent U.S. EPA locomotive emissions certification and ARB locomotive emissions verification is completed. No payment of any kind is allowed prior to U.S. EPA locomotive emissions certification and ARB locomotive emissions verification, regardless of the allowance to commence work at the grantee's risk or the delivery and acceptance of the equipment by the grantee.

Note this approval is only to allow work to begin on this project prior to equipment U.S. EPA locomotive emissions certification and ARB locomotive emissions verification; it does not constitute a comprehensive review of the project. It is the District's responsibility to verify that the project conforms to all applicable guidelines and statutes, including cost-effectiveness and co-funding limitations, and is surplus to existing emission control regulations.

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: September 1, 2015

Contact: Ken Bhatti (916)323-2730

Reference #2015-08

Request: Allow the grantee to fulfill the Carl Moyer scrap requirement by destroying the main Tier 0 engine from the baseline locomotive.

Air District: Bay Area AQMD

Guidelines Section(s): 2011, Chapter 2 (General Criteria), Section AA; Chapter 3 (Program Administration), Section AA.4; Chapter 11 (Locomotives), Section D.1.(J) and Section D.2.(A).

ARB Action: Approved.

Determination: Although the life cycle for a locomotive is different than other types of equipment, the Carl Moyer program currently includes the same scrapping requirements for locomotives as it does for all other types of equipment. This would allow the grantee to fulfill the scrapping requirement by destroying only the locomotive engine. The grantee would be allowed to keep the locomotive body. Since locomotive components have a

long lifespan, ARB recognizes the benefits of reusing and/or recycling baseline locomotives.

To prevent the baseline locomotive body to be fitted with a similar high-polluting engine, the grantee will be required to sign an agreement which will ensure, with due diligence, that the baseline locomotive will be repowered with an engine certified to a tier cleaner than the previous engine and the baseline locomotive will no longer operate in California.

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: June 15, 2015

Contact: Ken Bhatti (916)323-2730

Reference #2015-01

Request: Allow work to commence on project prior to ARB locomotive emissions verification.

Air District: South Coast AQMD

Guidelines Section(s): 2011, Chapter 2 (General Criteria), Section AA; Chapter 3 (Program Administration), Section AA.4; Chapter 11 (Locomotives), Section D.1.(J) and Section D.2. (A).

ARB Action: Approved.

Determination: The proposed grant is to replace two EMD SD40-2, Tier 0+ 1976 locomotives with two new Tier 4, RP20BD genset switcher locomotives. This Tier 4 genset switcher is certified by U.S. EPA, however it has not yet received ARB locomotive emission verification.

The ARB approves the District's request that the grant agreement for this proposed project allow the grantee to commence work at the grantee's own risk prior to verification of this equipment with the following conditions:

- (1) The District shall structure the agreement to prevent the expenditure of any funds until after the locomotive is ARB locomotive emissions verified.

- (2) If the locomotives are not ultimately ARB locomotive emissions verified to meet Tier 4 standards, then the district must amend the contract and take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment as determined by the District in accordance with Carl Moyer Program Guidelines and authorizing statutes.

Note this approval is only to allow work to begin on this project prior to equipment ARB locomotive emissions verification; it does not constitute a comprehensive review of the project. It is the District's responsibility to verify that the project conforms to all applicable guidelines and statutes, including cost-effectiveness and co-funding limitations, and is surplus to existing emission control regulations.

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: January 22, 2015

Contact: Ken Bhatti (916)323-2730

Reference #2014-25

Request: Allow work to commence on project prior to U.S. EPA locomotive emissions certification and ARB locomotive emissions verification.

Air District: South Coast AQMD

Guidelines Section(s): 2011, Chapter 2 (General Criteria), Section AA; Chapter 3 (Program Administration), Section AA.4; Chapter 11 (Locomotives), Section D.1.(J) and Section D.2.(A).

ARB Action: Approved.

Determination: The proposed grant is to repower and upgrade 10, F59HI Tier 0+ to Tier 4 passenger locomotives. The proposed project includes the repower and upgrade of locomotives that are not yet U.S. EPA locomotive emissions certified and ARB locomotive emissions verified.

