

Annual Combustion Adjustments

NJAC 7:27-19

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Annual Combustion Adjustment (ACA)

- What it is
- What it is not



Affected Equipment

- Electric Generating Units
- Asphalt Plants
- Glass Plants
- Turbines
- Duct burners
- Reciprocating Engines
- Boilers
- Indirect heat exchangers

Boilers at Electric Generating Units

- NJAC 7:27-19.4c requires ACA by May 1 of each year...or within 7 days of start up if unit has not operated in the calendar year



Asphalt Plants

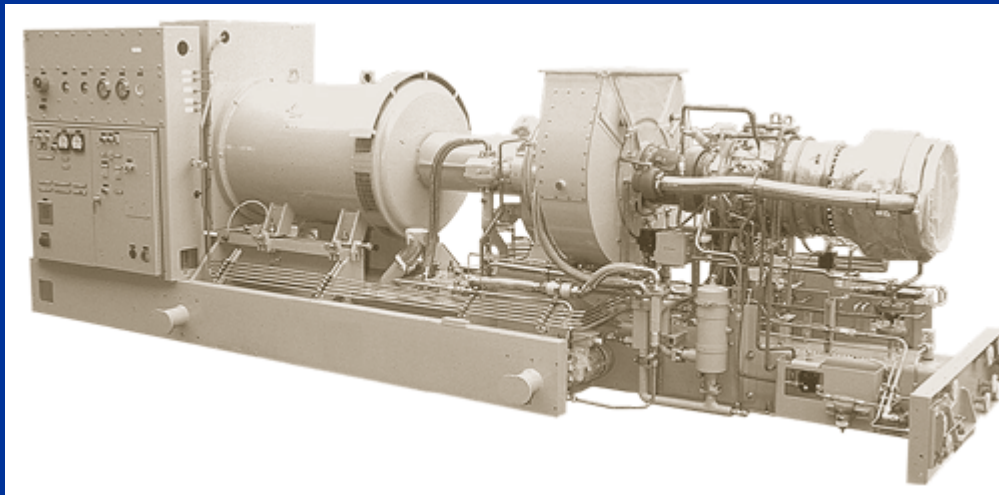
- NJAC 7:27-19.9b requires ACA annually, but does not include a reporting requirement.



Glass Plants

- NJAC 7:27-19.10 requires ACA by May 1 of each year...or within 7 days of start up if unit has not operated in the calendar year

