

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: **date, 2009**

Region: Asheville Regional Office
County: Jackson
NC Facility ID: 5000085
Inspector's Name: Brendan Davey
Date of Last Inspection: 08/12/2008
Compliance Code: C/In Compliance With
 Procedural Reqr

Facility Data			Permit Applicability (this application only)
<p>Applicant (Facility's Name): Western Carolina University</p> <p>Facility Address: Western Carolina University 111 Central Drive Cullowhee, NC 28723</p> <p>SIC: 8221 / Colleges And Universities, Nec NAICS: 61131 / Colleges, Universities, and Professional Schools</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>			<p>SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:</p>
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 5000085.08A Date Received: 10/31/2008 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 00884/T10 Existing Permit Issue Date: 11/16/2004 Existing Permit Expiration Date: 09/30/2009</p>
William Manware Director, Operations & Maintenance (828) 227-7224 Western Carolina University Cullowhee NC, 28723	William Manware Director, Operations & Maintenance (828) 227-7224 Western Carolina University Cullowhee NC, 28723	William Manware Director, Operations & Maintenance (828) 227-7224 Western Carolina University Cullowhee NC, 28723	
<p>Review Engineer: Mark Cuilla</p> <p>Review Engineer's Signature: Date: date, 2009</p>		<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue 00884/T11 Permit Issue Date: date, 2009 Permit Expiration Date: date, 2014</p>	

I. Purpose of Application

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (**00884T10**) was issued on **November 16, 2004**, and is scheduled to expire on **September 30, 2009**. The renewal application was received on **October 31, 2008**, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

II. Facility Description

The facility is the main steam plant for Western Carolina University.

III. History/Background/Application Chronology

October 4, 2004 – Initial Title V permit **00884T09** issued.

November 16, 2004 – Permit **00884T10** issued as an administrative amendment to add the list of insignificant activities.

October 31, 2008 – Permit application **5000085.08A** received for renewal of current Title V permit. Application was deemed complete for processing.

February 17, 2009 – DRAFT permit sent to Permittee and Regional Office for comment prior to public notice and EPA review.

Date, 2009 – DRAFT sent to 30-day public notice and 45-day EPA review prior to issuance.

IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page	Section	Description
Attachment	Insignificant activities	-added source description for unassociated refrigeration and air conditioning equipment -amended equipment table to better clarify NSPS designations for emergency generators
Cover	-	-amended all dates and permit revision numbers
TOC	-	-removed reference to Part II
All	Header	-amended permit revision number
3	Equipment table 2.1 A	-amended equipment description to include “water-tube design” -amended equipment description to include “water-tube design”
4	2.1 A.1.a 2.1 A.1.b 2.1 A.1.c 2.1 A.2.a 2.1 A.2.b 2.1 A.2.c 2.1 A.2.d 2.1 A.2.f	-added fuel types and equipment ID numbers -corrected testing cross reference -added regulatory citation and equipment ID numbers -added equipment ID numbers -corrected testing cross reference -added equipment ID numbers -added equipment ID numbers -added “no reporting” language for natural gas combustion
5	2.1 A.3.c 2.1 A.3.d 2.1 A.3.e 2.1 A.3.g	-corrected testing cross reference -added “no monitoring/recordkeeping” language for natural gas combustion -updated shell language and added equipment ID numbers -added equipment ID numbers
6-15	General Condition	-updated shell conditions (v2.22.1)

Other than minor updating of equipment descriptions (insignificant activities mostly), the only other modification to ESM as a result of this permit renewal was the association of an insignificant source (collection of refrigeration and air conditioning equipment).

V. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 2D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
 15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources
 15A NCAC 2D .0521, Control of Visible Emissions

A regulatory review for the existing sources will not be included in this document.

VI. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The facility is not currently subject to any New Source Performance Standards. However, the Permittee does operate the following emergency generators (for the purpose of this Section, the generators have been categorized according to ignition type (compression, i.e., diesel and spark, i.e., propane)) and installation date.