The ARB approves the District's request that the grant agreement for this proposed project allow the grantee to commence work at the grantee's own risk prior to emissions certification and verification of this equipment with the following conditions:

- (1) The District shall structure the agreement to prevent the expenditure of any funds until after the locomotives are U.S. EPA locomotive emissions certified and ARB locomotive emissions verified.
- (2) If the locomotives are not ultimately U.S. EPA locomotive emissions certified and ARB locomotive emissions verified to meet Tier 4 standards, then the district must amend the contract and take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment as determined by the District in accordance with Carl Moyer Program Guidelines and authorizing statutes.
- (3) If the locomotives are sold and released under a U.S. EPA issued experimental operating permit, payment may not be made until after subsequent U.S. EPA locomotive emissions certification and ARB locomotive emissions verification is completed. No payment of any kind is allowed prior to U.S. EPA locomotive emissions certification and ARB locomotive emissions verification, regardless of the allowance to commence work at the grantee's risk or the delivery and acceptance of the equipment by the grantee.

Note this approval is only to allow work to begin on this project prior to equipment U.S. EPA locomotive emissions certification and ARB locomotive emissions verification; it does not constitute a comprehensive review of the project. It is the District's responsibility to verify that the project conforms to all applicable guidelines and statutes, including cost-effectiveness and co-funding limitations, and is surplus to existing emission control regulations.

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: October 23, 2014

Contact: Adriana Smith (916)323-5450

Reference #2014-22

Request: Allow work to commence on project prior to ARB verification and U.S. EPA certification of locomotives.

Air District: South Coast AQMD

Guidelines Section(s): 2011, Chapter 2 (General Criteria), Section AA; Chapter 3 (Program Administration), Section AA.4; Chapter 11 (Locomotives), Section D.1.(J) and Section D.2.(A).

ARB Action: Approved.

Determination: The proposed grant is for up to 15 Tier 4 passenger locomotives at a cost of \$6.5M each located on Amtrak's San Diego and San Luis Obispo Corridor. The proposed project includes purchase of locomotives that are not yet certified and verified.

The ARB approves the District's request that the grant agreement for this proposed project, allow the grantee to commence work at the grantee's own risk prior to emissions certification and verification of this equipment with the following conditions:

- (1) The District shall structure the agreement to prevent the expenditure of any funds until after the locomotives are certified and verified.
- (2) If the locomotives are not ultimately certified and verified to meet Tier 4 standards, then the District must amend the contract and take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment determined by the District in accordance with Carl Moyer Program Guidelines and authorizing statutes.
- (3) If the locomotives are sold and released under a U.S. EPA issued experimental operating permit, payment may not be made until after subsequent certification and verification of the locomotives is completed by EPA and ARB, respectively. No payment of any kind is allowed prior to certification and verification, regardless of the allowance to commence work at the grantee's risk or the delivery and acceptance of the equipment by the grantee.

Note this approval is only to allow work to begin on this project prior to equipment certification and verification; it does not constitute a comprehensive review of the project. It is the District's responsibility to verify that the project conforms to all applicable guidelines and statutes, including cost-effectiveness and co-funding limitations, and is surplus to existing emission control regulations.

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Determination Date: September 26, 2014

Contact: Adriana Smith (916)323-5450

Reference #2014-21

Request: Allow use of Megawatt-hours instead of gallons as an alternative measure of locomotive usage for reporting purposes only. This allowance would apply to the six Union Pacific switcher locomotives (UPY894, UPY895, UPY896, UPY897, UPY898, UPY899) currently under contract and located at the Roseville Yard. Project #'s: VET-06-0255-A, VET-08-0059-A, and VET-05-0068-A

Air District: Sacramento Metropolitan AQMD

Guidelines Section(s): 2005, Chapter 8, Section V.A, page VIII-10, and 2008, Chapter 8, Section IV.(a)(4), page VIII-5

ARB Action: Approved.

Determination: Locomotive emission reductions were originally calculated based on fuel consumption (gallons). To validate the use of an alternative method, the grantee provided the air district with measurements of megawatt-hour and the equivalent fuel consumption readings executed simultaneously for various switcher locomotives over a specific period of time. This approach provided a mechanism to correlate how many average megawatt-hours were generated based on a specific amount of fuel consumed. The analysis indicated that the switchers in the Roseville Yard average usage is 149 gallons of diesel per one megawatt-hour of electricity generated (149 gallons/Megawatt-hour).

The methodology used by the grantee is reasonable for estimating fuel consumption based on megawatt-hours generated for these locomotives, in order to report usage per the contract requirement. However, it should be noted that, while fuel is consumed

during idle, there are no megawatt-hours generated during idling operations. As such, the analysis more accurately provides a conversion factor of 149 gallons/(Megawatt-hour plus Idle).

Determination Date: September 16, 2014

Contact: Adriana Smith (916) 323-5450

Reference #2013-10

Request: 1) Allow work to commence on project prior to certification or verification of locomotives and, 2) allow existing baseline locomotives to be retained for LNG demonstration project

Air District: South Coast AQMD

Guidelines Section(s): (2011) Chapter 2 (General Criteria), Section G, Section Z, Section AA and Section DD; Chapter 3 (Program Administration), Section BB.4; Chapter 11 (Locomotives), Section D.2.(A) and (B)

ARB Action: Approved.

