

3745-103-66 **Test methods and procedures.**

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (C) of rule 3745-103-01 of the Administrative Code titled "Referenced materials."]

- (A) The owner or operator may use the following tests as a basis for the report required by paragraph (E)(7) of rule 3745-103-62 of the Administrative Code:
- (1) An ultimate analysis of coal using ASTM D3176-89, "Standard Practice for Ultimate Analysis of Coal and Coke;"
 - (2) A proximate analysis of coal using ASTM D3172-89, "Standard Practice for Proximate Analysis of Coal and Coke;" and
 - (3) Measure the coal mass flow rate to each individual burner using ASME performance test code 4.2, "Test Code for Coal Pulverizers" or ISO 9931, "Coal - Sampling of Pulverized Coal Conveyed by Gases in Direct Fired Coal Systems."
- (B) The owner or operator may measure and record the actual NO_x emission rate in accordance with the requirements of this part while varying the following parameters where possible to determine their effects on the emissions of NO_x from the affected boiler:
- (1) Excess air levels;
 - (2) Settings of burners or coal and air nozzles, including tilt and yaw, or swirl;
 - (3) For tangentially fired boilers, distribution of combustion air within the NO_x emission control system;
 - (4) Coal mass flow rates to each individual burner;
 - (5) Coal-to-primary air ratio (based on pound per hour) for each burner, the average coal-to-primary air ratio for all burners, and the deviations of individual burners' coal-to-primary air ratios from the average value; and
 - (6) If the boiler uses varying types of coal, the type of coal. Provide the results of proximate and ultimate analyses of each type of as-fired coal.
- (C) In performing the tests specified in paragraph (A) of this rule, the owner or operator shall begin the tests using the equipment settings for which the NO_x emission control system was designed to meet the NO_x emission rate guaranteed by the primary NO_x

emission control system vendor. These results constitute the baseline controlled condition.

- (D) After establishing the baseline controlled condition under paragraph (C) of this rule, the owner or operator may:
- (1) Change excess air levels plus or minus five per cent from the baseline controlled condition to determine the effects on emissions of NO_x , by providing a minimum of three readings (e.g., with a baseline reading of twenty per cent excess air, excess air levels may be changed to nineteen per cent and twenty-one per cent);
 - (2) For tangentially fired boilers, change the distribution of combustion air within the NO_x emission control system to determine the effects on NO_x emissions by providing a minimum of three readings, one with the minimum, one with the baseline, and one with the maximum amounts of staged combustion air; and
 - (3) Show that the combustion process within the boiler is optimized (e.g., that the burners are balanced).

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