ID No.	Emission Source Size	Installation Date (i.e., commenced construction)	Manufactured Date (if applicable)
Diesel-fired emergency generators			
I-Graham-Gen	15 kW	Dec 1972	
I-Steam-Gen	97 kW	Dec 1974	
I-Hunter-Gen	17.5 kW	Jan 1980	
I-Harrill-Gen	30 kW	Sep 1994	
I-Natural-Gen	30 kW	Aug 1995	
I-Physical-Gen	175 kW	Jun 1998	
I-Robinson-Gen	100 kW	Jun 2000	
I-Fine-Gen	125.6 kW	Jan 2003	
I-Water-Gen	400 kW	Jul 2003	
I-Scott-Gen	15 kW	Apr 2005	
I-Camp Lab-Gen	80 kW (107.25 HP)	Feb 2008	Feb. 14, 2008
I-Forsyth-Gen	250 kW (335.25 HP)	Jul 2008	Dec. 13, 2007
Propane-fired emergency generators			
I-Belk-Gen	15 kW	Dec 1971	
I-Coulter-Gen	12.5 kW	Dec 1978	
I-Ramsey-Gen	88 kW	May 1986	
I-NCCAT-Gen	30 kW	Feb 1990	
I-Reynolds-Gen	30 kW	Apr 1991	
I-Walker-Gen	30 kW	Jan 1993	
I-Madison-Gen	15 kW	Feb 1993	
I-Albright-Gen	20 kW	Dec 1996	
I-Buchanan-Gen	22 kW	Dec 1996	
I-Natural-Fish-Gen	30 kW	Jan 1997	
I-Robertson-Gen	20 kW	Oct 1998	
I-Scott-Tele-Gen	19 kW	Aug 1999	
I-Killian-Gen	30 kW	Apr 2000	
I-Hinds-Gen	25 kW	May 2002	
I-Labor-Gen	34 kW	May 2002	

ID No.	Emission Source Size	Installation Date (i.e., commenced construction)	Manufactured Date (if applicable)
I-Bird-Gen	34 kW	Aug 2002	
I-McKee-Gen	34 kW	Aug 2002	
I-Central-Gen	80 kW	Mar 2003	
I-Forsyth-Comp-Gen	125 kW	Dec 2003	
I-Norton-Gen	40 kW	Aug 2005	
I-Stillwell-Gen	110 kW (147.51 HP)	Jun 2006	Jan. 19, 2006
I-Campus Rec-Gen	50 kW (67.05 HP)	Jul 2008	Jul 17, 2008

The 12 diesel-fired generators noted above were each reviewed for applicability of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart III). The provisions of this Subpart apply to manufacturers, owners and operators of stationary compression ignition (CI) internal combustion engines (ICE). Specifically 60.4200(a)(2) applies to owners and operators of stationary CI ICE that commence construction after **July 11, 2005** where the stationary CI ICE are:

- (1) manufactured after **April 1, 2006** and are not fire pump engines, or
- (2) manufactured as a certified National Fire Protection Association fire pump engine after **July 1, 2006**.

It should be noted that for the purposes of this Subpart, the date that "construction commences" is the date the engine is ordered by the owner or operator. As shown above, two of the 12 emergency generators (**ID Nos. I-Cap Lab-Gen and I-Forsyth-Gen**) were installed after the "commence construction" date. The Permittee has also confirmed that the manufacture date is after the deadline imposed by the Subpart for each unit.

It should also be noted that 15A NCAC 2Q .0109 "Activities Exempted from Permit Requirements" was amended effected January 1, 2009. Part of that modification amended paragraph (b) to read "*If a source is subject to any of the following rules, then the source is not exempted from permit requirements, and the exemptions in paragraph (c) do not apply:*

- (1) *new source performance standards under 15A NCAC 2D .0524, except the following activities are eligible for exemption:*
 - (F) *40 CFR Part 60, Subpart III*
 - (G) *40 CFR Part 60, Subpart JJJJ."*

Although this rule applies to small and synthetic minor facilities, DAQ has extended the coverage of this paragraph to Title V facilities via policy. As such, the renewed permit will be modified to add the NSPS designation to these sources on the list of insignificant activities. Highlights of the NSPS are as follows:

40 CFR 60, Subpart III

Emission Standards for Owners and Operators-

60.4205(b) – Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

60.4202(a)(2) – Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE, with a maximum engine power greater than or equal to 37 kW (50 HP) but less than 2,237 kW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

60.4206 – Owners or operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer over the entire life of the engine.

Fuel Requirements for Owners and Operators-

60.4207(a) – Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this Subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

60.4207(b) – Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this Subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

Other Requirements for Owners and Operators-

60.4208(a)-(h) – This section of the Subpart limits installation of stationary CI ICE to specific model years for the installation years of 2008, 2009, 2012, 2013, 2014, and 2016 (all size dependent).

60.4209(a) – If you are an owner or operator of an emergency stationary CI ICE, you must install a non-resettable hour meter prior to startup of the engine.