Determination: Proposed grant is for up to \$52M in local AB 923 funds for up to 20 Tier 4 passenger locomotives at a cost of \$6,295,000 each

1)The proposed project includes purchase of locomotives that are not yet certified. Due to the nature of locomotive construction, manufacture, and emission testing procedures, practical considerations generally require at least one locomotive to be manufactured prior to certification or verification for emission testing purposes. The ARB approves the District's request that the grant agreement for this proposed project allow the applicant to commence work at the applicant's own risk prior to emissions certification or verification of this equipment with the following conditions:

- The District shall structure the agreement to prevent the expenditure of any funds until after the locomotives are certified or verified.

- If the locomotives are not ultimately certified or verified to meet Tier 4 standards, then the district must take appropriate action to ensure the project still meets all program goals and cost-effectiveness requirements. Mitigation measures may include a lower grant payment or no payment as determined by the District in accordance with Moyer Guidelines and authorizing statutes.
- In the event that US EPA elects to postpone the Tier 4 implementation date and these locomotives are certified to Tier 3 standards with FEL levels equivalent to Tier 4, payment cannot be made by the District for emission reductions to Tier 4 levels unless the ABT credits have been retired or their ownership has been transferred to the District; or the district may elect to pay a lower grant amount based on the actual standard of certification. As explained above, if the certification or verification emission levels are not equal to or lower than the levels used to determine eligibility and the contracted funding amount, the agreement must be amended to reflect any lower updated funding amounts and all program requirements, including limitations due to cost-effectiveness and co-funding must remain satisfied.
- If the locomotives are sold and released under an EPA issued experimental operating permit, payment may not be made until after subsequent verification or certification of the locomotives is completed by EPA or ARB. No payment of any kind is allowed prior to certification or verification, regardless of the allowance to commence work at the applicant's risk or the delivery and acceptance of the equipment by the grantee.

2) The proposed project also includes retention of up to five of the existing baseline locomotives for use in alternative fuel, including LNG, demonstration projects in the SCAQMD district. The grant agreement may allow these limited-term demonstration projects, but must include a reasonable and finite period of time for the demonstrations.

Please include this case-by-case reference number in the comment field for the project in the CARL database.

Note this approval is only to allow work to begin on this project prior to equipment certification and allow retention of baseline locomotives for alternative fuel demonstration projects; it does not constitute a comprehensive review of the project. It is the district's responsibility to verify that the project conforms to all applicable guidelines

and statutes, including cost-effectiveness and co-funding limitations, and is surplus to existing emission control regulations.

Determination Date: April 18, 2013

Contact: John Ellis (626) 350-6516

Reference #2012-43

Request: Allow funding of wayside power connections to replace the use of head end power (HEP) engines to supply hotel power for commuter trains during layovers (Project 14MOYL1).

Air District: Bay Area AQMD

Guidelines Section(s): (2011) Chapter 11, Sections A and D.6.

ARB Action: Approved.

Determination: Wayside power would enable potentially significant emission reductions by providing plug-in power and eliminating the use of the on-board HEPs while in the station during layover. As a surplus source of emission reductions, wayside power is eligible and remains subject to all other applicable sections of the guidelines, including cost-effectiveness.

Equipment eligible for funding includes; transformer (as required to modify the available grid voltage to the requirements of the train), and all equipment connected to the secondary side of the transformer (ex; switch gear, conduit, wire, wayside power cabinet, and cables required to connect to the train). Installation costs for eligible equipment are also eligible expenses, including labor, materials and professional design costs.

District staff should exercise caution and due diligence with respect to the project, grant agreement and activity monitoring/reporting since mutual cooperation is required by multiple entities (rail operator, station operator, etc.) in order to realize the emission benefits.

Please include this case-by-case reference number in the CARL comment field.

Determination Date: November 2, 2012

Contact: John Ellis (626) 350-6516

Reference #2011-45

Request: Allow funding of eight wayside power connections to replace the use of head-end power (HEP) engines to supply hotel power for commuter trains during layovers (Project VET-11-0177).

Air District: Sacramento Metropolitan AQMD

Guidelines Section(s): (2011) Chapter 11, Sections A and D.6.

ARB Action: Approved.

Determination: Wayside power would enable potentially significant emission reductions by providing plug-in power and eliminating the use of the on-board HEPs while in the station during layover. As a surplus source of emission reductions, wayside power is eligible and remains subject to all other applicable sections of the guidelines, including cost-effectiveness.

