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PERMIT TO CONSTRUCT EVALUATION

Applicant's Name	UNIVERSAL CITY STUDIOS
Company ID	800202
Mailing Address	100 UNIVERSAL CITY PLAZA, UNIVERSAL CITY, CA 91608
Equipment Address	3900 LANKERSHIM BLVD., UNIVERSAL CITY, CA 91608

EQUIPMENT DESCRIPTION:

A/N 555909 (New Construction)

INTERNAL COMBUSTION ENGINE, JOHN DEERE, MODEL NO. 4024HF285B, DIESEL-FUELED, 4 CYLINDERS, TURBOCHARGED, AFTERCOOLED, 80 BHP, DRIVING AN EMERGENCY ELECTRICAL GENERATOR, WITH A CRT DIESEL PARTICULATE FILTER SYSTEM, JOHNSON MATTHEY, MODEL NO. CRT, AND A DATA LOGGING AND ALARM SYSTEM.

A/N 556024

TITLE V REVISION APPLICATION, DEMINIMUS PERMIT REVISION.

BACKGROUND:

Universal Studios submitted these permit applications as Class I (New Construction) on 09/3/13 for Permits to Construct/Operate an internal combustion engine driving one emergency generator with a diesel particulate filter. This is an existing facility operating under EPA's Title V Facility permit. This facility has permits to operate emergency engines, emergency fire water pumps, spray booths, an oven, Neg. air machines, diesel-fueled pressure washers, an Intra-facility portable abrasive blasting machine, a film cleaning machine with carbon adsorber, gasoline fuel dispensing stations, and a landfill gas collection and treatment system.

This is a Title V facility and currently operates under a Title V facility permit that was first issued on August 16, 2002. The facility permit was renewed on December 7, 2012. This is the 3rd revision after the renewal was issued. Review of the compliance files for this facility reveals that there are no records of nuisance complaints or notices to comply or violations during in the last two years.

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PROCESS DESCRIPTION:

The facility is a movie and television studio /themepark. The emergency engines provide power to on-site buildings in case of utility power outage. The operating hours are 1 hr/day, 1 day/week, and 50 weeks/yr.

The engine is equipped with a CRT Diesel Particulate Filter system. The system consists of an oxidizing catalyst followed by a particulate filter. The filter primarily traps the carbon particulates coming from the engine exhaust. The catalyst is positioned before the filter to convert NO to NO2. The NO2 then oxidizes the soot that is collected on the filter to regenerate the filter. The NO2 is more effective than oxygen in combusting the soot and at a much lower temperature than is normally required so no supplemental heat is necessary. Regeneration will occur when the engine exhaust temperature is at least 240 degrees Centigrade (or 464 degrees Fahrenheit). The filter has been approved by CARB to remove at least 85% of PM emissions.

The oxidizing catalyst controls the hydrocarbons and Carbon Monoxide emissions. The oxidization catalyst is guaranteed by the manufacturer to reduce CO emissions by 80% and hydrocarbon emissions by 70%. The catalyst converts CO and HC into CO2 and water.

The CARB verification requires that this JM CRT PM Filter system be installed with a Data Logging and Alarm System. This system allows for the continuous monitoring of exhaust temperature and backpressure. The CARB verification for this filter system also included limitations on operation of the engine in idle mode, minimum temperature requirements, and a recommended total hours of operation after which the integrity of the filter should be checked and/or replaced (please see attached copy of CARB verification order). Conditions implementing these CARB requirements will be added to the permit.

EMISSIONS AND ANALYSIS:

The proposed engine is an EPA Certified Tier 3 engine. This engine is also pre-certified by the district. The emission factors were taken from the district application files when the manufacturer applied for certified permit.

The emissions are discounted by 85% for PM, 80% for CO, and 70% for VOC. For emission calculations, please refer to attached spreadsheet and are summarized below.

