PERMIT TO CONSTRUCT EVALUATION

Applicant's Name	U.S. GOVT., DEPT. OF NAVY
Company ID	800263
Mailing Address	937 N. HARBOR DR., BOX 81, ROOM S510, SAN DIEGO, CA 92132
Equipment Address	NALF, SAN CLEMENTE ISLAND, SAN CLEMENTE, CA 91235

EQUIPMENT DESCRIPTION:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 2: PUBLIC WORKS CENTER, SAN CLEMENTE ISALND (ID NO. 66802) SYSTEM 1: NON-EMERGENCY IC ENGINES					
INTERNAL COMBUSTION ENGINE, NON-EMERGENCY, GENERAL MOTORS, MODEL NO. 12-645-E1, SERIAL NO. 67-M1-1003, DIESEL-FUELED, 1200 BHP, DRIVING A GENERATOR. A/N ~~132701~~ 547219	D17	C230		CO: 23 PPMV (8) [40CFR 63 Subpart ZZZZ, 3-9-2011]; PM: (9) [RULE 404, 2-7-1986]	B61.2, D29.1, D323.1, E448.1, H23.10, K67.1
CO OXIDATION CATALYST, MIRATECH CORP., V-CAT, WITH 12 MODULES, EACH WIDTH: 1 FT 0 IN; HEIGHT: 0 FT 3.1 IN; LENGTH: 1 FT 1.4 IN, 3.5 FT3 OF TOTAL VOLUME A/N 547219	C230				A72.2, C6.1, D12.2
INTERNAL COMBUSTION ENGINE, NON-EMERGENCY,	D18	C231		CO: 23 PPMV (8) [40CFR 63 Subpart ZZZZ, 3-9-2011];	B61.2, D29.1, D323.1,

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 2: PUBLIC WORKS CENTER, SAN CLEMENTE ISALND (ID NO. 66802) SYSTEM 1: NON-EMERGENCY IC ENGINES					
GENERAL MOTORS, MODEL NO. 8-567-CR, SERIAL NO. 59-B-28, DIESEL-FUELED 720 BHP, DRIVING A GENERATOR. A/N ~~132702~~ 547220				PM: (9) [RULE 404, 2-7-1986]	E448.1, H23.10, K67.1
CO OXIDATION CATALYST, MIRATECH CORP., V-CAT, WITH 8 MODULES, EACH WIDTH: 1 FT 0 IN; HEIGHT: 0 FT 3.1 IN; LENGTH: 1 FT 1.4 IN, 2.3 FT3 OF TOTAL VOLUME A/N 547220	C231				A72.2, C6.1, D12.2
INTERNAL COMBUSTION ENGINE, NON-EMERGENCY, GENERAL MOTORS, MODEL NO. 8-567-CR, SERIAL NO. 59-B-24 DIESEL-FUELED 720 BHP, DRIVING A GENERATOR. A/N ~~132703~~ 547221	D19	C232		CO: 23 PPMV (8) [40CFR 63 Subpart ZZZZ, 3-9-2011]; PM: (9) [RULE 404, 2-7-1986]	A72.1, B61.2, D29.1, D323.1, E448.1, H23.10, K67.1
CO OXIDATION CATALYST, MIRATECH CORP., V-CAT, WITH 8 MODULES, EACH WIDTH: 1 FT 0 IN; HEIGHT: 0 FT 3.1 IN; LENGTH: 1 FT 1.4 IN, 2.3 FT3 OF TOTAL VOLUME A/N 547221	C232				A72.2, C6.1, D12.2