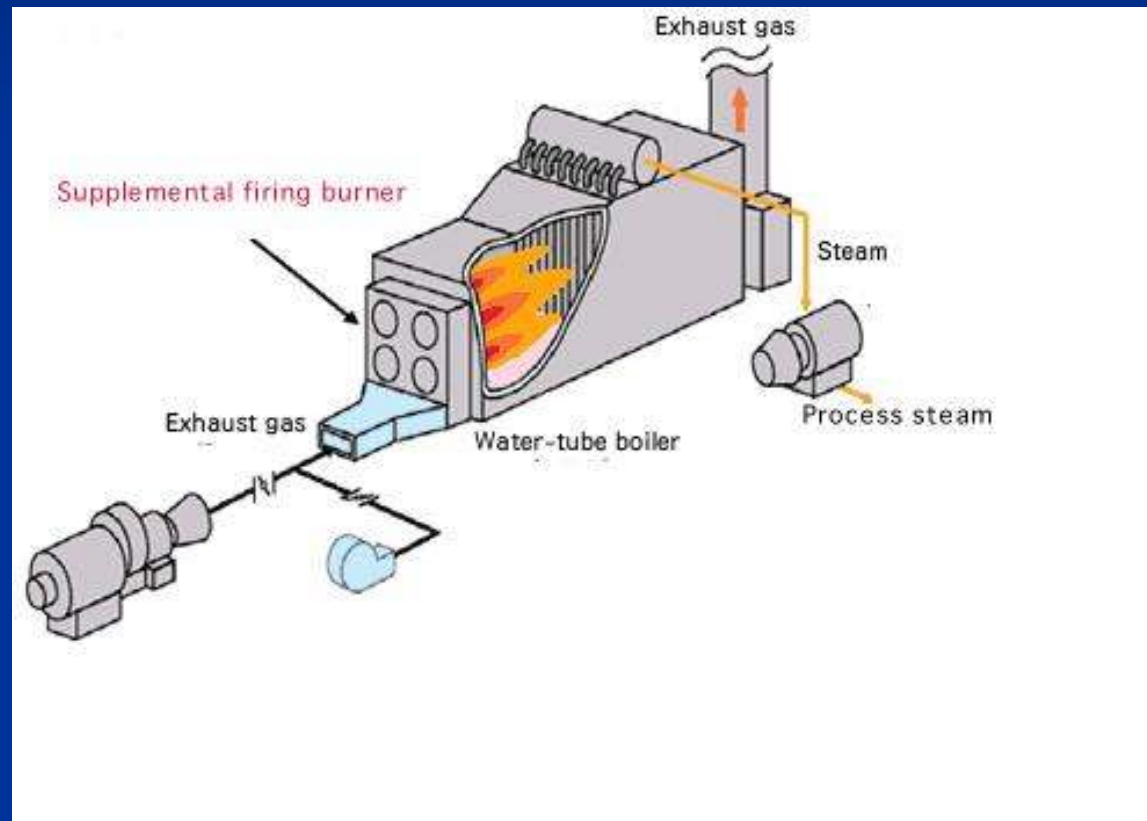
Turbines



Turbine details

- Combustion adjustments required under NJAC 7:27-19.5(e) for turbines greater than 25 MMBTU/hr.
- Applicable Date – 2005 (> 30 MMBTU/Hr.)
 - 2007 (> 25 MMBTU/Hr.)
- Frequency – as per manufacturer's recommendation
- How to conduct ? – as per mfg. recommended procedure

Turbine with Duct Burner



What about duct burners ?

- NJDEP interpretation is the duct burner is part of the turbine and must only be adjusted as a turbine.....
- Reality is some Title V permits treat it separately, and an individual discussion must be held on those Permits.

Reciprocating Engines

- NJAC 7:27-19.8f requires ACA annually for any reciprocating engine that produces electricity, but does not include a reporting requirement.
- Conduct as per manufacturer's recommendation

Boiler Applicability

- 1. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least five million BTU per hour, but less than 10 million BTU per hour, in the same quarter of each calendar year, beginning in 2010;
- 2. least 10 million BTU per hour, but less than 20 million BTU per hour, in the same quarter of each calendar year beginning in 2008...
- 3. at least 20 million BTU per hour or greater, in the same quarter of each calendar year beginning in 2007.

BOILER SUMMARY

Boiler Size	ACA Submit Report <i>Electronically</i>	
■ ≥ 5 to <10 MM	2010	2012
■ ≥ 10 to <20 MM	2008	2010
■ 20 MM+	2007	2009

Indirect Heat Exchangers

"Indirect heat exchanger" means equipment in which heat from the combustion of fuel is transferred by conduction through a heat-conducting material to a substance being heated, so that the latter is not contacted by, and adds nothing to, the products of combustion. Examples of indirect heat exchangers include boilers, duct burners and process heaters.

Indirect Heat Exchangers

- Must be conducted in the same calendar quarter each year
- Various and diverse equipment can be included in this definition
- Example – biomass furnace
- May not fit neatly within requirements

Operational questions

- At what firing rate must I conduct the ACA ?
 - Required to be at one firing rate only, preferably the firing rate that you most commonly operate at.
- What about 95 % of maximum throughput ?
 - No, NOT a stack emission test

Firing Rates

- Boiler was tested/adjusted at multiple firing rates, which do I report
- Report the most common firing rate
- Do NOT submit multiple reports for multiple firing rates
- Do NOT average all the results for one submission
- If conducting multiple adjustments per year, only ONE counts as the official ACA

Duration of the ACA ?

- No specific sampling duration specified
- Duration must be long enough to obtain the necessary data and determine that readings are stable.

Contractor necessary ?

- No, anyone capable of performing the adjustment as specified and taking necessary measurements, may perform the ACA.
- There is no certification necessary or available to conduct these tests

Use of CEMS to demonstrate ACA

- Data from an approved CEMS is acceptable in demonstrating emission values.

Procedures for conducting ACA

- Two requirements
 - Adjusting the boiler - NJAC 7:27-19.16a
 - Measurement of emissions- NJAC 7:27-19.16b

Beyond what is specified in the rule, there are no specific protocol methodologies

There are no specific test methodologies, although these were previously considered

Specific Analyzer ?

