

**RULE 1632. PILOT CREDIT GENERATION PROGRAM FOR  
HOTELLING OPERATIONS**

(a) Purpose

The purpose of this rule is to provide opportunities to generate oxides of nitrogen (NO<sub>x</sub>) mobile source emission reduction credits (MSERCs) for use in RECLAIM through the voluntary use of electric power during hotelling operations.

(b) Applicability

(1) This rule applies to persons who voluntarily elect to generate NO<sub>x</sub> MSERCs, which may be used in RECLAIM pursuant to Rule 2008 – Mobile Source Credits, through the use of a fuel cell technology in lieu of diesel-fueled auxiliary engines to provide electricity for marine vessel hotelling operations.

(2) This rule does not apply to any:

(A) Emission reductions produced by monies from any public air quality related funding program including but not limited to Rule 2202, the Carl Moyer Memorial Air Quality Standards Attainment Program, or AB2766 funding; or

(B) Emission reductions required pursuant to any law, rule, or regulation, or legal instrument such as a legal settlement or consent decree.

(c) Definitions

(1) **ACTIVITY LEVEL (AL)** means for the purpose of this rule, the power in kilowatt hours, excluding all other power used for non-hotelling operations, delivered to each marine vessel for hotelling operations per quarter for retrospective credit issuance and per year for prospective credit issuance.

(2) **APPLICATION** means for the purpose of this rule, the Rule 1632 MSERC Application as specified in subdivision (e).

(3) **AUXILIARY ENGINE** means for the purpose of this rule, the marine diesel-fueled internal combustion engine onboard a marine vessel that is not used for propulsion of the marine vessel.

- (4) BASELINE EMISSION FACTOR ( $EF_{\text{base}}$ ) means for the purpose of this rule, the emission factor used to quantify annual emissions from auxiliary diesel-fueled engines of the marine vessel that would be emitted if the fuel cell technology was not used during hotelling operations.
- (5) CREDIT GENERATION PERIOD means for the purpose of this rule, the timeframe that MSERCs are being generated and begins on the date that the requirements of subdivision (d) are met and ends when the evaluation performed under subdivision (g) indicates that the credits generated under this rule are no longer surplus. The first segment of the credit generation period, which may be 3 months or less, is referred to as the “initial credit generation period” and each 3-month segment thereafter that begins on a calendar quarter is referred to as the “quarterly credit generation period.” The “first two-year annual credit generation periods” is the first eight full quarterly credit generation periods.
- (6) CREDIT ISSUANCE PERIOD means the timeframe for which MSERCs are issued and begins on the date that the requirements of subdivision (h) are met.
- (7) DIESEL FUEL means any fuel that meets the specifications in ASTM D2069, Standard Specification for Marine Fuels, or is graded as DMX, DMA, DMD, DMC, IFO 180 (including RME-25 or RMF-25), IFO 380 (including RMG-25 and RMH-25), and RMA-RML (including RMG-35 and RMH-35 and RML-55).
- (8) DISTRICT means the geographical area defined by Rule 103 – Definition of Geographical Area.
- (9) DISTRICT WATERS means the overwater boundaries extending out 25 miles perpendicular from the northernmost coastal intersection point of Los Angeles County and southernmost coastal intersection point of Orange County.
- (10) EVALUATION YEAR means for the purpose of this rule, 2010 which represents the initial evaluation year and subsequent years thereafter as determined pursuant to paragraph (g)(3) during which the District, CARB, and EPA will assess whether MSERCs may continue to be generated or if a portion or all future MSERCs need to be discontinued or discounted to ensure credits remain surplus.

