

## Area Source, Existing, NESHAP ZZZZ Engine Requirements

Compliance Dates: CI - 5/3/13      SI - 10/19/13

Records: Keep records for 5 yrs that show compliance (notifications, reports, tests, maintenance, etc)

HP	2-Stroke Lean		4-Stroke Lean		4-Stroke Rich		4SLB & 4SRB,		4SLB & 4SRB,		Landfill &		Emergency &	
	CI/Diesel	Burn	Burn	Burn	Burn	Burn	≤24hrs/yr	Remote RICE	Digester Gas	Black Start				
hp < 100	b	b	b	b	b	b	-	-	b	b				
100 ≤ hp ≤ 300	b	b	b	b	b	b	-	-	b	b				
300 < hp ≤ 500	a (no Initial Notification)	b	b	b	b	b	-	-	b	b				
> 500	a	b	a	a	a	a	b	b	b	b			b, c	

- Notifications & Reports**
- a Initial Notification, Notice of Performance Test (60 days before), Notification of Compliance Status (within 60 days of test), Semiannual Compliance Report (annual if operates < 100hrs/yr).
  - b Deviation Report (only if a deviation from NESHAP ZZZZ requirements occurs).
  - c Annual Report (if operated or is contractually obligated to operate > 15 hrs/yr via an allowable power supply agreement).

HP	2-Stroke Lean		4-Stroke Lean		4-Stroke Rich		4SLB & 4SRB,		4SLB & 4SRB,		Landfill &		Emergency &	
	CI/Diesel	Burn	Burn	Burn	Burn	Burn	≤24hrs/yr	Remote RICE	Digester Gas	Black Start				
hp < 100	none	none	none	none	none	none	-	-	none	none				
100 ≤ hp ≤ 300	none	none	none	none	none	none	-	-	none	none				
300 < hp ≤ 500	49 ppm CO or 70% CO↓, d	none	none	none	none	none	-	-	none	none				
> 500	23 ppm CO or 70% CO↓, e	none	47 ppm CO or 93% CO↓, f	270 ppm CO or reduction, g	270 ppm CO or reduction, g	270 ppm CO or reduction, g	none	none	none	none				

- Emission Limits & Performance Tests**
- d 49 ppm CO limit or 70% CO reduction; initial performance test only (due by 10/30/2013).
  - e 23 ppm CO limit or 70% CO reduction; initial performance test (due by 10/30/2013), then subsequent performance tests every 8,760 hrs or 3 yrs, whichever comes first (5 yrs. if operates < 100hrs/yr).
  - f Install oxidation catalyst; 47 ppm CO limit or 93% CO reduction; initial performance test (due by 4/17/2014), then conduct annual compliance demonstration.
  - g Install non-selective catalytic reduction; 270 ppm CO limit, or 75% CO reduction, or 30% THC reduction; initial performance test (due by 4/17/2014), then conduct annual compliance demonstration.

HP	2-Stroke Lean		4-Stroke Lean		4-Stroke Rich		4SLB & 4SRB,		4SLB & 4SRB,		Landfill &		Emergency &	
	CI/Diesel	Burn	Burn	Burn	Burn	Burn	≤24hrs/yr	Remote RICE	Digester Gas	Black Start				
hp < 100	h, o	h, q	h, p	h, p	h, p	h, p	-	-	h, p	h, r, t				
100 ≤ hp ≤ 300	h, o	h, q	h, p	h, p	h, p	h, p	-	-	h, p	h, r, t				
300 < hp ≤ 500	h, i, j	h, q	h, p	h, p	h, p	h, p	-	-	h, p	h, r, t				
> 500	h, i, j, k, l	h, q	h, m	h, n	h, n	h, n	h, r	h, s	h, p	h, r, t				

- Operating Limits & Maintenance Requirements**
- h Minimize idle time during startup (startup not to exceed 30 mins), then normal emission standards apply.
  - i CARB diesel fuel required if displacement < 30 liters per cylinder.
  - j Operate a closed crankcase ventilation system or open crankcase filtration emission control system per manufacturer's requirements.
  - k If catalyst is installed, catalyst pressure drop ≤ 2 inH<sub>2</sub>O different than measured @ initial performance test; & measure monthly.
  - l If catalyst is installed, 450°F < catalyst inlet temperature < 1,350°F; continuously monitored; & conduct annual system audit.
  - m Auto engine shut down @ 1,350°F; or 450°F < catalyst inlet temperature < 1,350°F, continuously monitored, and conduct annual system audit.
  - n Auto engine shut down @ 1,250°F; or 750°F < catalyst inlet temperature < 1,250°F, continuously monitored, and conduct annual system audit.
  - o Change engine oil & filter and inspect air cleaner every 1,000 hrs and inspect/replace as necessary all hoses & belts every 500 hrs, or annually (whichever comes first).
  - p Change engine oil & filter, inspect spark plugs, and inspect/replace as necessary all hoses & belts every 1,440 hrs, or annually (whichever comes first).
  - q Change engine oil & filter, inspect spark plugs, and inspect/replace as necessary all hoses & belts every 4,320 hrs, or annually (whichever comes first).
  - r Change engine oil & filter and inspect/replace as necessary all hoses & belts every 500 hrs and inspect air cleaner or spark plug every 1,000 hrs, or annually (whichever comes first).
  - s Change engine oil & filter, inspect spark plugs, and inspect/replace as necessary all hoses & belts every 2,160 hrs, or annually (whichever comes first).
  - t Install a non-resettable hour meter.