RICE NESHAP Engine Requirements
40 Code of Federal Regulations (CFR) Part 63 Subpart ZZZZ (4Z)
Requirement Summary Tables

This document is intended solely as guidance, cannot be used to bind the Iowa Department of Natural Resources and is not a substitute for reading applicable statutes and regulations.

Table 1. Major Source Compression Ignition (CI) Engines - Diesel (and Dual Fuel if 2% or less Diesel)

New or Existing	Commenced construction	Emergency or Non-emergency	HP	Requirements	Stack Testing	Monitoring	Recordkeeping	Reporting
Existing	before 12/19/2002	Non-Emergency, not limited use (≥ 100 hr/yr)	> 500 HP	emission limit (70% CO reduction or 23 ppmvd CO), probably requires control; crankcase emission controls; ULSD	Every 3 years	control device parameters	maintenance, test results	initial notification, test reports, semi-annual compliance report
Existing	before 12/19/2002	Non-Emergency, limited use (< 100 hr/yr)	> 500 HP	none	N/A	N/A	hours of operation	N/A
Existing	before 6/12/2006	Non-Emergency	300 < HP ≤ 500	emission limit (70% CO reduction or 49 ppmvd CO), probably requires control; crankcase emission controls; ULSD	One-time	N/A	maintenance, test results	initial notification, test reports, semi-annual compliance report (annual, if limited use)
Existing	before 6/12/2006	Non-Emergency	100 ≤ HP ≤ 300	emission limit (230 ppmvd CO), should not require control	One-time	N/A	maintenance, test results	initial notification, test reports, semi-annual compliance report (annual, if limited use)
Existing	before 6/12/2006	Non-Emergency	< 100	maintenance requirements	N/A	N/A	maintenance	N/A
Existing	before 12/19/2002	Emergency, not used for DR	> 500 HP	None, if engine meets operating restrictions for emergency engines and is not used for DR	N/A	N/A	hours of operation	N/A
Existing	before 12/19/2002	Emergency, used for DR	> 500 HP	Unclear whether maintenance requirements apply; ULSD (starting 1/1/15)	N/A	N/A	hours of operation	Annual operating hours report (first report due 3/31/16)
Existing	before 6/12/2006	Emergency, not used for DR	≤ 500 HP	maintenance requirements	N/A	N/A	maintenance; hours of operation	N/A
Existing	before 6/12/2006	Emergency, used for DR	100 < HP ≤ 500	Maintenance requirements; ULSD (starting 1/1/15)	N/A	N/A	maintenance; hours of operation	Annual operating hours report (first report due 3/31/16)

New or Existing	Commenced construction	Emergency or Non-emergency	HP	Requirements	Stack Testing	Monitoring	Recordkeeping	Reporting
Existing	before 6/12/2006	Emergency, used for DR	≤ 100	maintenance requirements	N/A	N/A	maintenance; hours of operation	N/A
Existing		Black Start	all	maintenance requirements	N/A	N/A	maintenance	N/A
New	on or after 12/19/2002	Non-Emergency, not limited use	> 500 HP	emission limit (70% CO reduction or 580 ppbvd formaldehyde), probably requires control; comply with NSPS 4I, if new enough	Every 6 months (note 1)	control device parameters	maintenance, test results	initial notification, test reports, semi-annual compliance report
New	on or after 12/19/2002	Non-Emergency, limited use	> 500 HP	comply with NSPS 4I, if new enough	N/A	N/A	hours of operation	initial notification
New	on or after 12/19/2002	Emergency, not used for DR	> 500 HP	comply with NSPS 4I, if new enough	N/A	N/A	hours of operation	initial notification
New	on or after 12/19/2002	Emergency, used for DR	> 500 HP	comply with NSPS 4I, if new enough; ULSD (starting 1/1/15)	N/A	N/A	hours of operation	initial notification; annual operating hours report (first report due 3/31/16)
New	on or after 6/12/2006	All	≤ 500 HP	comply with NSPS 4I	N/A	N/A	N/A	N/A

NOTE:

1. Semiannual testing can change to annual, after two tests show compliance.
2. All non-exempt engines are required to minimize idle time; startup time not to exceed 30 minutes.
3. For this summary, “used for DR” means an engine that operates or is contractually obligated to be available for more than 15 hours per calendar year for emergency demand response or voltage sag, or that operates at all for local reliability purposes.