- (11) FUEL CELL TECHNOLOGY means a technology to generate electricity by combining positive hydrogen ions or negative hydrogen electrons, drawn from a hydrogen-containing fuel, with oxygen atoms.
- (12) FUEL CELL SUBSTATION means a platform on district water or on land within the district boundaries that has one or more fuel cells capable of producing electrical power in alternating or direct current at different frequencies for hotelling operations.
- (13) FUEL CELL SUBSTATION OPERATOR means the operator of the fuel cell substation that has the rights through agreement or contract to provide electric energy from the substation to a marine vessel for hotelling operations.
- (14) GLOBAL POSITIONING SYSTEM OR GPS means a satellite-based radio navigation receiver capable of providing the time, the date, and position of a unit.
- (15) HOTELLING OPERATION OR HOTELLING means those operations on a marine vessel that require electric energy to power operations that include, but are not limited to, lights, ventilation, heating, cooling, and loading and unloading operation that are used when a marine vessel is either at anchorage within the district waters or docked or anchored in a harbor or a port that is located within the district.
- (16) MARINE VESSEL means for the purpose of this rule cargo ships including auto carrier, bulk carrier, container, reefer, roll-on/roll-off, and general cargo, passenger ships, and tanker ships having propulsion engines with a specific engine displacement of equal to or greater than 30 liters per cylinder.
- (17) MOBILE SOURCE EMISSION REDUCTION CREDIT (MSERC) means for the purpose of this rule, emission reduction credits that meet the requirements of this rule and are issued as specified in subdivision (h).
- (18) PROSPECTIVE CREDIT ISSUANCE OR PROSPECTIVELY means that MSERCs will be issued annually prior to generating credits.
- (19) QUARTER OR QUARTERLY is any three-month period from January 1 to March 31, April 1 to June 30, July 1 to September 30, or October 1 to December 31, inclusive.
- (20) RECLAIM FACILITY means any stationary source subject to Regulation XX, pursuant to Rule 2001 - Applicability.

- (21) RETROSPECTIVE CREDIT ISSUANCE OR RETROSPECTIVELY means that MSERCs will be issued quarterly following submittal of the actual activity level specified in paragraph (i)(1) and the quarterly validation has been completed pursuant to subdivision (k).
- (22) SURPLUS means that emission reductions achieved throughout the duration of the emission reduction activity that are not required or relied upon by any local, state, or federal rule, or regulation, and the federal Clean Air Act; and are not required or relied upon in an attainment demonstration, reasonable further progress demonstration, or emissions inventory thereby ensuring that there is no double counting of emission reductions.

(d) Credit Generator Requirements

Any person who elects to generate MSERCs under this rule shall meet all of the following requirements:

- (1) Use a fuel cell substation in lieu of auxiliary engines to provide electric energy to a marine vessel for hotelling operations;
- (2) Demonstrate that the fuel cell substation is equipped with a non-resettable data recorder capable of measuring and recording the electric power in kilowatt hours (kW-hr) delivered to each marine vessel during hotelling operations;
- (3) Demonstrate that the fuel cell substation and marine vessel are equipped with GPS that is capable of monitoring and recording that the marine vessel is located adjacent to the fuel cell substation during periods when the fuel cell substation is supplying electric power to the marine vessel for hotelling operations or alternatively use a method as approved by the District, ARB, and EPA that will demonstrate that the fuel cell substation supplied electric power to the marine vessel for hotelling operations;
- (4) Demonstrate that the purchase contract for acquisition of fuel cells and any other components associated with the fuel cell substation is signed no earlier than March 1, 2001 and installed no later than January 1, 2005;
- (5) Demonstrate that the fuel cell substation operator has an agreement or contract to provide electric energy from the fuel cell substation to a marine vessel during hotelling operations;
- (6) Demonstrate that the fuel cell substation is located within the district waters or district boundaries when on land;

- (7) Submit an Application as specified in subdivision (e); and
  - (8) Demonstrate compliance with the monitoring, recordkeeping, and reporting requirements specified in subdivision (i).
- (e) Application
- (1) Any person who elects to generate MSERCs under this rule shall submit an Application to the District no later than 30 days after receiving a certificate of inspection from the Coast Guard for the fuel cell substation and before January 1, 2004. The Application shall include the following:
    - (A) A description of the fuel cell substation information, including, at a minimum, location of fuel cell substation when not in service, type of fuel cell, fuel cell manufacturer name, rated power capacity in kilowatt (kW), and fuel cell identification number if available;
    - (B) The projected initial service date when the fuel cell substation will be used for hotelling operations for a marine vessel that would represent the beginning of the credit generation period; and
    - (C) Identification of the intended user(s) of the MSERCs, if available;
  - (2) If the initial service date, as specified in subparagraph (e)(1)(B), of the fuel cell is before the Application is approved, the Application shall include the following additional information:
    - (A) Proof of purchase and acquisition of the fuel cell substation;
    - (B) A written certification that the operator of the fuel cell has a lease or ownership of a terminal for docking, refueling, and service of the fuel cell substation at the harbor for which the service is provided; and
    - (C) Proof that the fuel cell substation operator has a written agreement from a marine vessel operator stating a willingness to use electric energy from the fuel cell substation to the marine vessel during hotelling operations.
  - (3) If the initial service date, as specified in subparagraph (e)(1)(B), of the fuel cell substation is after the Application is approved, the credit generator shall provide information specified under subparagraph (e)(2)(A) through (e)(2)(C) prior to credit issuance pursuant to paragraph (h)(1).

