Air Compliance Issues and Solutions

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Agenda

- Permitting
- NJDEP - New General Permits for Emergency Generators
- NJDEP - New GP permits for Boilers
- Annual Combustion Adjustment (tune up) requirement for boilers
- Gasoline Dispensing Facilities
- Fuel Sulfur Limits
- NSPS – New Source Performance Standard
- NESHAPs – National Emission Standards for Hazardous Air Pollutants

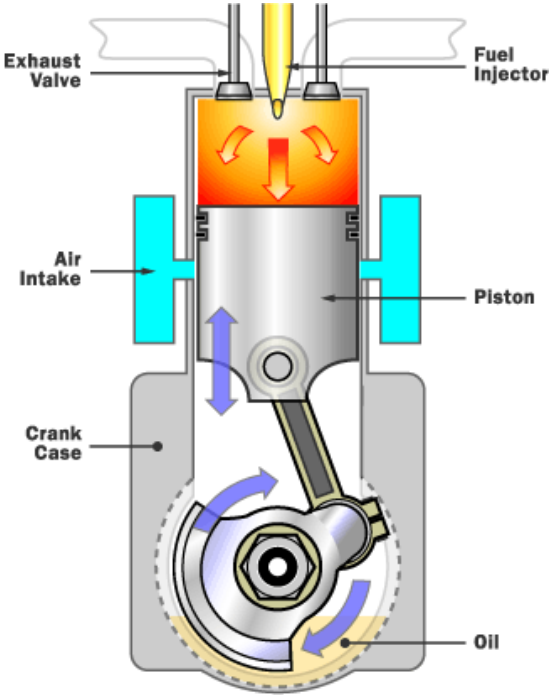
PERMITTING (VARIES WITH STATE)

NJDEP Requirements

- Combustion sources – 1MMBTU/hr heat input
  - boilers, flares, emergency generators etc.
- Processes – 50 lb/hr process rate
  - sludge thickeners, belts, centrifuges etc.
- Gasoline storage tanks => 2000 gal

Pennsylvania – Exempt activities

- Combustion units rated <=2.5 million BTU/hr heat input
- Natural gas furnaces <= 10 million BTU/hr heat input
- Internal combustion engines < 100 brake horsepower.



New York State – Exempt activities

- Boilers (NG & FO) < 10MMBTU/hr
- Emergency generators
- Internal combustion engines –
  - 200 kW in NY Metro area
  - 400 kW in rest of NY State
- Petroleum storage tanks < 10,000 gal

NJDEP - NEW GENERAL PERMITS FOR EMERGENCY GENERATORS

New General Permits

- GP 005A – EGs burning Diesel
- GP 005B – EGs burning Natural gas
- Single GP Per Facility
- Single or multiple units per permit
- <= 100,000 BTU/hr – Diesel
- <= 70,000 BTU/hr - NG

New General Permits contd.

Title V Facilities

- GP 003 – EGs burning Diesel
- GP 004 – EGs burning Natural gas
- CHP Turbine <= 65 MMBTU/hr
- CHP Stationary Engine <= 65 MMBTU/hr
- Boilers =>1 <=5 MMBTU/hr

GP - Emergency Generators

Operating Limits <= 100/hr/year

- Routine testing and maintenance operations;
- Emergency operations – no limit
- Title V facilities – may be allowed up to 500 hr per year

Recordkeeping Requirements

- Operational Logs of run hours, meter readings etc.

- Air Quality check prior to testing:
  - Required in NJ, Philadelphia, Delaware and Southern PA
  - Not required in NYC and/or New York State

New Jersey/Pennsylvania Requirements

- New Jersey
  - No testing/maintenance if air quality bad anywhere in the State
- Pennsylvania
  - Based on AQI metrics for given counties or zip codes

States attempting to know:

- how many emergency generators exist
- how often they are being used
- are operated solely for testing and to address emergency situations

State Specific Approaches:

- NJ – Air permit required for generators =>1,000,000 BTU/hr (approximately =>80 kW)
- NY – permitting not required for such small fuel combusting units
- NYC – =>138 hp (approximately 75 kW) EGs need to be registered and need a stack test
- Confirm your requirements

Emergency Engine Operation Limited to:

- Unlimited use for emergencies (e.g., power outage, fire, flood etc.)
- 100 hr/yr for maintenance/testing and emergency demand response
- 50 hr/yr of the 100 hr/yr allocation can be used for:
  - Non-emergency situations if no financial arrangement
  - Local reliability as part of a financial arrangement with another entity if specific criteria met (existing RICE at area sources of HAP only)

Emergency Engine Operation Limited to:

- Note: EPA did not finalize the proposed 50 hour provision for peak shaving until April 2017
- In NJ, Emergency generator(s) shall not be used as a source of energy or power for financial gains (Demand Response)

Things may change – stay tuned

NEW GENERAL PERMITS FOR BOILERS

New GP permits for Boilers issued

- General Permit (GP-017A) - Boiler(s) or Heater(s) <= 5 MMBtu/hr, each
- Replacing the current permit (GP-017)
- Effective date: March 20, 2017
- Only one GP (of a type) allowed/facility
- Current permits can continue till expiry

ANNUAL COMBUSTION ADJUSTMENT (TUNE UP) ON BOILERS

NOx RACT Regulations (Reasonably Available Control Technology)

- RACT - the lowest level of emissions that can be achieved taking into account technical and economic considerations.
- States required to minimize total emissions of NOx and CO resulting from fuel combustion in boilers/heaters.
- States have adopted NOx rule and issued regulatory requirements –
- Variations at State level

NOx RACT Regulations

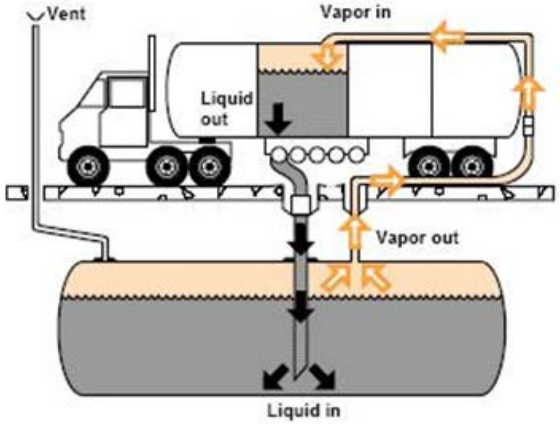
- **NY/NYC – Boilers > 1MMBTU**
  - ✓**No reporting requirement**
  - ✓**Records on site**
  - ✓**Conducted by a certified technician**
- **NJ – Boilers >5MMBTU/Hr**
  - ✓Adjustments conducted in the same calendar quarter of each year
  - ✓Adjustment report submittal through NJEMS (online) within 45 days
- **Boilers combusting NG with FO as emergency backup**
  - ✓Considered as NG boilers
  - ✓FO use limited to 500 hours/year
  - ✓Tune up while combusting natural gas only
    - o Greater than 48 hours on FO
    - o Conduct tune up combusting FO

GASOLINE DISPENSING FACILITIES

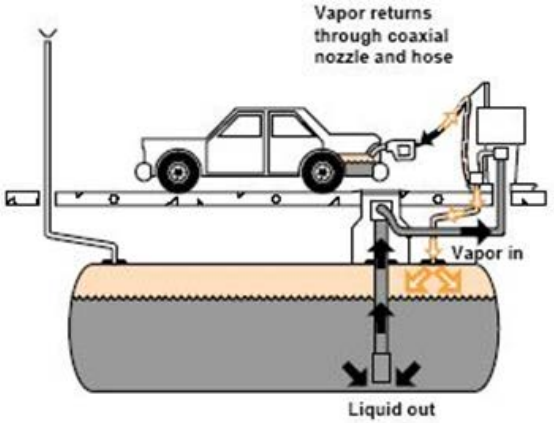
Gasoline Dispensing Facilities

EPA required two types of controls to capture gasoline vapor during vehicle fueling

Stage I – at the tanker



Stage II – at the nozzle



Gasoline Dispensing Facilities

Controls to capture gasoline vapor during vehicle fueling….

- Onboard Refueling Vapor Recovery (ORVR) – in vehicles
- ORVR now widespread in motor vehicle fleet
- Stage II redundant; counterproductive
- May 16, 2012 – EPA waivered the requirement for states to implement Stage II installation

Gasoline Dispensing Facilities

- New Jersey amending N.J.A.C. 7:27-16
  - to remove the requirement to install Stage II, and
  - require decommissioning of existing Stage II recovery systems.