Table 2. Area Source Compression Ignition (CI) Engines - Diesel (and Dual Fuel if 2% or less Diesel)

New or Existing	Commenced construction	Emergency or Non-emergency	HP	Requirements	Stack Testing	Monitoring	Recordkeeping	Reporting
Existing	before 6/12/2006	Non-Emergency, not limited use (≥ 100 hr/yr)	> 500 HP	emission limit (70% CO reduction or 23 ppmvd CO), probably requires control; crankcase emission controls; ULSD	Every 3 years	control device parameters	maintenance, test results	initial notification, test reports, semi-annual compliance report
Existing	before 6/12/2006	Non-Emergency, limited use (< 100 hr/yr)	> 500 HP	emission limit (70% CO reduction or 23 ppmvd CO), probably requires control; crankcase emission controls; ULSD	Every 5 years	control device parameters	maintenance, test results, hours of operation	initial notification, test reports, annual compliance report
Existing	before 6/12/2006	Non-Emergency	300 < HP ≤ 500	emission limit (70% CO reduction or 49 ppmvd CO), probably requires control; crankcase emission controls; ULSD	One-time	N/A	maintenance	initial notification, test reports, semi-annual compliance report (annual, if limited use)
Existing	before 6/12/2006	Non-Emergency	≤ 300	Maintenance requirements	N/A	N/A	maintenance	N/A
Existing	before 6/12/2006	Emergency, not used for DR	all	Maintenance requirements	N/A	N/A	maintenance; hours of operation	N/A
Existing	before 6/12/2006	Emergency, used for DR	> 100 HP	Maintenance requirements; ULSD (starting 1/1/15)	N/A	N/A	maintenance; hours of operation	Annual operating hours report (first report due 3/31/16)
Existing	before 6/12/2006	Emergency, used for DR	≤ 100	Maintenance requirements	N/A	N/A	maintenance; hours of operation	N/A
Existing	before 6/12/2006	Emergency, at a residential, institutional, or commercial facility; not used for DR	all	Exempt, if engine meets operating restrictions for emergency engines and is not used for DR	N/A	N/A	hours of operation	N/A
Existing	before 6/12/2006	Black Start	all	Maintenance requirements	N/A	N/A	maintenance	N/A
New	on or after 6/12/2006	all	all	comply with NSPS 4I	N/A	N/A	N/A	N/A

NOTE:

1. All non-exempt engines are required to minimize idle time; startup time not to exceed 30 minutes.
2. For this summary, “used for DR” means an engine that operates or is contractually obligated to be available for more than 15 hours per calendar year for emergency demand response or voltage sag, or that operates at all for local reliability purposes.

Table 3 Major Source Spark Ignition (SI) Engines - Gasoline, Natural Gas, LPG, (and Dual Fuel if 2% or less Diesel)