- No specific monitor
- Guidance provided in NJDEP – BTS Tech Manual #1005
- <http://www.state.nj.us/dep/bts/pdf/Techmanuals/1005.pdf>
- Indicates “capable of meeting” EPA Conditional Test Method 034

Minimal usage concerns

- The boiler did not operate in this year.....
- The boiler need not conduct an ACA for that year
- My boiler did not operate during the testing quarter
- ACA required within 30 days of restarting the boiler
- The boiler ran a very brief time period in the calendar year
- The boiler need to be tested (No threshold of operations)

Secondary Fuels

- Must a dual fuel fired unit conduct a combustion adjustment on each fuel ?
- If the secondary fuel is used more than 500 hours per year, then an annual combustion adjustment must be conducted.
- However, a report need not be submitted, but DO maintain the records on-site.

Boiler fails to meet standards

- If the boiler fails to meet the standard, you must take reasonable steps to reduce emissions.
- Record must be kept detailing what was conducted
- Any exceedance during the adjustment process is not an exceedance

Quantifying Fuel Usage on report

- Does air permit require fuel meter ?
 - If no, then approximate usage for *last 12 calendar months* is allowed
 - No need to purchase a fuel meter if not required by air permit
- Air permit requires a fuel meter
 - Exact fuel usage for *last 12 months* must be reported and is enforceable
 - All fuel usage (primary and secondary) must be included on the report

Conflict of data upon submission

- Certain scenarios (Alternate Emission Limits for example) incorrectly shows facility out of compliance
- Reluctance to certify a report indicating non-compliance when facility is actually in compliance
- Solution- submit on PAPER to the Department with justification and certifications

Non-compliance discovery at Title V sites

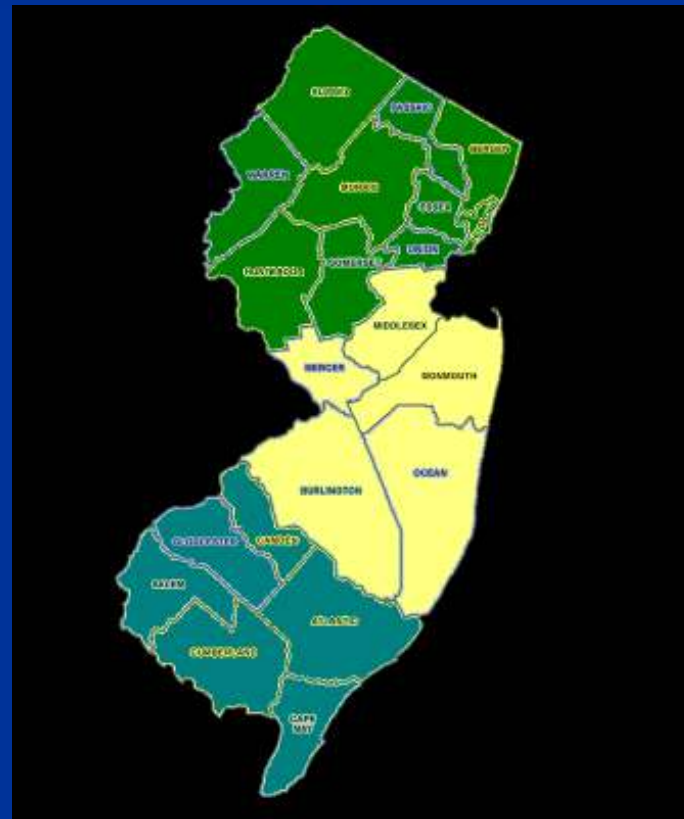
- What if additional non-compliance was discovered during the ACA – for example fuel-use exceedance, emissions exceedance, conducted ACA late, failure to submit ACA online report, etc
 - Major Title V facilities that experience any non-compliance related to their ACA must always include those events in their Title V Annual Compliance Certifications.

Non-compliance discovery at Title V sites

- Six Month Deviation reports
 - If you already reported the non-compliance in the online ACA Report, it is not required to be in the 6 Month Deviation Report
 - If you did not yet report the non-compliance in the online ACA Report, you should include it in the 6 Month Deviation Report.

Further Resources

- Contact Regional Enforcement Office
- <http://www.state.nj.us/dep/aqpp/adjustment.htm>



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