

Electrical Power Generator Use and Procurement Guidance

***For compliance with applicable
air emission control regulations***

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Prepared by:

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1. Introduction

All internal combustion engines (i.e. electrical power generators, fire pumps) owned by Syracuse University and/or operated on Syracuse University property must be operated in a manner that is consistent with good air pollution control practices and in accordance with all applicable Federal and NYS air emission control regulations. The applicable regulations will vary depending on the engine's size, fuel, manufacture date, purpose of use, etc.

The Environmental Health and Safety Services Office (EHSS) must be notified of the presence of all internal combustion engines owned and/or operated on University property including engines (i.e. generators) operated at the University by an outside entity (i.e. contractor, vendor). EHSS will provide assistance in determining the specific regulations applicable to each internal combustion engine and will provide guidance on compliance actions that must be performed by the engine operator to achieve and maintain compliance with the applicable regulations.

Procurement policies, compliance guidance, and use limitations and requirements for electrical power generators and fire pumps at Syracuse University are provided in this document. For clarification or more detailed information on these requirements, please contact the Syracuse University Environmental Health and Safety Services Office at 443-4132.

2. Generator Classification

Each electrical power generator used at the University must be classified based on its intended purpose for operation, using classification criteria established in the applicable air emission regulations. Each generator will be classified as either an “Emergency” or “Non-Emergency” generator and as either a “Stationary” or “Portable” generator. Definitions of each classification are provided below. Use limitation and compliance requirements applicable to each type of generator classification are provided in Section 7 and 8 of this guidance document.

Each generator’s classification determination will be made by EHSS using information provided by the owner/operator of the generator. The use classification of a generator may not be changed unless approval to do so is obtained from EHSS and all necessary Title V Air Permit implications and applicable regulatory requirements are addressed.

A. Emergency Power Generator: A generator will be classified as an emergency generator if its operation is limited to emergency situations and required testing and maintenance only. An emergency generator can either be stationary or portable. Examples of emergency situations and required testing and maintenance include:

- producing power for critical networks or equipment when electric power from the local utility is interrupted
- emergency situations arising out of circumstances outside of the University’s control such as storm related power outages
- maintenance on a building’s primary power system
- planned renovations in a building that would require the primary source of power to be turned off
- periodic generator readiness testing
- generator maintenance checks

B. Non-Emergency Power Generator: A generator will be classified as a non-emergency generator if at any time the generator will be operated as a primary power source in situations which do not qualify as “emergency” operations as defined above. This includes generators operated to provide primary power to equipment and tools, event lighting and equipment operation, stage/sound equipment, etc. A non-emergency generator can either be stationary or portable.

C. Stationary Generator: A generator will be classified as a stationary generator if it is permanently installed or mounted in one place or if it is portable but remains in one location for more than 12 consecutive months.

D. Portable Generator: A generator will be classified as a portable generator if it is capable of being carried or moved from one location to another (i.e. equipped with wheels, skids, trailer, carrying handles, etc.) and does not remain at any one single location for more than 12 consecutive months.

3. Generator Procurement

Federal and State air emissions regulatory requirements for electrical power generators vary depending on the generator size, fuel type, manufactured date, use purpose, etc. The regulations stipulate requirements for both generator manufacturers and generator owners. It is imperative that the regulatory status for each generator planned for procurement and use at the University be evaluated prior to procurement to ensure that it is manufactured and can be operated in accordance with the applicable regulations and the University's Title V Air Emissions Permit.

- **Stationary Generator Procurement**

Environmental Health and Safety Services Office (EHSS) must be provided with 30 days advanced notice of the planned procurement of a generator for stationary installation at Syracuse University. EHSS must be provided with the proposed generator's specifications, installation location and operational parameters so that the generator can be classified in accordance with Section 2 of this guidance document and evaluated to ensure compliance with all applicable air emission regulations. Failure to procure a generator which meets applicable air emission requirements will result in the prohibited use of the generator at the University until all necessary compliance requirements are met.

All stationary generators procured for installation at the University must at a minimum:

- have a US EPA issued "Certificate of Conformity" supplied by the manufacturer, specific to the model, model year and maximum engine power of the generator's engine and indicating compliance with US EPA's Standard of Performance for New Stationary Sources (40 CFR Part 60). The Certificate of Conformity must be provided to EHSS for review and approval prior to installation of the generator at the University. Failure to obtain a US EPA Certificate of Conformity from the manufacturer will result in the need to perform initial and, as required, periodic air emission testing, at the expense of the procuring department and the prohibited use of the generator at the University until all necessary compliance requirements are met;
- have an hour meter which records the operation hours of the generator. The department responsible for the operation of the generator will be required to document and certify the use hours and purpose of each use of the generator;
- have a meter which tracks and records the generator's electrical output if the brake horsepower of the generator's engine is ≥ 400 horsepower.
- be installed and configured according to the manufacturer's emission-related specifications; and consistent with good air pollution control practices (i.e. periodic tune ups, etc.); and
- comply with all compliance requirements, regulations and Air Permit conditions applicable to the procured generator.