- (4) The Application shall be deemed a plan, and plan fees shall be assessed in accordance with Rule 309 – Fees For Regulation XVI.
- (5) The Executive Officer shall approve or disapprove the Application, and any subsequent revisions submitted pursuant to paragraph (e)(6), in writing within 90 days of submittal of a complete Application or Application revision.
- (6) Any person that submits an Application may amend the Application to:
  - (A) revise information provided under subparagraphs (e)(1)(A) through (e)(1)(C) at any time;
  - (B) include information required under subparagraphs (h)(4)(A) and (h)(4)(B) if the credit generator elects to have MSERCs issued prospectively; or
  - (C) revise the activity levels specified in subparagraph (h)(4)(B) no later than 180 days after the beginning eligibility credit issuance date pursuant to subparagraph (h)(2)(C).
- (7) The credit generation period shall begin no earlier than the date the Application is received by the district.

(f) **MSERC Quantification**

- (1) MSERCs that are created from marine vessels using power generated by a fuel cell substation during hotelling operation shall be quantified using the following equation:

$$\text{MSERC} = [(\text{EF}_{\text{base}} - \text{EF}_{\text{opt}}) / 454] \times \text{AL}$$

Where:

MSERC = Mobile source emission reduction credit (pounds of NO<sub>x</sub>)

EF<sub>base</sub> = Baseline emission factor (gram/kW-hr)

EF<sub>opt</sub> = Optional emission factor of fuel cell (gram/kW-hr)

AL = Activity level (kW-hr)

454 = Conversion factor from grams to pounds

- (2) For auxiliary engines with a model year that is earlier than the applicable model year specified in Table 1, the NO<sub>x</sub> baseline emission factor used for hotelling operations shall be based on EPA’s Final Regulatory Impact Analysis: Control of Emissions from Marine Diesel Engines – November 1999 and shall be:

- (A) 10 gram/kW-hr, for engines with a maximum rated capacity of less than 1000 kW; or
  - (B) 13 gram/kW-hr, for engines with a maximum rated capacity of greater than or equal 1000 kW.
- (3) Notwithstanding paragraph (f)(2), for those auxiliary engine(s) on a marine vessel operated under a United States flag the NO<sub>x</sub> baseline emission factor shall be the NO<sub>x</sub> emission standard for marine engine(s) specified in Table 1 - NO<sub>x</sub> Emission Standards for Engines with a Post-2004 Model Year:
- (A) for the applicable auxiliary engine size with a model year on or after the model year specified in Table 1; or
  - (B) for the applicable auxiliary engine size for any engine model(s) that an engine manufacturer has included in the Certification, Averaging, Banking, and Trading Provisions specified in 40 CFR Part 94, Subpart D.
- (4) For marine vessels that use a combination of different size auxiliary engines for hotelling operations, a weighted average NO<sub>x</sub> baseline emission factor shall be used. A weighted average emission factor should be estimated using:

$$EF_{\text{base}} = \sum_{i=1}^n (kW_i / (kW_t)) \times EF_i$$

Where

- kW<sub>i</sub> = The maximum rated capacity of each auxiliary engine
- kW<sub>t</sub> = The sum of all the auxiliary engines maximum rated capacity
- EF<sub>i</sub> = The baseline emission factor for each engine as specified in paragraphs (f)(2) or (f)(3)

- (4) The NO<sub>x</sub> optional emission factor for the fuel cell shall be equal to zero unless otherwise specified through further evaluation by the Executive Officer, CARB, and EPA.
- (5) The actual activity level used to quantify the MSERCs shall be based on the information submitted pursuant to subdivision (i) and either the quarterly validation if credits are issued retrospectively or twelve-month reconciliation if credits are issued prospectively pursuant to subdivision (k).