	VOC	NOx	SOx	CO	PM	PM10
Emission factor, g/HP-hr	0.16	2.9	0.0049	1.1	0.15	0.14
With Control	0.048	2.9	0.0049	0.22	0.0225	0.022
lb/hr	0.008	0.51	0.00	0.04	0.0040	0.0038
lb/day Max.	0	1	0	0	0	0
lb/day Avg.	0	0.07	0	0	0	0
lb/yr	0.43	26.06	0.04	1.98	0.20	0.19

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GREENHOUSE GASES CALCULATIONS

Please refer to attached calculations worksheet and are summarized below:

CO2 = 90.3 lb/hr

CH4= 0.0 lb/hr

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 the daily emissions are less than specified in section (g), public notice will not be required by this section.

Rule 212(c) (3): The MICR is less than 1 in-a million resulting from the use of emergency ICE. Therefore, a public notice will not be required per this section.

Rule 401 With the installation of the PM filter and maintenance of this equipment, the visible emissions from the engine are not likely to violate requirements of this rule.

Rule 402 Operation of equipment is not expected to create a nuisance.

Rule 431.2 The engine will use diesel fuel that will comply with the requirements of this rule (15 PPM sulfur content by weight). Compliance is expected.

Rule 1110.2 Emergency engines are exempt from requirements of this rule.

REG. XIII The proposed engine is tier 3, as certified by EPA and CARB, which is BACT for emergency diesel engines rated at this capacity as indicated in the table below. In addition, since the facility is a major source, a diesel particulate filter approved by CARB is required to satisfy LAER requirements.

BACT/LAER REQUIREMENTS (TIER 3 ENGINES)

	NOx + ROG (Gm/bhp-hr)	CO (Gm/bhp-hr)	PM (Gm/bhp-hr)
Required	3.5	3.7	PM Filter
Actual	2.95	0.22	Installed
Compliance	Yes	Yes	Yes

Emergency engines are exempt from Modeling and Offset requirements per section 1304 (a) (4) of Reg. XIII.

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Rule 1401: Emergency engines are exempt from the requirements of this rule as per section (g)(1)(F).

Rule 1470: The engines are meeting NO_x+ROG and CO emissions standards specified in Table 2 of paragraph (c) (2)(C) (viii) of the rule is summarized below:

	NO_x + ROG (Gm/bhp-hr)	CO (Gm/bhp-hr)
Required	3.5	3.7
Actual	2.95	0.22
Compliance	Yes	Yes

For PM emissions limit compliance, the engines are expected to emit 0.0225 gm/bhp-hr, which is lower than required 0.15 gm/bhp-hr in paragraph (c) (2)(C) (iii) of the rule for engines. Therefore, compliance with this rule is expected.

Rule 1472: The facility has more than 3 emergency engines on site. A R1472 compliance plan filed under a/no. 494255 was approved for the facility on February 25, 2011. The PM emissions from the proposed engine are less than 0.02 gm/bhp-hr (0.004 lb/hr) and will not significantly increase the Engine Index (0.012). Thus compliance is expected from this rule and a new plan application is not required.

40 CFR, Part 60, Subpart III Section d of this subpart requires the engines < 3000 BHP manufactured after 2007 meet appropriate Tier 2 or Tier 3 standards as applicable based on the horsepower. Since this engine is <751 BHP, Tier 3 standards apply and are summarized below:

TIER 3 ENGINES

	NO_x + ROG (Gm/bhp-hr)	CO (Gm/bhp-hr)	PM (Gm/bhp-hr)
Required	3.5	3.7	0.3
Actual	2.95	0.22	PM Filter Installed (0.02 gm/bhp-hr)
Compliance	Yes	Yes	Yes

Other Requirements in the NSPS for New CI Emergency Engines

	NSPS Requirement	Proposed Equipment	Compliance
New Engine	Manufactured after 7/1/2006	Manufactured 2013	Yes
Emission Standards Post 2007 model year	Tier 3 standards	The engine meets Tier 3 standards.	Yes
Fuel Requirement	Ultra low sulfur diesel (15 ppmw)	Included in permit condition	Yes
Monitoring/Recordkeeping/Reporting	Non-resettable hour meters and records of operation	Included in permit condition	Yes