Diesel, fuel oil or gasoline fueled generators equipped with a fuel tank may also need to comply with NYS DEC's Petroleum Bulk Storage regulations (6 NYCRR Part 613), the US EPA Spill Prevention Control and Countermeasures (SPCC) regulations (40 CFR Part 112), and/or the University's Petroleum Bulk Storage program and SPCC Plan. More information on the applicability and associated requirements of these regulations specific to the generator planned for procurement can be obtained by contacting EHSS.

- **Permanent (SU Owned) Portable Generator Procurement**

Environmental Health and Safety Services (EHSS) must be provided with 14 days advanced notice of the planned procurement of a portable electrical generator for permanent use and storage at Syracuse University. Notification to EHSS is required for all portable generators regardless of type, size, planned use location or use

purpose. EHSS must be provided with the proposed generator's specifications, operational parameters, and planned storage location so that the generator can be classified in accordance with Section 2 of this guidance document and evaluated to ensure compliance with all applicable air emission regulations. Failure to procure a generator which meets applicable air emission requirements will result in the prohibited use of the generator at the University until all necessary compliance requirements are met.

All portable generators procured for ownership by Syracuse University must at a minimum:

- have an hour meter which records the operation hours of the generator. The department responsible for the operation of the generator will be required to document and certify the use hours, use location and purpose of each use of the generator;
- be operated and maintained in accordance with the manufacturer's recommendations and consistent with good air pollution control practices (i.e. periodic tune ups, etc.);
- comply with the US EPA's Non-Road Engine Standards as applicable, including the US EPA's Non-road Spark Ignition Engine Standards (40 CFR §1048) and the US EPA's Non-road Compression Ignition Engine Standards (40 CFR § 1039) including having a US EPA issued Certificate of Conformity specific to the engine model and model year and the required engine label; and.
- comply with all other compliance requirements, regulations and Air Permit conditions applicable to the generator to be procured.

If a portable generator remains in one location for a period of 12 consecutive months or more, it will be deemed a stationary generator and must meet the compliance requirements applicable to stationary generators.

Diesel, fuel oil or gasoline fueled generators equipped with a fuel tank may also need to comply with NYS DEC's Petroleum Bulk Storage regulations (6 NYCRR Part 613), the US EPA Spill Prevention Control and Countermeasures (SPCC) regulations (40 CFR Part 112), and/or the University's Petroleum Bulk Storage program and SPCC Plan. More information on the applicability and associated requirements of these regulations specific to the generator planned for procurement can be obtained by contacting EHSS.

- **Temporary and Rented Generators**

Environmental Health and Safety Services (EHSS) must be provided with 14 days advanced notice of the planned procurement (i.e. rental) and/or use of a portable electrical generator that will be at Syracuse University for less than a 90 day period. This includes portable generators that will be procured for use on University property by University personnel, University affiliated student groups, outside contractors and other third party entities, etc. Notification to EHSS is required regardless of type, size, planned use location or use purpose.

NYS Department of Environmental Conservation's air emission control and permitting regulations requires 10 day prior notification to NYS DEC for the use of a temporary portable generator that does not meet NYS DEC's criteria for exemption. EHSS must evaluate each temporary, portable generators proposed for use at the University to determine if notification to NYS DEC is required. EHSS will make the required notification to NYS DEC, if deemed necessary.

The department, group or entity requesting to procure and/or use a temporary portable generator will be responsible for providing EHSS with all specifications and documentation necessary to evaluate and demonstrate compliance with applicable air emission regulations using the "Portable Generator Use Approval Form" included as Attachment A. Based on the information provided, EHSS will evaluate the portable generator requested and advise the requesting department/entity of its compliance status and the specific

regulatory compliance requirements applicable to the generator. EHSS will also advise if 10 day notification of the temporary portable generator to NYS DEC is required prior to its use.