- (g) Source Category Evaluation
  - (1) On or before July 1, 2010, the Executive Officer with CARB and EPA shall complete an evaluation on marine vessels hotelling operations and agree whether future MSERCs need to be either discontinued or further discounted to ensure credits remain surplus.
  - (2) The evaluation shall include, but is not limited to, an assessment of current and future local, state, and federal rules and regulations affecting each source category.
  - (3) After the initial evaluation year, the evaluation performed in paragraph (g)(1) shall be completed on a timeframe as agreed to by the District, CARB, and EPA, but not more than once per year.
  - (4) Subsequent evaluations performed pursuant to paragraph (g)(3) shall be completed at least six months prior to end of each evaluation period specified in paragraph (g)(3), for the remainder of the pilot program.
  - (5) No future MSERCs shall be issued if the evaluation is not completed or the District, CARB and EPA do not agree on whether future MSERCs need to be discontinued or the amount that the MSERCs need to be discounted.
  
- (h) Credit Issuance
  - (1) The Executive Officer shall issue MSERCs provided:
    - (A) the Application has been approved by the Executive Officer;
    - (B) the credit generator has submitted the information specified in subparagraphs (e)(2)(A) through (e)(2)(C);
    - (C) the credit generator has submitted records and reports pursuant to subdivision(i); and
    - (D) the Executive Officer has completed the quarterly validation of the activity level pursuant to subdivision (k) if the MSERCs are issued retrospectively pursuant to paragraph (h)(3).
  - (2) The Executive Officer shall issue MSERCs:
    - (A) to the fuel cell operator that meets the applicability requirements specified under subdivision (b) and requirements pursuant to subdivision (d);
    - (B) retrospectively through the first two-year annual credit generation periods pursuant to paragraph (h)(3);



- (C) either retrospectively for subsequent quarters following the end of the first two-year annual credit generation periods pursuant to paragraph (h)(3) or prospectively for subsequent annual credit generation periods following the end of the first two-year annual credit generation periods pursuant to paragraph (h)(4); and
  - (D) designated with a beginning and ending date based on the date of credit issuance.
- (3) The Executive Officer shall issue MSERCs retrospectively in quarterly increments, in pounds of NO<sub>x</sub>:
- (A) for each quarter through the end of the first two-year annual credit generation periods;
  - (B) for subsequent quarterly credit generation periods following the end of the first two-year annual credit generation periods if the credit generator elects to continue retrospective credit issuance and has not submitted a written request to the Executive Officer pursuant to subparagraph (h)(4)(A) to issue MSERCs prospectively;
  - (C) for any quarterly generation period between the end of the first two-year annual credit generation periods and the next annual credit generation period that coincides with either the RECLAIM Compliance Cycle 1 or 2 as designated by the credit generator pursuant to paragraph (h)(7) if the credit generator elects to have MSERCs issued prospectively; and
  - (D) after the Executive Officer completes the quarterly validation pursuant to subdivision (k) and within 30 days after the submittal of the actual activity level pursuant to paragraph (i)(4).
- (4) The Executive Officer may issue MSERCs prospectively in annual increments, in pounds of NO<sub>x</sub>:
- (A) following the end of the first two-year annual credit generation periods and each annual credit generation period thereafter for a period not to exceed five years, provided the credit generator submits a written request to amend their application for prospective credit issuance and designation of the RECLAIM Compliance Cycle for each annual credit generation period to the Executive Officer within 30 days after the end of the first two-year annual credit generation periods;