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 2: PUBLIC WORKS CENTER, SAN CLEMENTE ISALND (ID NO. 66802) SYSTEM 1: NON-EMERGENCY IC ENGINES					
INTERNAL COMBUSTION ENGINE, NON-EMERGENCY, GENERAL MOTORS, MODEL NO. 12-645-E4, SERIAL NO. 67-L1-1129, DIESEL-FUELED, 1440 BHP, DRIVING A GENERATOR. A/N ~~132704~~ 547222	D20	C233		CO: 23 PPMV (8) [40CFR 63 Subpart ZZZZ, 3-9-2011]; PM: (9) [RULE 404, 2-7-1986]	A72.1, B61.2, D29.1, D323.1, E448.1, H23.10, K67.1
CO OXIDATION CATALYST, MIRATECH CORP., V-CAT, WITH 12 MODULES, EACH WIDTH: 1 FT 0 IN; HEIGHT: 0 FT 3.1 IN; LENGTH: 1 FT 1.4 IN, 3.5 FT3 OF TOTAL VOLUME A/N 547222	C233				A72.2, C6.1, D12.2

A/N 547227

TITLE V PERMIT REVISION, DE MINIMIS SIGNIFICANT

BACKGROUND:

US Navy, on San Clemente Island conducts training exercises for various military operations. This is an existing facility on San Clemente Island. This facility has permits to operate for diesel fired emergency engines, boilers (less than 1 MM Btu/hr each), JP-5 fuel storage tanks, Gasoline Storage tanks used for fuel dispensing, non-emergency engines, an abrasive blasting system, and a sewage treatment plant. This is a Title V facility and currently operates under a Title V renwal permit that was issued on August 29, 2012.

The facility has been subject to both self-reporting requirements and AQMD inspections. The facility has had no citizen complaints filed, or Notices to Comply issued in the last two years. However, the facility was issued a Notice of Violation on 9/21/2011, for failing to conduct the 2010 and 2011 annual re-verification tests for the gasoline fueling system as required by Rule 461. The

facility has since complied with the requirements and is currently operating in compliance with all applicable rules and permit conditions.

The 4 diesel-fueled engines under device nos. D17-D20 are used to supply power to the island. The engines were installed in 1950s-70s. As part of federal NESHAP compliance with 40CFR, Part 63, Subpart ZZZZ, these engines are being modified to install an oxidation catalyst to reduce toxic emissions, CO, VOC, and PM emissions from the engines. The CFR requires compliance by May 2, 2013. However, the Navy has requested an extension of compliance schedule from the EPA until September 2013 (Refer to attached letter) which was approved on March 11, 2013. The extension from EPA is valid until Decmeber 31, 2013 (Refer to attached approval letter).

PROCESS DESCRIPTION:

The 4 engines supply utility power to the island. The facility is proposing to install oxidation catalysts on each engine to reduce toxic, CO, VOC, and PM emissions. The applicant opted to comply with the NESHAP by reducing the CO emissions by 70% from the baseline as mandated by 40 CFR, Part 63, Subpart ZZZZ for existing engines (Engines installed prior to June 12, 2006) located at an Area Source of Hazardous Air Pollutants. The engines are operated 24 hrs/day, 7 days/week, 52 weeks/yr.

The oxidation catalyst is manufactured by Miratech Corp. and consists of elements which are composed of a substrate coated with a high surface are alumina based material and a combination of catalytically active Platinum, Group Metals. The catalyst is designed to replace existing engine exhaust manifolds to utilize for highest possible exhaust temperatures for maximum emissios reduction efficiencies.

The catalyst manufacuter has guaranteed that it will reduce the CO emissions by a minimum of 70% from the engine emission baseline. In addition, they have also guaranteed PM emissions reduction of 30% and VOC emissions reduction of 50%. However, since the applicant is not proposing to test the catalyst for effectiveness in reducing VOC and PM emissions, these reductions will be used for emissions calculations, but will not be used for data entry purposes in NSR.

EMISSIONS AND ANALYSIS:

Oxidization Catalyst Efficiency CO = 70%
VOC = 50%
PM = 30%
Operating hours: 24 hrs/day, 7 days/wk, 52 wks/yr
Fuel usage = 0.05 gal/bhp-hr
SOx EF based on 15 PPM sulfur

Device D17- 1200 BHP, Fuel usage- 60 gal/hr

	EF- AQMD Form B-1 lb/1000 gal	lb/hr (R1)	lb/day (R1)	lb/hr (R2)	lb/day (R2)	30-dy ave (R2)	lb/yr (R2)
RHC	37.5	2.25	54	1.13	27	27	9,828