4. Fire Pump Procurement

All fire pumps procured for installation at the University must be electrically powered unless approval to install a non-electric fire pump is approved by the University's Fire and Life Safety Services Manager and the Director of Environmental Health and Safety Services (EHSS). Prior to procurement of a fire pump for stationary installation at Syracuse University, EHSS must be notified and provided with the proposed fire pump's specifications and operational parameters. Notification to EHSS is required for all fire pumps regardless of the fire pump's type, size, or planned use location and should be provided at least 30 days prior to procurement. EHSS will evaluate the proposed fire pump for compliance with applicable air emission regulations and advise the procuring department of the proposed fire pump's compliance evaluation status. Electrically powered fire pumps are typically exempt from air emission regulations but notification of the planned procurement of an electric fire pump must still be provided to EHSS.

5. Generator Modification or Reconstruction

Any planned modification or reconstruction of an existing electrical power generator at Syracuse University must be notified to Environmental Health and Safety Services Office (EHSS) prior to initiation of the modification or reconstruction. EHSS will review the planned modification/reconstruction to evaluate if any new or additional air emission regulations or compliance requirements will be triggered as a result of the planned modification/reconstruction and advise the requesting Department. Depending on the modification or reconstruction to be performed on the engine and/or the cost associated with the work (fixed capital cost), the generator may be deemed a new engine under certain air emission regulations and be required to comply with emission limits and compliance requirements applicable with new engines including initial and periodic performance emission testing requirements.

6. Fuel Sulfur Content Restrictions

The US EPA, under the Clean Air Act, regulates the sulfur content of diesel and fuel oil used in non-road engines including engines used in electrical power generators. The current sulfur limit (effective June 2010) for non-road fuel is 15 PPM (0.0015%) sulfur by weight. All fuel purchased for use in portable generators or other non-road applications at Syracuse University must be ultra- low sulfur diesel (ULSD) with sulfur content of 0.0015% by weight or less. It is the responsibility of the Department or entity procuring fuel for use in generators at Syracuse University to ensure the fuel complies with the current sulfur limitation and that documentation is maintained to support compliance with the sulfur content limitation for a period of 5 years.^{1,2}

¹ The EPA definition of the nonroad engine is based on the principle of mobility/portability, and includes engines installed on (1) self-propelled equipment, (2) on equipment that is propelled while performing its function, or (3) on equipment that is portable or transportable, as indicated by the presence of wheels, skids, carrying handles, dolly, trailer, or platform [40 CFR 1068.30]. In other words, nonroad engines are all internal combustion engines except motor vehicle (highway) engines, stationary engines (or engines that remain at one location for more than 12 months), engines used solely for competition, or engines used in aircraft.

² NYS has established (6 NYCRR Subpart 225-1) sulfur in fuel limits for all fuels used in New York State. The current sulfur in fuel limit applicable to Syracuse University is 1.5% sulfur by weight.

7. Emergency Generator Operation Requirements

It is the responsibility of the University department or entity who owns and/or operates the emergency generator to ensure that it is operated in accordance with all applicable air emission control regulations and requirements, including, but not limited to, the following:

- All SU owned generators must be included on the University's Air Emission Inventory.
- The use of an emergency generator must meet the emergency generator classification criteria outlined in Section 2A of this guidance document. Use of a portable or stationary generator classified as an "emergency" generator at Syracuse University for purposes other than as indicated in section 2A is strictly prohibited.
- The emergency generator may be operated for:
 1. No more than 500 hours total per year for all emergency use purposes combined.
 2. No more than 50 hours per year cumulative total for all planned renovations and repairs.
 3. No more than 100 hours per year cumulative total for periodic generator readiness testing combined with maintenance and planned renovations and repairs.
- Emergency generators must have a non-resettable hour clock to track operational hours.
- If the brake horsepower of the generator's engine is ≥ 400 horsepower the generator must have a meter which tracks the generator's electrical output.
- Each operation of the emergency generator must be documented (i.e., hours and purpose of operation) and reported to EHSS monthly (or at lesser frequency as authorized by EHSS). For generators with engines ≥ 400 hp, the amount of electricity generated in megawatt-hours must also be tracked and reported to EHSS monthly.
- If the brake horsepower of the generator's engine is ≥ 400 horsepower, no maintenance or testing of the generator is allowed between 1:00 PM and 8:00 PM from May 1st to September 30th.
- Emergency, stationary generators with engines ≥ 400 hp must have an annual (not to exceed once every 12 months) tune up. A record of the tune up must be kept and indicate
 - Date of tune-up
 - Name, title, and affiliation of person who conducted tune-up
 - Description of tasks performed during tune-up
 - Results of tune-up
- Emergency generators should have a documented annual oil and oil filter change, an annual air filter inspection and an annual inspection of all hoses and belts and replacements as necessary. Documentation should be maintained for a minimum of 5 years and include: date performed, performed by, findings and observations and corrective actions taken.
- Diesel and fuel oil fueled emergency generators must comply with the Sulfur in Fuel Content Restrictions indicated in Section 6 of this document. Documentation to certify the sulfur content of the fuel must be obtained from the fuel supplier and provided to EHSS upon request. All documentation supporting compliance with the sulfur in fuel restrictions must be maintained for a minimum of 5 years.
- The emergency generators must be operated and maintained in accordance with the manufacturer's emission related O&M instructions or an in-house O&M Plan developed consistent with good air

pollution control practices. Where manufacturer's O&M instructions are not available, an in-house O&M plan must be developed and implemented.