Compliance Requirements-

60.4211(a) – If you are an owner or operator and must comply with the emission standards specified in this Subpart, you must operate and maintain the stationary CI ICE and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR Parts 89, 94, and/or 1068 as they apply to you.

60.4211(c) – If you are an owner or operator of a 2007 model year and later stationary CI ICE and must comply with the emission standards in 60.4205(b) you must comply by purchasing an engine certified to the emission standards in 60.4205(b) as applicable for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

60.4211(e) – Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations.

Notifications, Reports, and Records for Owners and Operators-

60.4214(b) – If the stationary CI ICE is an emergency stationary CI ICE, the owner or operator is not required to submit an initial notification. Starting with the model years in Table 5 to this Subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

The 22 propane-fired emergency generators shown above were each reviewed for applicability of the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60, Subpart JJJJ). The provisions of this Subpart apply to manufacturers, owners and operators of stationary spark ignition (SI) internal combustion engines (ICE). Specifically 60.4230(a)(4) applies to owners and operators of stationary SI ICE that commence construction after **June 12, 2006** where the stationary SI ICE are manufactured:

- (1) on or after **July 1, 2007** for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1350 HP),
- (2) on or after **January 1, 2008**, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1350 HP,
- (3) on or after **July 1, 2008**, for engines with a maximum engine power less than 500 HP, or
- (4) on or after **January 1, 2009**, for emergency engines with a maximum engine power greater than 19 kW (25 HP).

It should be noted that for the purposes of this Subpart, the date that "construction commences" is the date the engine is ordered by the owner or operator. As shown above, two emergency generators (**ID Nos. I-Campus Rec-Gen and I-Stillwell-Gen**) were installed after the "commence construction" date, however these emergency engines were manufactured prior to the deadline imposed by the Subpart. Therefore, these emergency engines are not applicable to this Subpart.

NESHAPS/MACT –The facility is not currently subject to any National Emission Standards for Hazardous Air Pollutants. However, the Permittee does operate the emergency generators shown in the table above. Each of the generators was reviewed for applicability of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ). These regulations were modified effective **January 18, 2008** to include area sources of hazardous air pollutants (i.e., facilities that are not major sources of hazardous air pollutants). The provisions of this Subpart are applicable to owners, and operators of stationary reciprocating internal combustion engines (RICE). 40 CFR 63.6590(a) defines an affected source as any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. Specifically, any stationary RICE located at an area source of HAP emissions is defined as existing if the owner or operator commenced construction or reconstruction of the stationary RICE before **June 12, 2006** [40 CFR 63.6590(a)(1)(iii)]. As shown above, the Permittee has confirmed that four units commenced construction after the applicability date of this MACT (**ID Nos. I-Camp Lab Shop, I-Campus Rec Center, I-Stillwell, and I-Forsyth**). All others are exempt per 40 CFR 63.6590(b)(3), which states "a stationary RICE which is an existing emergency stationary RICE does not have to meet the requirements of this Subpart and of Subpart A of this Part. No initial notification is necessary."

40 CFR 63.6590(c) applies to the four new stationary RICE located at this area source. This paragraph states that an emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake horsepower (~373.13 kW), or a compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake horsepower must meet the requirements of this Part by meeting the requirements of 40 CFR 60, Subparts IIII (for compression ignition engines) or JJJJ (for spark ignition engines). No further requirements apply for such engines under this Part. The highlights for IIII compliance are shown above and apply to units (**ID Nos. I-Camp Lab Shop and I-Forsyth**). The highlights for JJJJ that specifically apply to units (**ID Nos. I-Campus Rec Center and I-Stillwell**) because of type and size are as follows:

40 CFR 60, Subpart JJJJ

Emission Standards for Owners and Operators-

60.4233(d) – Owners and operators of stationary SI ICE with a maximum engine power greater than 19 kW (25HP) and less than 75 kW (100HP) must comply with the emission standards in Table 1 to this Subpart for their emergency stationary SI ICE.

60.4233(e) – Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 kW (100 HP) must comply with the emission standards in Table 1 to this Subpart for their stationary SI ICE.

Monitoring Requirements for Owners and Operators-

60.4237(c) – Owners and operators of an emergency stationary SI ICE that is less than 130 HP and was built on or after July 1, 2008 must install a non-resettable hour meter upon startup of the emergency engine.