- NJ - Gasoline AST/UST => 2000 gal Still need permit (GP-004A)

FUEL SULFUR LIMITS

Fuel Sulfur Limits

Effective July 1, 2014 through June 30, 2016:

- Sulfur Content in Fuel <= 500 ppmw (0.05% by weight)

Effective July 1, 2016 – current:

- Sulfur Content in Fuel <= 15 ppmw (0.0015% by weight)
- Recordkeeping by invoices / bills of lading / certificate of analysis per delivery showing fuel sulfur content. [N.J.A.C. 7:27-22.16(o)]

NSPS AND MACT STANDARDS FOR COMBUSTION SOURCES AT WWTPS

Boilers

- NSPS 40 CFR 60 Subpart D – Dc
- MACT 40 CFR 63 Subparts DDDDD and JJJJJJ

Engines

- NSPS 40 CFR 60 Subparts IIII and JJJJ
- MACT 40 CFR 63 Subpart ZZZZ

NSPS FOR BOILERS – SUBPART DC (40 CFR 60.40)

NSPS for Boilers – Subpart Dc (40 CFR60.40)

Heat input - 10 and 100 MMBTU/hr (239 - 2390 hp)

- Constructed after June 9, 1989
- Burning fuel oil

  - Initial Notification to EPA
    - Date of construction, date of start up, boiler size, fuel type
    - Submit notification even if in operation for many years

NSPS for Boilers – Subpart Dc (40 CFR60.40)

Heat input - 10 and 100 MMBTU/hr (239 - 2390 hp)

- **Monthly record of FO usage**
  - Fuel meters

- **Fuel sulfur certification**
  - FO sulfur limits
  - Fuel sulfur certification from supplier with each fuel delivery
  - Six monthly Compliance Report to EPA

NESHAPS – SUBPART JJJJJJ (40 CFR 63) MACT STANDARDS FOR BOILERS

NESHAPS – Subpart JJJJJJ (40 CFR 63)

Effective March 21, 2011

Affects boilers at Area Sources

(vs Major sources of HAPs subject to Subpart DDDDD)

- ✓NG boilers not subject
- ✓FO, Coal, biomass burning boilers affected

- Submit Initial Notification – January 2014
- Tune up every 2 years (5 years for <= 5 MMBtu/hr)

NESHAPS – Subpart JJJJJJ (40 CFR 63)

Existing boilers >= 10 MMBtu/hr

- One time Energy Assessment - March 21, 2014
- Can use assessment conducted in 2008 onwards
- Electronic report submittal to EPA – July 2014

New boilers >= 10 MMBtu/hr:

- PM emission limit - Initial testing and electronic reporting

NSPS AND MACT STANDARDS FOR ENGINES

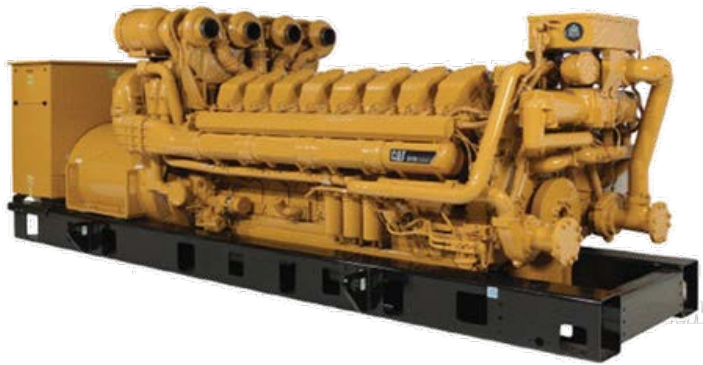
NSPS and MACT Standards for Engines

Reciprocating Internal Combustion Engine (RICE)

- Spark Ignition (gas fueled)
- Compression Ignition(liquid fueled)

Common RICE at WWTP:

- Emergency Generators
- Portable Generators
- Cogeneration Units



NSPS and MACT Standards for Engines

NSPS (40 CFR Part 60 Subpart IIII & Subpart JJJJ) Applicability determined by:

- ✓ Engine size
- ✓ Cylinder displacement
- ✓ Certified Tier (1 through 4)
- ✓ Model year

May be subject to

- ✓ Emission limits
- ✓ Notification requirements
- ✓ Performance Testing
- ✓ Recordkeeping requirements

NSPS and MACT Standards for Engines

http://www.epa.gov/OMS/standards/nonroad/nonroadci.htm

QUESTIONS?

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