- Stationary emergency generators manufactured, installed or reconstructed after June 12, 2006 (in accordance with 40 CFR 63 Subpart ZZZZ) must comply with US EPA's Standards of Performance for New Stationary Sources at 40 CFR 60 Subpart JJJJ or 40 CFR 60 Subpart IIII. The regulations require generator owners to ensure that new generators are either:
 1. certified by the manufacturer to comply with the federal requirements and have a certificate of conformity from the US EPA indicating compliance; or
 2. for non-US EPA certified engines, have had initial performance emission testing to ensure compliance with the federal emission limits followed by periodic emission testing in accordance with 40 CFR Part 60, Subpart IIII or Subpart JJJJ.
- Portable emergency generators fueled by gasoline or natural gas manufactured, installed or reconstructed after January 1, 2004, must comply with the US EPA's Non-road Spark Ignition Engine Standards (40 CFR §1048) as applicable. The generator's engine must be certified by the US EPA to meet the applicable emission standards and must have an engine label indicating compliance with the applicable non-road engine regulation.
- Portable emergency generators diesel or fuel oil powered generators manufactured, installed or reconstructed after January 1, 2008 must comply with US EPA's Non-road Compression Ignition Engine Standards (40CFR § 1039) as applicable. The generator's engine must be certified by the US EPA to meet the applicable emission standards and must have an engine label indicating compliance with the applicable non-road engine regulation.
- If the emergency generator is equipped with a fuel oil or diesel tank, the tank must also comply with NYS DEC's Petroleum Bulk Storage regulations (6 NYCRR Part 613), the US EPA Spill Prevention Control and Countermeasures (SPCC) regulations (40 CFR Part 112), and/or the University's Petroleum Bulk Storage program and SPCC Plan, as applicable.

8. Non-Emergency Generator Operation Requirements

It is the responsibility of the University department or entity who owns and/or operates the generator to ensure that it is operated in accordance with all applicable air emission control regulations and requirements, including, but not limited to, the following:

- All SU owned generators must be included on the University's Air Emission Inventory.
- Generator must have a non-resettable hour clock to track operational hours.
- If the brake horsepower of the generator's engine is ≥ 400 horsepower the generator must have a meter which tracks the generator's electrical output.
- Each operation of the generator must be documented (i.e., hours and purpose of operation) and reported to EHSS monthly (or at lesser frequency as authorized by EHSS). For generators with engines ≥ 400 hp, the amount of electricity generated in megawatt-hours must also be tracked and reported to EHSS monthly.
- If the brake horsepower of the generator's engine is ≥ 400 horsepower, no maintenance or testing of the generator is allowed between 1:00 PM and 8:00 PM from May 1st to September 30th.
- Non-emergency, stationary generators with engines ≥ 400 hp must have an annual (not to exceed once every 12 months) tune up. A record of the tune up must be kept and indicate
 - Date of tune-up
 - Name, title, and affiliation of person who conducted tune-up
 - Description of tasks performed during tune-up
 - Results of tune-up
- Non-emergency, stationary generators must also have an annual an oil and filter change, air filter inspection, and inspection of all hoses and belts and replacements as necessary. Documentation of the oil and filter change and hose inspections and any replacements made must be maintained (for a minimum of 5 years) and provided to EHSS upon request. An annual oil and filter change and air filter, hose and belt inspection is also recommended for portable non-emergency generators.
- All diesel/fuel oil generators must comply with the Sulfur in Fuel Content Restrictions indicated in Section 6 of this document. Documentation to certify the sulfur content of the fuel must be obtained from the fuel supplier and provided to EHSS upon request. All documentation supporting compliance with the sulfur in fuel restrictions must be maintained for a minimum of 5 years.
- Non-emergency generators must be operated and maintained in accordance with the manufacturer's emission related O&M instructions or an in-house O&M Plan developed consistent with good air pollution control practices. Where manufacturer's O&M instructions are not available, an in-house O&M plan must be developed and implemented.
- Non-emergency diesel, fuel oil or natural gas powered generators greater than 400 hp and gasoline powered generators greater than 50 HP must have an NYS DEC Issued Air Emission Permit or Registration to operate (in accordance with 6 NYCRR Part 201) or be listed on the University's Air Emission (Title V) permit.
- Non-emergency, stationary generators greater than 400 hp operated on Main Campus (including the Steam Station) must comply with the NYS DEC Reasonably Available Control Technology (RACT) for

Major Facilities of Oxides of Nitrogen (NO_x RACT 6 NYCRR Part 227) including, but not limited to, the NO_x RACT emission limits.