	EF- AQMD Form B-1 lb/1000 gal	lb/hr (R1)	lb/day (R1)	lb/hr (R2)	lb/day (R2)	30-dy ave (R2)	lb/yr (R2)
NO_X	469	28.14	675	28.14	675	675	245,831
SO_X	0.213	0.013	0.3	0.013	0.3	0.3	114
CO	102	6.12	147	1.84	44	44	16,039
$PM=PM_{10}$	33.5	2.01	48	1.41	34	34	12,292

Device D18-D19, 720 BHP, Fuel usage- 36 gal/hr

	EF- AQMD Form B-1 lb/1000 gal	lb/hr	lb/day	lb/hr (R2)	lb/day (R2)	30-dy ave (R2)	lb/yr (R2)
RHC	37.5	1.35	32	0.68	16	16	5,897
NO_X	469	16.88	405	16.88	405	405	147,464
SO_X	0.213[@]	0.007	0.18	0.007	0.18	0.18	66
CO	102	3.67	88	1.1	26	26	9,618
$PM=PM_{10}$	33.5	1.21	29	0.85	20	20	7,399

Device D20- 1440 BHP, Fuel usage- 72 gal/hr

	EF- AQMD Form B-1 lb/1000 gal	lb/hr	lb/day	lb/hr (R2)	lb/day (R2)	30-dy ave (R2)	lb/yr (R2)
RHC	37.5	2.7	65	1.35	32	32	11,794
NO_X	469	33.77	810	33.77	810	810	294,840
SO_X	0.213[@]	0.02	0.4	0.02	0.4	0.4	146
CO	102	7.34	176	2.2	52	52	19239
$PM=PM_{10}$	33.5	2.41	58	1.68	40	40	14,717

Total Emissions Decrease from the Proposed Modification (Lb/day) from 4 engines:

	Pre-Modification	Post-Modification	Difference	Emission Increase/Decrease
RHC	183	91	-92	Decrease
NO_X	2295	2295	0	No Change
SO_X	1.06	1.06	0	No Change
CO	499	148	-351	Decrease
$PM=PM_{10}$	164	114	-50	Decrease

Toxic Emissions:

Although numerous HAP may be emitted from CI RICE, a few HAP account for over 90% of the total mass of HAP emissions emitted. These HAP are formaldehyde (72%), acetaldehyde (8%), acrolein (7%), methanol (3%), and benzene (3%). The installation of the oxidization catalyst will reduce the HAP emissions from the engine. Since the applicant decided to comply with the CO limit, testing of the oxidization catalyst for HAP emissions reduction will not be conducted. An estimate of HAP emission reductions will not be calculated for each HAP.

RULES:

Rule 212(c)(1): This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. Since there are no schools within 1,000 feet of the facility, a public notice will not be required per this section.

Rule 212(c)(2) & (g): These sections require a public notice for all new or modified facilities which have on-site emission increases for the equipment or the facility exceeding any of the daily maximums as specified in subdivision (g). Since there is no emission increase associated with the proposed project, public notice will not be required by this section.

Rule 212(c) (3): There will be a reduction in TAC emissions due to the installation of the oxidization catalyst on the engines. Therefore, a public notice will not be required per this section.

Rule 401 The installation of the oxidization catalyst is expected to reduce PM emissions by approximately 30%. With proper operation of this equipment, visible emissions from the engines are not likely to violate requirements of this rule.

Rule 402 The installation of the oxidization catalyst is expected to reduce HAP's, CO, VOC, and PM emissions. With proper operation and maintenance of the equipment, nuisance is not expected.

Rule 404: Based on 6.2 cfm/HP

App. No.	Exhaust Flow Rate	Gr/dscf(30% Reduction with Oxi catalyst)	Rule 404 Compliance (allowable gr/scf)
547219	7440	0.02	Yes (0.088)
547220	4464	0.02	Yes (0.107)
547221	4464	0.02	Yes (0.107)
547222	8928	0.022	Yes (0.082)

Based on the controlled PM emissions, grain loading from the engines are complying with the allowable gr/scf loading limits listed in table 404 (a) of the rule. Therefore, compliance with this rule is expected.