New or Existing	Commenced construction	Emergency or Non-emergency	HP	Requirements	Stack Testing	Monitoring	Recordkeeping	Reporting
New or Existing		Non-Emergency, 4SRB	> 500 HP	emission limit (76% formaldehyde reduction or 350 ppbvd formaldehyde), probably requires control	One-time (note 4)	control device parameters	maintenance, test results	initial notification, test reports, semi-annual compliance report
Existing	before 12/19/2002	Any 2SLB or 4SLB	> 500 HP	None	N/A	N/A	N/A	N/A
Existing	before 6/12/2006	Non-Emergency, 2SLB	100 ≤ HP ≤ 500	emission limit (225 ppmvd CO), should not require control	One-time	N/A	maintenance, test results	initial notification, test reports, semi-annual compliance report
Existing	before 6/12/2006	Non-Emergency, 4SLB	100 ≤ HP ≤ 500	emission limit (47 ppmvd CO), probably requires control	One-time	N/A	maintenance, test results	initial notification, test reports, semi-annual compliance report
Existing	before 6/12/2006	Non-Emergency, 4SRB	100 ≤ HP ≤ 500	emission limit (10.3 ppmvd formaldehyde), probably requires control	One-time	N/A	maintenance, test results	initial notification, test reports, semi-annual compliance report
Existing	before 6/12/2006	Non-Emergency, landfill/digester gas-fired	100 ≤ HP ≤ 500	emission limit (177 ppmvd CO)	One-time	N/A	maintenance, test results	initial notification, test reports, semi-annual compliance report
Existing	before 6/12/2006	Non-Emergency	< 100	maintenance requirements	N/A	N/A	maintenance	N/A
Existing	before 12/19/2002	Emergency, not used for DR	> 500	None	N/A	N/A	hours of operation	N/A
Existing	before 12/19/2002	Emergency, used for DR	> 500	Unclear whether maintenance requirements apply	N/A	N/A	hours of operation	Annual operating hours report, starting with 2015
Existing	before 12/19/2002	Limited use (< 100 hr/yr)	> 500	None	N/A	N/A	hours of operation	N/A
Existing	before 6/12/2006	Emergency	≤ 500	maintenance requirements	N/A	N/A	maintenance, hours of operation	N/A
Existing		Black Start	all	maintenance requirements	N/A	N/A	maintenance	N/A
Existing	before 12/19/2002	Landfill/Digester gas > 10% of annual heat input	> 500	None	N/A	N/A	N/A	N/A
New	on or after 6/12/2006	4SLB (manufactured before 1/1/08)	250-500 HP	None	N/A	N/A	N/A	N/A

New or Existing	Commenced construction	Emergency or Non-emergency	HP	Requirements	Stack Testing	Monitoring	Recordkeeping	Reporting
New	on or after 6/12/2006	Non-emergency, 4SLB (manufactured after 1/1/08)	250-500 HP	emission limit (93% CO reduction or 14 ppmvd formaldehyde), probably requires control	Every 6 months (note 1)	control device parameters	maintenance, test results	initial notification, test reports, semi-annual compliance report
New	on or after 12/19/2002	Non-Emergency, 4SLB	> 500 HP	emission limit (93% CO reduction or 14 ppmvd formaldehyde), probably requires control	Every 6 months (note 1)	control device parameters	maintenance, test results	initial notification, test reports, semi-annual compliance report
New	on or after 12/19/2002	Non-Emergency, 2SLB	> 500 HP	emission limit (58% CO reduction or 12 ppmvd formaldehyde), probably requires control	Every 6 months (note 1)	control device parameters	maintenance, test results	initial notification, test reports, semi-annual compliance report
New	on or after 6/12/2006	4SRB or 2SLB	≤ 500	comply with NSPS 4J, if new enough	N/A	N/A	N/A	N/A
New	on or after 6/12/2006	4SLB	< 250	comply with NSPS 4J, if new enough	N/A	N/A	N/A	N/A
New	on or after 12/19/2002	Emergency or limited use	> 500	comply with NSPS 4J, if new enough	N/A	N/A	hours of operation	initial notification
New	on or after 6/12/2006	Emergency or limited use	≤ 500	comply with NSPS 4J, if new enough	N/A	N/A	hours of operation	N/A
New	on or after 6/12/2006	Landfill/Digester gas > 10% of annual heat input	≤ 500	comply with NSPS 4J, if new enough	N/A	N/A	N/A	N/A
New	on or after 12/19/2002	Landfill/Digester gas > 10% of annual heat input	> 500 HP	separate fuel meters; comply with NSPS 4J, if new enough	N/A	N/A	daily fuel usage	initial notification; annual fuel usage report

Note:

1. Semiannual testing can change to annual, after two tests show compliance.
2. All non-exempt engines are required to minimize idle time; startup time not to exceed 30 minutes.
3. For this summary, “used for DR” means an engine that operates or is contractually obligated to be available for more than 15 hours per calendar year for emergency demand response or voltage sag, or that operates at all for local reliability purposes.
4. If > 5,000 HP complying with formaldehyde reduction, semi-annual testing.