District staff should exercise caution and due diligence with respect to the project, grant agreement and activity monitoring/reporting because the project applicant does not operate or control the source of emission reductions.

Please include this case-by-case reference number in the CARL comment field.

Determination Date: October 26, 2011

Contact: John Ellis (626) 350-6516

Reference #2010-29

Request: Allow re-purposing of baseline Tier II locomotive engines from proposed PHL project in other Moyer projects within the state.

Air District: South Coast AQMD

Guidelines Section(s): (2008) Part III (Program Administration), Section 31

ARB Action: Approved.

Determination: The baseline engines are Tier II with substantial remaining useful life and relatively low emissions compared to the typical existing fleet of locomotive switch engines of similar power. Replacement of other existing uncontrolled engines in other applications at the ports or elsewhere in the state, instead of destroying the engines as required by the guidelines, could potentially double the emission reductions from the proposed project and significantly improve the overall cost-effectiveness. Leveraging

these emission reductions would yield a substantially more effective and responsible use of state funds. The District shall expend every reasonable effort to re-purpose the baseline engines elsewhere within the District or state in order to maximize the efficiency of state emission reduction incentive funds. Any additional emission reductions generated anywhere in the state by the repurposing of these engines may be used to calculate the total cost-effectiveness for the entire project and may, therefore, be used to allow additional funding for the project. Such calculations of additional cost-effectiveness must be approved by ARB staff.

Determination Date: October 1, 2010

Contact: John Ellis (626) 350-6516

Reference #2010-26

Request: Allow use of hours in grant agreement for project activity data for AESS Idle Limiting Device (ILD) on CALTRANS commuter locomotive. Project VET-07-0148.

Air District: Sacramento Metropolitan AQMD

Guidelines Section(s): (2005) Chapter 8, Section V, (A)

ARB Action: Approved.

Determination: Per the guidelines, ILD emission reductions are normally calculated based on the assumption that annual fuel consumption will be reduced by approximately 3%, in the absence of better data. Per the application, the annual fuel consumption of these locomotives is 327,000 gallons per year, and 3\$ fuel saved would be 9,810 gallons, which is 3,270 hours of idle reduced per year at 3 gallons per hour. However, the District used 1,426 hours per year in the agreement based on data provided by the applicant and derived from actual locomotive in-use data. The 1,426 hours included in the agreement is both more conservative than the standard methodology, and based on data measured directly from the equipment. Staff notes that fuel saved by the AESS is also available from the EMU, but hours is a more direct measurement of this type of activity.

Determination Date: September 23, 2010

Contact: John Ellis (626) 350-6516

Reference #2010-28

Request: Allow work to commence on project prior to certification of locomotive engines (locomotive remanufacture kit).

Air District: South Coast AQMD

Guidelines Section(s): (2008) Chapter 8, Section IV, (d);
Part III (Program Administration), Section 32.

ARB Action: Approved.

Determination: The proposed project includes use of locomotive engines that are not yet certified. Due to the nature of locomotive certification and the limited use of this particular engine in this particular application, practical considerations require at least one locomotive to be remanufactured prior to certification for emission testing purposes. The contractual agreement may allow the applicant to commence work at the applicant's own risk prior to EPA emissions certification of this equipment. The District shall structure the agreement to prevent the expenditure of any Moyer funds in the event that the engines are not certified for any reason and there shall be no payment of any kind prior to the engine manufacturer receiving EPA emissions certification for the engine in the installed configuration. If the certification emission levels are not equal to or lower than the levels used to determine eligibility and the contracted funding amount, the contract must be amended to reflect the lower updated funding amounts. No funding of any kind is allowed prior to certification, regardless of the allowance to commence work at the applicant's risk prior to EPA certification.

Determination Date: August 4, 2010

Contact: John Ellis (626) 350-6516

Reference #2010-25

Request: Allow use of alternative fuel consumption rate factor of 18 bhp-hr/gal for switch locomotive.

Air District: South Coast AQMD

Guidelines Section(s): (2008) Appendix B, Table B-25 (updated 3/10)

ARB Action: Approved.

Determination: The accepted fuel consumption rate factor for switch locomotives represents a blend of factors from a wide variety of locomotives used for switching nationwide. The District has provided BSFC and duty cycle data for the subject

locomotives that substantiates the use of a larger fuel consumption rate factor of 18 bhp-hr/gal.

Determination Date: August 4, 2010

Contact: John Ellis (626) 350-6516

(800) 242-4450 | helpline@arb.ca.gov

1001 I Street, Sacramento, CA 95814

P.O. Box 2815, Sacramento, CA 95812



Copyright © 2026 State of California