Rule 407: The provisions of this rule are not applicable to the engines per section (b) (1) of the rule.

Rule 409: The provisions of this rule are not applicable to the engines.

Rule 431.2: The applicant is using diesel fuel with a sulfur content of less than 15 ppm. Hence compliance is expected with this rule.

Rule 1110.2 All engines operating at Navy's San Clemente Island are exempt from requirements of this rule per section (h)(8).

REG. XIII Since there are no emissions increase from the proposed modification, the requirements of this regulation are not triggered.

Rule 1470: All engines operating at Navy's San Clemente Island are exempt from requirements of this rule per section (h)(7).

Rule 1472: This rule is not applicable to Non-emergency diesel fueled engines.

40 CFR, Part 60, Subpart IIII The requirements of this subpart are not applicable to the diesel engines as they were manufactured and installed prior to January 1, 2009.

40 CFR, Part 60, Subpart JJJJ The requirements of this subpart are applicable to Spark ignition Ignition engines. Since these engines are compression-ignited, the requirements of this subpart are not applicable.

40 CFR, Part 63, Subpart ZZZZ San Clemente island is an Area Source for HAP. The requirements of this subpart are therefore applicable. The engines are expected to meet emission standards as indicated below:

	NESHAP Requirement	Proposed Equipment	Compliance
Existing Engines	Construction Commenced prior June 12, 2006.	Engines constructed prior June 12, 2006	Yes
Emission Standards	23 PPM CO or 70% CO reduction by December 31, 2013 (Per extension granted by EPA)	The applicant proposes to reduce CO emissions by 70% from the baseline.	Yes
Operating Limitations	None	None	N/A
Limits	-Pressure Drop Across Catalyst-Measured Monthly and within 2 inches of original set point. -Catalyst inlet temp-continuously monitored, s/b 450-1350 deg. F	Pressure drop and temperature monitoring conditions are included in the permit conditions. Also the catalyst manufacturer requires minimum temp. of 550 deg. F	Yes
Fuel Requirement	Ultra low sulfur diesel (15 ppmw)	Ultra low sulfur diesel (15 ppmw)	Yes

		Included in permit condition	
Requirements (Non-emergency)	Operate/maintain engine and control device per mfr instructions or owner-developed main. plan	Included in permit condition.	Yes
Performance Testing	-CO testing- EPA Method 10 or equivalent. -O2 Measurement - % Reduction- Measured at Inlet & Outlet simultaneously -Subsequent performance testing every 8,760 hours or once every 3 years for engines >500 HP	-CO emissions testing conditions included in the permit to construct. Tests conducted on engines with equivalent AQMD method 100.1with O2 measurement. - Tests measures CO at Inlet & Outlet simultaneously to calculate % reduction. -Subsequent testing requirements to be included in the permit conditions.	Yes
Compliance Reporting	-Required for Non-Emergency Engines - Semi Annual Compliance reporting	-Facility will be forwarding emissions testing reports to the district. - A permit condition will be included to enforce semi-annual compliance reporting.	Yes

Regulation XXX:

The installation of oxidation catalysts on the non-emergency engines is considered as a "de minimis significant permit revision" to the Title V permit for this facility

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30

Air Contaminant	Daily Maximum (lbs/day)
NOx	40
PM10	30
SOx	60
CO	220

To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is 1st permit revision to the Title V renewal permit issued to this facility on August 29, 2012. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued.

Title V Permit Revisions Summary

	Revision	HAP	VOC	NO_x	PM_{10}	SO_x	CO
	Renewal August 29, 2012	**0**	**0**	**0**	**0**	**0**	**0**
1st	Permit Revision: Installation of Oxidation Catalysts on Non-emergency engines (Devices D17-20, a/nos. 547219-22).	0	0	0	0	0	0
Cumulative Total		0	0	0	0	0	0
Maximum Daily		30	30	40	30	60	220

Since the cumulative emission increases resulting from permit revision are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimis significant permit revision".