Table 4 Area Source Spark Ignition (SI) Engines - Gasoline, Natural Gas, LPG (and Dual Fuel if 2% or less Diesel)

New or Existing	Commenced construction	Emergency or Non-emergency	HP	Requirements	Stack Testing	Monitoring	Recordkeeping	Reporting
Existing	before 6/12/2006	Non-Emergency, 4SRB, not remote, operated > 24 hr/yr	> 500 HP	control with NSCR; no specific emission limit, but test result must demonstrate 75% CO reduction, 270 ppmvd CO, or 30% THC reduction	initial 3-run test; annual 1-run test; 15-minute runs okay for all tests	CPMS for catalyst inlet temp (Note 1)	maintenance, test results	Initial notification; test reports; semi-annual compliance report
Existing	before 6/12/2006	Non-Emergency, 4SLB, not remote, operated > 24 hr/yr	> 500 HP	control with oxidation catalyst; no specific emission limit, but test result must demonstrate 93% CO reduction or 47 ppmvd CO	initial 3-run test; annual 1-run test; 15-minute runs okay for all tests	CPMS for catalyst inlet temp (Note 1)	maintenance, test results	Initial notification; test reports; semi-annual compliance report
Existing	before 6/12/2006	Non-Emergency, 4SRB or 4SLB, remote	> 500 HP	maintenance requirements	N/A	N/A	maintenance; justification for "remote" designation	N/A
Existing	before 6/12/2006	Non-Emergency, 4SRB or 4SLB, operated 24 hr/yr or less	> 500 HP	maintenance requirements	N/A	N/A	maintenance, hours of operation	N/A
Existing	before 6/12/2006	Non-Emergency, 2SLB	all	maintenance requirements	N/A	N/A	maintenance	N/A
Existing	before 6/12/2006	Non-Emergency, 4SRB or 4SLB	≤ 500	maintenance requirements	N/A	N/A	maintenance	N/A
Existing	before 6/12/2006	Black Start	all	maintenance requirements	N/A	N/A	maintenance	N/A
Existing	before 6/12/2006	Emergency, not used for DR	all	maintenance requirements	N/A	N/A	maintenance, hours of operation	N/A
Existing	before 6/12/2006	Emergency, used for DR	> 100 HP	maintenance requirements	N/A	N/A	maintenance, hours of operation	Annual operating hours report, starting with 2015
Existing	before 6/12/2006	Emergency, used for DR	≤ 100	maintenance requirements	N/A	N/A	maintenance, hours of operation	N/A
Existing	before 6/12/2006	Emergency, at a residential, institutional, or commercial facility; not used for DR	all	Exempt, if engine meets operating restrictions for emergency engines and is not used for DR	N/A	N/A	hours of operation	N/A

New or Existing	Commenced construction	Emergency or Non-emergency	HP	Requirements	Stack Testing	Monitoring	Recordkeeping	Reporting
Existing	before 6/12/2006	Non-Emergency, combusting landfill/digester gas > 10% annual heat input	all	maintenance requirements	N/A	N/A	maintenance	N/A
New	on or after 6/12/2006	all	all	comply with NSPS 4J, if new enough	N/A	N/A	N/A	N/A

NOTE:

1. Or, equipment to shut down engine if catalyst inlet exceeds 1250 F.
2. All non-exempt engines are required to minimize idle time; startup time not to exceed 30 minutes.
3. For this summary, “used for DR” means an engine that operates or is contractually obligated to be available for more than 15 hours per calendar year for emergency demand response or voltage sag, or that operates at all for local reliability purposes.