- (B) in an amount based on an activity level as specified by the credit generator that is included in an amendment to their application, that shall not exceed 120% of the annual average activity level that was reported and validated through the first two-year annual credit generation periods; and
  - (C) beginning on either a RECLAIM Cycle 1 or 2, as designated by the credit generator pursuant to subparagraph (h)(4)(A).
- (5) The Executive Officer shall discount MSERCs upon issuance by:
  - (A) 10% which will be retired for the benefit of the environment for MSERCs issued prior to January 1, 2010; and
  - (B) an additional 10% after January 1, 2010 which will be retired for the benefit of the environment unless through the evaluation performed pursuant to subdivision (g), the District, CARB, and EPA determine that NO<sub>x</sub> emission reductions from marine vessel hotelling operations pursuant to this rule are not required or relied upon in the most recently approved SIP.
- (6) Only NO<sub>x</sub> emission reductions generated pursuant to this rule will be issued as MSERCs.
- (7) Notwithstanding Rule 2008 – Mobile Source Credits, for MSERCs issued retrospectively pursuant to paragraph (h)(3), MSERCs converted to RTCs shall be issued for the RECLAIM Compliance Cycle 1 or 2 that the credit generator selects provided the initial or quarterly credit generation period and subsequent quarterly credit generation periods coincide with the entire RECLAIM Compliance cycle plus the reconciliation period of that cycle.
- (8) Notwithstanding Rule 2008 – Mobile Source Credits, for MSERCs issued prospectively pursuant to paragraph (h)(4), MSERCs converted to RTCs shall be issued for either RECLAIM Compliance Cycle 1 or 2 provided that each annual credit generation period coincides with the entire cycle selected. If the initial credit generation period begins prior to the start of a complete RECLAIM Compliance Cycle, that portion of MSERCs converted to RTCs shall be issued for the current or previous cycle provided that this initial credit generation period completely coincides with the cycle selected.
- (9) Any MSERCs not used by the specified expiration date shall be retired to benefit the environment and be ineligible for transfer or use.

- (i) Monitoring, Recordkeeping, and Reporting
  - (1) For each fuel cell substation, the credit generator shall monitor and maintain quarterly records of the kilowatt-hours used for each marine vessel that uses the fuel cell substation for hotelling for the initial and each subsequent quarterly credit generation periods using a non-resettable data recorder capable of measuring and recording the electric power in kilowatt hours (kW-hr) delivered to each marine vessel during hotelling operations.
  - (2) For each marine vessel that uses the fuel cell substation for hotelling, the credit generator shall maintain records per each fuel cell substation for the initial and each subsequent quarterly credit generation period of:
    - (A) the marine vessel name, owner or ship captain, vessel type, model, model year built, and identification number;
    - (B) a description of and the number of auxiliary engines, each auxiliary engine's maximum rated capacity (kW) and the ASTM specification of the fuel type; and
    - (C) the location of the marine vessel, the time and date using a GPS device or the daily log provided by the Marine Exchange.
  - (3) For each fuel cell substation, the credit generator shall maintain records for the initial and each subsequent quarterly credit generation period of:
    - (A) the location where the fuel cell substation is docked when not in service;
    - (B) the manufacturer name, type, rated power capacity (kW), and fuel cell identification number if available; and
    - (C) the service date and fuel cell start and finish time when the fuel cell substation is used to provide electrical power to a marine vessel for hotelling.
    - (D) the location of the fuel cell substation, the time and date using a GPS device when in service.
  - (4) Within 30 days after the end of the initial and each subsequent quarterly credit generation period if credits are issued retrospectively, and within 30 days after the end of each twelve-month credit generation period if credits are issued prospectively, the credit generator shall submit the activity level specified in paragraphs (i)(1) through (i)(3).

- (5) Notwithstanding paragraph (i)(4), if the initial credit generation period begins prior to a quarter and is two months or less, the credit generator shall submit the information specified in paragraphs (i)(1) through (i)(3) within 30 days after the end of the first quarterly credit generation period. For an initial credit generation period that is greater than two months, the credit generator shall submit the information specified in paragraphs (i)(1) through (i)(3) within 30 days after the end of the initial credit generation period.
  - (6) The credit generator shall maintain all data required to be gathered, computed, or reported pursuant to this rule for three years after each quarterly or annual report is submitted to the District.
- (j) **Credit Use**  
MSERCs generated under this rule may be used as RTCs under the provisions of Regulation XX – Regional Clean Air Incentive Market (RECLAIM).
- (k) **Quarterly Validation and Reconciliation**
- (1) For MSERCs issued retrospectively pursuant to paragraph (h)(3), the reported activity level submitted pursuant to paragraphs (i)(4) and (i)(5) shall be reviewed by the Executive Officer upon submittal to validate the activity level. If the review indicates that the activity level reported is not consistent with records submitted pursuant to paragraphs (i)(1) through (i)(3), the Executive Officer shall appropriately adjust the activity level reported.
  - (2) The Executive Officer shall validate the activity level reported based on the analysis specified under paragraphs (k)(1) within 30 days after the reported activity level is submitted pursuant to paragraphs (i)(4) and (i)(5) for MSERCs issued retrospectively pursuant to paragraph (h)(3).
  - (3) For MSERCs issued prospectively pursuant to paragraph (h)(4), the actual activity level submitted pursuant to paragraph (i)(4) shall be reviewed upon submittal to evaluate if any shortfall exists between the actual activity level and activity level specified by the credit generator pursuant to subparagraph (h)(4)(B).
  - (4) If a shortfall exists between the actual and projected activity levels, the credit generator and user are subject to the penalty provisions specified under subdivision (l).

