TESTING AND MONITORING RECOMMENDATIONS FOR EXISTING COMBUSTION EQUIPMENT [1]

The use of the Testing and Monitoring Guidance chart is primarily to update the periodic stack testing and the monitoring requirements of existing equipment for which a minor or significant modification has been submitted and to update the stack testing and the monitoring requirements at the time of operating permit renewal. Any initial stack testing for a new or modified equipment must be determined based on the equipment size, fuel use, and the pertinent applicable requirements.

NATURAL GAS

Size (MMBTU/HR)	Monitoring Recommendation [3]	Frequency of Stack Tests
1 ≤ heat input <10	Combustion Process Adjustment [5] (≥ 5 MM BTU/hr)	None
10 ≤ heat input <20	Combustion Process Adjustment [5]	None
20 ≤ heat input <50	Combustion Process Adjustment [5]	None
50 ≤ heat input <100	Combustion Process Adjustment [5]	None
100 ≤ heat input <250	Combustion Process Adjustment [5], Stack Test (CO & NO_X)	Every 5 years
250 ≤ heat input	Combustion Process Adjustment [5], Stack Test (PM10) [6, 7, 8] & CEM (NO_X, CO, & O_2)	Every 5 years for PM10 only

DISTILLATE OIL

Size (MMBTU/HR)	Monitoring Recommendation [3]	Frequency of Stack Tests
1 ≤ heat input <10	Combustion Process Adjustment [5] (≥ 5 MM BTU/hr)	None
10 ≤ heat input <20	Combustion Process Adjustment [5]	None
20 ≤ heat input <50	Combustion Process Adjustment [5]	None
50 ≤ heat input <100	Combustion Process Adjustment [5] & Stack Test [9, 10] (TSP & PM10)	Every 5 years for TSP and PM10 only
100 ≤ heat input <250	Combustion Process Adjustment [5], Stack Test [9, 10] (VOC, CO, NO_X & TSP & PM10 [6, 7, 8]) & COM [11, 12]	Every 5 years
250 ≤ heat input	Combustion Process Adjustment [5], Stack Test [9, 10] (VOC, TSP & PM10 [6, 7, 8]), COM [11, 12] & CEM (NO_X, CO & O_2) [11]	Every 5 years for TSP and PM10 only

OTHER COMERCIAL LIQUID FUELS (Nos. 4 & 6)

Size (MMBTU/HR)	Monitoring Recommendation [3]	Frequency of Stack Tests
1 ≤ heat input <10	Combustion Process Adjustment [5] (≥ 5 MM BTU/hr), Annual Fuel Sulfur Test, Stack Test [9, 13] (VOC, CO, NO_X, TSP & PM10)	Every 5 years
10 ≤ heat input <20	Combustion Process Adjustment [5], Annual Fuel Sulfur Test, Stack Test [9, 13] (VOC, CO, NO_X, TSP & PM10)	Every 5 years
20 ≤ heat input <50	Combustion Process Adjustment [5], Annual Fuel Sulfur Test, Stack Test [9, 13] (VOC, CO, NO_X, TSP & PM10) & COM if > 30 MMBTU/HR [11]	Every 5 years
50 ≤ heat input <100	Combustion Process Adjustment [5], Annual Fuel Sulfur Test, Stack Test [9, 13] (VOC, CO, NO_X, TSP & PM10) & COM [11]	Every 2 years (twice per permit term) [14]
100 ≤ heat input <250	Combustion Process Adjustment [5], Annual Fuel Sulfur Test, Stack Test [9, 13] (VOC, CO, NO_X, TSP, & PM10 [6, 7, 8]), COM [11], CEM (NO_X) [11] & Monthly fuel samples for metals [15]	Every year [14]
250 ≤ heat input	Annual Tune-up, Annual Fuel Sulfur Test, Stack Test [9, 13] (VOC, CO, NO_X, TSP & PM10 [6, 7, 8]), COM [11], CEM (NO_X, CO & O_2) [11] & Monthly fuel samples for metals [15]	Every year [14]

[1] This chart applies to boilers and other combustion equipment, including Heat Recovery Steam Generator (HRSG) with duct firing capability that operates in Fresh Air Fired mode without the turbine in operation.

[2] Intentionally not used.

[3] When only stack testing is required, CEMs can replace stack testing if the CEM monitors and records units similar to stack testing (e.g. stack testing requires 2.5 lb/hr of VOC and CEM also monitors VOC in lb/hr continuously).

[4] Intentionally not used.

[5] The adjustment of the combustion process should be carried out according to the manufacturer's recommended procedures and maintenance schedule pursuant to N.J.A.C. 7:27-19.7 and 19.16.

[6] Initial PM-10 (including condensible) testing is required for all combustion equipment greater than 250 MMBTU/Hr capacity combusting gaseous fuel. Subsequent PM-10 stack testing requirements will be determined on a case-by-case basis considering results of the initial stack tests.

[7] Initial and once every 5 year stack emission testing for TSP and PM10 (including condensibles) is required for combustion equipment > 100 MMBtu/hr capacity combusting oil and for combustion equipment > 250 MMBtu/hr capacity combusting gas. Note that testing is required for combustion equipment operating less than 500 hours per year.

[8] Initial and Annual stack emission testing for TSP and PM10 (including condensibles) is required for combustion equipment > 100 MMBtu/hr capacity combusting oil and for combustion equipment > 250 MMBtu/hr capacity combusting gas that operate more than 500 hours per year on oil.

[9] Stack testing for any operating scenario with N.J.A.C. 7:27-19.25, "Exemption for emergency use of fuel oil" is required when testing was not otherwise conducted for fuel oil OR when the fuel oil is used only under the "exemption for emergency use".

[10] A modified stack testing schedule may be written in the permit for #2 fuel oil for an operating scenario for N.J.A.C. 7:27-19.25, "Exemption for emergency use of fuel oil" ONLY if no other operating scenario for fuel oil exists and if testing was not otherwise required by Federal regulations.

[11] Not required if oil is backup fuel (use of oil limited to 500 hours per year) unless required by NSPS.

[12] COM: Installation and operation of a continuous opacity monitor is required if distillate oil operation exceeds 500 hours in a calendar year. See "Opacity Monitoring For Combustion Equipment".

[13] A modified stack testing schedule may be written in the permit if #4 or #6 fuel oil is not the primary fuel and if testing was not otherwise required by the Subchapter 8 permit or by Federal regulations. The modified schedule should not be offered to new operating scenarios for these fuels. Testing should be conducted to demonstrate initial compliance with the operating scenario.

[14] Every 5 years if oil is backup fuel.

[15] Analysis of monthly fuel oil samples (composited for the quarter) must be performed in each quarter fuel oil was burned. Fuel analysis is not required in the quarter fuel oil was not burned. Note that fuel oil sampling frequency remains monthly regardless.