CONCLUSION:

The proposed project is expected to comply with all applicable District Rules and Regulations. Also, since the proposed project is considered as a "de minimis significant permit revision", it is exempt from the public participation requirements under Rule 3006 (b). A proposed facility permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility subject to conditions below:

Engines:

B61.2

The operator shall not use diesel fuel containing the following specified compounds:

Compound	ppm by weight
Sulfur	greater than 15

D29.1

The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) be tested	Required Test Method(s)	Averaging Time	Test Location
CO emissions	EPA Test Method 10 or District Method 100.1	District-approved averaging time	Simultaneous inlet and outlet

The test(s) shall be conducted at least annually after the initial source test(s).
The test shall be conducted as per test procedures outlined in 40 CFR63, Subpart ZZZZ.
The test shall be conducted to determine the CO emissions at the inlet and oulet of the oxidation catalyst to demonstrate compliance with the applicable requirements of 40 CFR63, Subpart ZZZZ.
A source test protocol shall be submitted to the district no later than 60 days after the initial start-up of this equipment unless otherwise approved in writing by the district. The test protocol shall be approved in writing by the district before the test commences. The test protocol shall include the completed district forms ST-1 and ST-2 specifying the proposed operating conditions of the equipment during the test, the identity of the testing laboratory, a statement from the testing laboratory certifying it meets the criteria in district rule 304(k), and a description of the sampling and analytical procedures to be used.
The test shall be conducted within 45 days only after a source test protocol has been received and approved by the District.
The District shall be notified of the date and time of the test at least 10 calendar days prior to the test.
Sampling facilities shall comply with the District guidelines for construction of sampling and testing facilities, pursuant to Rule 217.
The operator shall provide to the District a source test report in accordance with the following specifications; source test results shall also include emissions rates for CO in terms of lb/hr and part per million by volume, Oxygen Content, Moisture Content, Flow Rate, Inlet and OutletTemperature, Fuel Usage. Source test results shall also include percent reduction of CO.

D323.1
The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on a quarterly basis, at least, unless the equipment did not operate during the entire quarterly period. The routine quarterly inspection shall be conducted while the equipment is in operation and during daylight hours.

If any visible emissions (not including condensed water vapor) are detected that last more than three minutes in any one hour, the operator shall verify and certify within 24 hours that the equipment causing the emission and any associated air pollution control equipment are operating normally according to their design and standard procedures and under the same conditions under which compliance was achieved in the past, and either:

1). Take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in section k of this permit; or

2). Have a CARB-certified smoke reader determine compliance with the opacity standard, using EPA Method 9 or the procedures in the CARB manual "visible emission evaluation", within three business days and report any deviations to AQMD.

The operator shall keep the records in accordance with the recordkeeping requirements in section k of this permit and the following records:

1). Stack or emission point identification;
2). Description of any corrective actions taken to abate visible emissions;
3). Date and time visible emission was abated; and
4). All visible emission observation records by operator or a certified smoke reader.

E448.1.
The operator shall comply with the following requirements:

The engine and contol device shall be operated and maintained as per manufacturer's instructions or an operator-developed maintenance plan.

H23.10
This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
HAPs	40CFR63,	SUBPART ZZZZ

Oxidation Catalyst:
A72.1
The operator shall maintain this equipment to achieve a minimum removal efficiency of 70 percent for CO during the normal operation of the equipment it vents.

C6.1
The operator shall use this equipment in such a manner that the differential pressure being monitored, as indicated below, does not exceed 2 inches water column.

To comply with this condition, the operator shall install and maintain a(n)differential pressure gauge to accurately indicate the differential pressure across the oxidation catalyst.

The operator shall determine and record the parameter being monitored once every 30 days.

D12.2
The operator shall install and maintain a(n) temperature reading device to accurately indicate the temperature at the inlet and outlet of the Oxidation Catalyst. The inlet temperature shall be at least 550 degrees Fahrenheit.
The temperature at the inlet and outlet of the oxidation catalyst shall be continuosly monitored.

The operator shall also install and maintain a device to continuously record the parameter being measured.