Compliance Requirements for Owners and Operators-

60.4243(b) – Owners and operators of a stationary SI ICE that must comply with the emission standards specified in 60.4233(d) or (e), must demonstrate compliance according to one of the following methods specified in paragraphs (b)(1) and (b)(2).

-purchasing an engine certified according to procedures specified in this Subpart, for the same model year and demonstrating compliance according to one of the following methods (60.4243(a)(1) or (a)(2)):

-if you operate and maintain the certified stationary SI ICE according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance (no performance testing is required)

-if you do not operate and maintain the certified stationary SI ICE according to the manufacturer's emission-related written instructions you will be considered a non-certified engine and you must:

-(for SI ICE less than 100 HP) keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions (no performance testing is required)

-(for SI ICE greater than 100 HP but less than 500 HP) keep a maintenance plan and records of conducted maintenance and maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions and conduct an initial performance test within 1 year of engine startup to demonstrate compliance.

-purchasing a non-certified engine and demonstrating compliance with the emission standards in 60.4233(d) or (e) and according to the requirements specified in 60.4244 (*What test methods and other procedures must I use if I am an owner or operator of a stationary SI ICE?*), as applicable, and according to the following:

-(for SI ICE greater than 25 HP but less than or equal to 500 HP) keep a maintenance plan and records of conducted maintenance and maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions and conduct an initial performance test to demonstrate compliance.

60.4243(d) – Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year (there is no time limit on the use of emergency engines in emergency situations).

60.4243(f) – (for SI ICE less than or equal to 500 HP) if you purchase a non-certified engine or you do not operate and maintain your certified stationary SI ICE and control device according to the manufacturer’s written emission-related instructions, you are required to perform initial performance testing as indicated in this section, but you are not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance.

Notifications, Reports, and Records for Owners and Operators-

60.4245(a) – Owners or operators must meet the following notification, reporting, and recordkeeping requirements:

- all notifications submitted to comply with this Subpart and all documentation supporting any notification
- maintenance conducted on the engine
- if certified, documentation from the manufacturer that the engine is certified to meet the emission standards and information required in 40 CFR parts 90 and 1048
- if not certified or certified operating in a non-certified manner and subject to 60.4243(a)(2), documentation that the engine meets the emission standards.

60.4245(d) – Owners or operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in 60.4244 within 60 days after the test has been completed.

It should be noted that although these units are subject to the MACT standard (via compliance with the respective NSPS Subparts), the units are still eligible for inclusion as insignificant activities. This is supported by the fact that the units remain below the five ton potential emissions cutoff and that 40 CFR 63.6585(d) states “*If you are an owner or operator of an area source subject to this Subpart, your status as an entity subject to a standard or other requirements under this Subpart does not subject you to the obligation to obtain a permit under 40 CFR Part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.2(a) for a reason other than your status as an area source under this Subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this Subpart as applicable.*” These units are not required to be permitted for any other reason; therefore, their inclusion as a permitted emission source is not required.

PSD – The facility is not currently subject to any Prevention of Significant Deterioration Standards. This permit renewal does not affect this status.

112(r) – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule. This permit renewal does not affect this status.

CAM – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-control emissions above the major source threshold, and use a control device to meet an applicable standard. The facility does not currently employ any control devices in order to meet any applicable standards; therefore CAM is not applicable.

VII. Facility Wide Air Toxics

The facility is not currently subject to any NC Air Toxics Requirements. This permit renewal does not affect this status.

VIII. Facility Emissions Review

The following table represents the latest years emission inventory from the facility:

Pollutant(s)	2006 Actual Emissions (tpy)	2007 Actual Emissions (tpy)
CO	6.45	7.60
NO _x	19.26	9.20
PM ₁₀	3.67	0.71
SO ₂	77.55	0.64
VOC	0.61	0.50
Total HAP/TAP	0.17	0.17

IX. Stipulation Review

Brendan Davey of the ARO inspected the facility on **August 12, 2008**. At that time and based on his observations, he found that the facility “appeared to be in compliance with the applicable air quality regulations and Air Permit No. 00884T10.”

X. Public Notice/EPA and Affected State(s) Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. Tennessee, Georgia and South Carolina are affected States and The Western NC Regional Local Program is an affected program all within 50 miles of the facility.

XI. Conclusions, Comments, and Recommendations

A professional engineer’s seal was not required for this renewal.

A consistency determination was not required for this renewal.

ARO recommends issuance of the permit and **was presented** with a DRAFT permit prior to notice and issuance.

RCO concurs with ARO’s recommendation to issue the renewed air permit.