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	NSPS Requirement	Proposed Equipment	Compliance
Reporting	None	None	Not applicable

40 CFR, Part 60, Subpart JJJJ The requirements of this subpart are not applicable to Compression Ignition engines.

40 CFR, Part 63, Subpart ZZZZ The facility is an Area Source for HAPs. The requirements of this Subpart are therefore applicable. The engines were purchased post June 12, 2006 and therefore are considered new engines.

	NESHAP Requirement	Proposed Equipment	Compliance
New Engine	Ordered After June 12, 2006	After June 12, 2006	Yes
Emission Standards	Meet NSPS standards	Yes (Complies with emissions standard in Subpart III)	Yes
Operating Limitations	None	200 hrs/yr Included in permit condition	Yes
Fuel Requirement	None	Ultra low sulfur diesel (15 ppmw) Included in permit condition	Yes
Compliance requirements (Section 60.4211)	No limits on hours for emergency service	200 hours per year included in permit condition	Yes
Compliance requirements (Section 60.4211)	100 hrs/yr for maintenance and testing: 100 Hours can be used for: -Testing & Maintenance - No peak shaving or demand response program -Deviation of Voltage Frequency of 5% or greater below standard voltage of frequency -Up to 50 hours/yr for non-emergency use	50 hrs/yr for maintenance and testing per BACT requirements. No peak shaving or demand response per Rule 1470.	Yes
Notification and Reporting (Section 60.4214)	Beginning 2015, engines over 100 HP are required to file annual reports to include: - Company Name and address of engine location - Engine Make and Model No. - Hours of operation	Engine is <100 HP and the recordkeeping and reporting requirements are included in the permit.	N/A

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Regulation XX: The facility is not under RECLAIM program.

Regulation XXX:

The installation of new emergency engine is considered as a “deminimus permit revision” to the Title V permit for this facility

Rule 3000(b)(6) defines a “deminimus 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
NO _x	40
PM ₁₀	30
SO _x	60
CO	220

To determine if a project is considered as a “deminimus 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 3rd permit revision to the Title V renewal permit issued to this facility on December 7, 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	PM₁₀	SO_x	CO
	Previous Revisions	0	0	4	0	0	0
3 rd	Installation of a new Emergency Engine (a/no. 555909).	0	0	0	0	0	0
	Cumulative Total	0	0	4	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 “deminimus 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 “deminimus permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed facility permit incorporating

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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:

CONCLUSION:

The proposed project is expected to comply with all applicable District Rules and Regulations. Therefore, a revised Title V permit will be issued to this facility subject to conditions below:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW. [RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES. [RULE 204]
3. THIS ENGINE SHALL NOT OPERATE MORE THAN 200 HOURS IN ANY ONE YEAR, WHICH INCLUDES NO MORE THAN 50 HOURS IN ANY ONE YEAR FOR MAINTENANCE AND TESTING. [RULE 1110.2, 1303 (a) (1) - BACT, 1304 (a) (4), 1470, 40 CFR PART 63 SUBPART ZZZZ]
4. AN OPERATIONAL NON-RESETTABLE TOTALIZING TIME METER SHALL BE INSTALLED AND MAINTAINED TO INDICATE THE ENGINE ELAPSED OPERATING TIME. [RULE 1110.2, 1303 (a) (1) - BACT, 1304 (a) (4), 1470, 40 CFR PART 60 SUBPART IIII]
5. THE OPERATION OF ENGINE BEYOND 50 HOURS PER YEAR ALLOTTED FOR ENGINE MAINTENANCE AND TESTING SHALL BE ALLOWED ONLY IN THE EVENT OF A LOSS OF GRID POWER OR UP TO 30 MINUTES PRIOR TO A ROTATING OUTAGE, PROVIDED THAT THE ELECTRICAL GRID OPERATOR OR ELECTRIC UTILITY HAS ORDERED ROTATING OUTAGES IN THE CONTROL AREA WHERE THE ENGINE IS LOCATED OR HAS INDICATED THAT IT EXPECTS TO ISSUE SUCH AN ORDER AT A CERTAIN TIME, AND THE ENGINE IS LOCATED IN A UTILITY SERVICE BLOCK THAT IS SUBJECT TO THE ROTATING OUTAGE. ENGINE OPERATION SHALL BE TERMINATED IMMEDIATELY AFTER THE UTILITY DISTRIBUTION COMPANY ADVISES THAT A ROTATING OUTAGE IS NO LONGER IMMINENT OR IN EFFECT. [RULE 1304 (a) (4), 1470]
6. AN ENGINE OPERATING LOG SHALL BE KEPT AND SHALL DOCUMENT THE TOTAL TIME THE ENGINE IS OPERATED EACH MONTH AND SPECIFIC REASON FOR OPERATION AS:
 - A. EMERGENCY USE.
 - B. MAINTENANCE AND TESTING.
 - C. OTHER (DESCRIBE THE REASON FOR OPERATING).

IN ADDITION, EACH TIME THE ENGINE IS MANUALLY STARTED, THE LOG SHALL INCLUDE THE DATE OF OPERATION, THE SPECIFIC REASON FOR OPERATION, AND

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THE TIME METER READING (IN HOURS AND TENTHS OF HOURS) AT THE BEGINNING AND END OF OPERATION.

[RULE 1110.2, 1303 (a) (1) - BACT, 1304 (a) (4), 1470, 40 CFR PART 60 SUBPART III]

7. ON OR BEFORE JANUARY 15 TH OF EACH YEAR, THE OPERATOR SHALL RECORD IN THE ENGINE OPERATING LOG THE FOLLOWING:
 - A. THE TOTAL HOURS OF OPERATION FOR THE PREVIOUS CALENDAR YEAR, AND
 - B. THE TOTAL HOURS OF ENGINE OPERATION FOR MAINTENANCE AND TESTING FOR THE PREVIOUS CALENDAR YEAR.

ENGINE OPERATING LOG SHALL BE RETAINED ON SITE FOR A MINIMUM OF FIVE CALENDAR YEARS AND SHALL BE MADE AVAILABLE TO THE EXECUTIVE OFFICER OR REPRESENTATIVE UPON REQUEST.

[RULE 1110.2, 1303 (a) (1) - BACT, 1304 (a) (4), 1470, 40 CFR PART 60 SUBPART III]

8. THE OPERATOR SHALL NOT USE ANY DIESEL FUEL UNLESS THE FUEL IS LOW SULFUR DIESEL FOR WHICH THE SULFUR CONTENT SHALL NOT EXCEED 15 PPM BY WEIGHT AS SUPPLIED BY THE SUPPLIER.

[RULE 431.2, 40 CFR PART 60 SUBPART III]

9. THIS ENGINE SHALL NOT BE USED AS PART OF A DEMAND RESPONSE PROGRAM USING INTERRUPTIBLE SERVICE CONTRACT IN WHICH A FACILITY RECEIVES A PAYMENT OR REDUCED RATES IN RETURN FOR REDUCING ITS ELECTRIC LOAD ON THE GRID WHEN REQUESTED TO SO BY THE UTILITY OR THE GRID OPERATOR.

[RULE 1470]

10. THIS ENGINE SHALL NOT BE OPERATED UNLESS ITS EXHAUST IS VENTED TO A CRT DIESEL PARTICULATE FILTER SYSTEM WHICH IS IN FULL OPERATION AND WHICH IS IN GOOD OPERATING CONDITION AT ALL TIMES.