- (5) If the actual activity level exceeded the activity level specified by the credit generator pursuant to subparagraph (h)(4)(B), then the Executive Officer shall after performing the evaluation required by paragraph (k)(3) issue additional MSERCs equal to the amount of the increase and pursuant to subdivision (h) for use in the current RECLAIM Compliance Cycle that ends no later than six months from the last day of the credit generation period of which the increase in activity level occurred.
- (1) Penalties
    - (1) If a shortfall exists pursuant to paragraph (k)(3), credits equal to 110 percent of the shortfall shall be obtained and surrendered to the Executive Officer such that the applicant shall retire NO<sub>x</sub> MSERCs generated under the same or different Application or RTCs that are approved and designated for use within the same RECLAIM cycle or if not available, from the next RECLAIM cycle.
    - (2) Any person submitting an Application who falsifies information in the Application or fails to implement any provision of the Application, shall be subject to the penalties specified in the Health and Safety Code for violation of District rules and shall be grounds for the Executive Officer to take one or more of the following actions:
      - (A) disapprove the Application and void all previously issued MSERCs, and those already converted to RTCs, that have not yet expired;
      - (B) designate the applicant to be ineligible to generate MSERCs; or
      - (C) assess the penalty specified in paragraph (l)(1).
    - (3) Any person who uses MSERCs converted into RTCs generated under this rule at a RECLAIM facility where previously issued MSERCs, and those already converted to RTCs, that have not yet expired are voided, shall be subject to the provisions specified in Rule 2010 – Administrative Remedies and Sanctions for RECLAIM rule violations. If there are multiple credit holders or users of credits generated under the same Application, each holder or user shall retire MSERCs or RTCs according to their prorated share of credits purchased.

(m) Program Review

- (1) On or before April 2003 and biannually thereafter, up until credits are discontinued according to the source category evaluation performed pursuant to subdivision (g), the Executive Officer shall complete a review and present a report to the Governing Board that includes but not be limited to the following information:
  - (A) General description of projects participating in the pilot program and the amount of NO<sub>x</sub> MSERCs, including the amount converted to RTCs, generated under the pilot program;
  - (B) The location of the credit generation projects and facilities using RTCs under this pilot program;
  - (C) The amount of NO<sub>x</sub> MSERCs retired to benefit the environment; and
  - (D) The amount of concurrent non-NO<sub>x</sub> emission reductions such as PM and toxic air contaminants, generated under the pilot program that have been retired to benefit the environment.
- (2) The Governing Board may suspend approval of pending Applications and receipt of additional Applications through a noticed public hearing.

**Table 1**  
**NO<sub>x</sub> Emission Standards for Engines with a Post-2004 Model Year**

<b>Starting Date</b>	<b>Displacement (liters/cylinder)</b>	<b>NO<sub>x</sub><sup>1</sup> (g/kW-hr)</b>	<b>NO<sub>x</sub><sup>1</sup> (g/bhp-hr)</b>
Power ≥ 37 kW			
2005	Displacement < 0.9	7.3	5.4
2004	0.9 ≤ Displacement < 2.5	7.0	5.2
2007	2.5 ≤ Displacement < 5.0	7.0	5.2
2007	5.0 ≤ Displacement < 15	7.7	5.7
2007	15 ≤ Displacement < 20	8.6	6.4
Power ≥ 3300 kW			
2007	15 ≤ Displacement < 25	9.6	7.2
2007	25 ≤ Displacement < 30	10.8	8.1

1. Emission Standards in Table 1 represent NO<sub>x</sub> portion only of a combined NO<sub>x</sub> + THC standard based on 40CFR Part 94.8 – Control of Emissions of Air Pollution from New Marine Compression – Ignition Engines at or Above 37 kW