- Non-emergency, stationary generators with an engine manufacture date prior to June 12, 2006, must comply with the US EPA's MACT standard for "Existing" Reciprocating Internal Combustion Engines (RICE) (40 CFR 63 Subpart ZZZZ), including, but not limited to, as applicable, submittal of an initial notification to the US EPA, compliance with emission limits, performance of initial and periodic emission testing, preparation and submittal of semi-annual compliance reports, etc. Compliance with these requirements and all costs associated with compliance will be the responsibility of the department/entity responsible for operation of the generator. EHSS will facilitate the submittal of any required notification or reporting to the US EPA for SU owned generators.
- Non-emergency, stationary generators with an engine manufacture date of June 12, 2006 or later, in accordance with US EPA's MACT standard for Reciprocating Internal Combustion Engines (RICE) (40 CFR 63 Subpart ZZZZ), must comply with the US EPA's standards for Compression Ignition (40 CFR 60 Subpart IIII) and Spark Ignition (40 CFR 60 Subpart JJJJ) Engines.
- Non-emergency, portable natural gas or gasoline powered generators manufactured, installed or reconstructed after January 1, 2004, must comply with the US EPA's Non-road Spark Ignition Engine Standards (40 CFR Part 1048) as applicable. Non-emergency, portable diesel or fuel oil powered generators manufactured, installed or reconstructed after January 1, 2008, must comply with US EPA's Non-road Compression Ignition Engine Standards (40 CFR Part 1039) as applicable.
- If the generator is equipped with a fuel oil or diesel tank, the tank must also comply with NYS DEC's Petroleum Bulk Storage regulations (6 NYCRR Part 613), the US EPA Spill Prevention Control and Countermeasures (SPCC) regulations (40 CFR Part 112), and/or the University's Petroleum Bulk Storage program and SPCC Plan, as applicable.

Appendix A

Portable Generator Use Approval Form

Syracuse University Environmental Health and Safety Services Office
Portable Generator Use Approval Form

The Department/Contractor procuring the generator must complete the top section of this form and submit it to the Syracuse University Environmental Health and Safety Services Office at 029 Lyman Hall, fax to (315)443-3081, or email to rjponza@syr.edu.

Requesting Contractor/Department: _____ Contact #: _____

Planned Use Date(s): _____ Planned Use Time(s): _____

Planned Use Location: SU Main Campus SU South Campus Other SU Location

Use Location Address/Building Name: _____

Planned Use Purpose: Emergency (backup) use only Event Power
 Lighting Other

Describe use purpose: _____

Generator Make/Model: _____ Generator's Serial # _____

Quantity to be used: _____ Engine Model: _____ Engine serial #: _____

Engine's Model Year: _____ Power (kW): _____ Horsepower (hp): _____

Fuel Type: Gasoline Ultra Low Sulfur Diesel Natural Gas Other: _____

Fuel Consumption Rate: _____ gal/hr Fuel Tank Size: _____ gallons

Planned Total Use Hours: _____ hrs Actual Use Hours: _____ hrs

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Air Permit Exemption Classification

- Emergency use (< 500hr per year)
- Non-Emergency Use and <400 hp diesel or natural gas exemption
- Non-Emergency Use and <50 hp gasoline exemption
- Non-Emergency "Temporary Emission Source" - Must provide 10 day advance notice to NYSDEC
- This generator does not meet an exemption - further action required

Use Hour Tracking Requirements

- Not required - non-emergency and not used on main campus
- Required - to verify emergency exemption applicability
- Required - to be used on Main Campus
- Required - provided as indicated above

Note: RICE MACT Requirements are not applicable to portable generators

EHSS Approval of Generator	
<input type="checkbox"/> Approved - no further actions	<input type="checkbox"/> Approved - use hours must be provided to EHSS
<input type="checkbox"/> Not Approved - need more information	<input type="checkbox"/> Not approved - does not meet regulations
Approved by: _____	Date: _____