[RULE 1303(a) (1)-BACT]

11. THE CRT DIESEL PARTICULATE FILTER SYSTEM INSTALLED ON THIS ENGINE SHALL MAINTAIN AT LEAST 85% CONTROL EFFICIENCY FOR PARTICULATE MATTER EMISSIONS.

[RULE 1303(a) (1)-BACT]

12. THE OPERATOR SHALL NOT OPERATE THE CRT DIESEL PARTICULATE FILTER SYSTEM WITHOUT AN OPERATIONAL DATA LOGGING AND ALARM SYSTEM.

[RULE 1303(a) (1)-BACT]

13. A GAUGE SHALL BE INSTALLED TO INDICATE IN INCHES OF WATER, THE BACK PRESSURE OF THE CRT DIESEL PARTICULATE FILTER SYSTEM. IN OPERATION, THE MAXIMUM BACK PRESSURE OF THE CRT DIESEL PARTICULATE FILTER SYSTEM SHALL NOT EXCEED 30 INCHES W.C.

[RULE 1303(a) (1)-BACT]

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14. THIS ENGINE SHALL NOT BE OPERATED BELOW PASSIVE REGENERATION TEMPERATURE FOR MORE THAN 720 CONSECUTIVE MINUTES.
[RULE 1303(a) (1)-BACT]

15. THE OPERATOR SHALL REGENERATE THE DIESEL PARTICULATE FILTER AFTER EVERY 24 COLD START-UPS AND 30-MINUTE IDLE SESSIONS OR WHENEVER A WARNING SIGNAL IS RECEIVED FROM THE ALARM SYSTEM. IN ORDER TO ACHIEVE RE-GENERATION, THE OPERATOR SHALL RUN THE ENGINE UNTIL THE EXHAUST TEMPERATURE EXCEEDS 464 DEGREES FAHERNHEIT AND THE BACKPRESSURE MONITORING SYSTEM INDICATES A NORMAL BACKPRESSURE READING.
[RULE 1303(a) (1)-BACT]

16. THE TEMPERATURE OF THE ENGINE EXHAUST GAS AT THE INLET TO THE CRT DIESEL PARTICULATE FILTER SYSTEM SHALL BE GREATER THAN OR EQUAL TO 240 DEGREES CENTIGRADE (464 DEGREES FAHRENHEIT), EXCEPT DURING COLD ENGINE START-UP, NOT TO EXCEED 10 MINUTES.
[RULE 1303(a) (1)-BACT]

17. REMOVAL OF THE CRT DIESEL PARTICULATE FILTER SYSTEM'S FILTER MEDIA FOR CLEANING SHALL ONLY OCCUR UNDER THE FOLLOWING CONDITIONS:
 - A. THE INTERNAL COMBUSTION ENGINE SHALL NOT BE OPERATED FOR MAINTENANCE AND TESTING OR ANY OTHER NON-EMERGENCY USE WHILE THE CRT DIESEL PARTICULATE FILTER MEDIA IS REMOVED; AND
 - B. THE CRT DIESEL PARTICULATE FILTER'S FILTER MEDIA SHALL BE RETURNED AND RE-INSTALLED WITHIN 10 WORKING DAYS FROM THE DATE OF REMOVAL;

THE OWNER OR OPERATOR SHALL MAINTAIN RECORDS INDICATING THE DATE(S) THE CRT DIESEL PARTICULATE FILTER'S FILTER MEDIA WAS REMOVED FOR CLEANING AND THE DATE(S) THE FILTER MEDIA WAS RE-INSTALLED. RECORDS SHALL BE RETAINED FOR A MINIMUM PERIOD OF FIVE YEARS AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 1303(a) (1)-BACT]

Emissions And Requirements:

18. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

NO _x + VOC	3.5 GRAMS/BHP-HR, RULE 1303 (a)-BACT, 40 CFR PART 60 SUBPART III
CO	3.7 GRAMS/BHP-HR, RULE 1303 (a)-BACT, 40 CFR PART 60

