*** DRAFT – NOT FOR FILING ***

3745-110-01 **Definitions.**

[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 the last paragraph of this rule titled "Incorporation by reference."]

(A) Except as otherwise provided in this rule, the definitions in rule 3745-15-01 of the Administrative Code shall apply to this chapter.

(B) As used in this chapter:

(1) "Affected facility" means any facility that meets the applicability requirements in rule 3745-110-02 of the Administrative Code.

(2) "Affected source" means any source which is located at any affected facility and is not exempt under paragraph (K) of rule 3745-110-03 of the Administrative Code.

(3) "Auxiliary boiler" means a boiler that produces steam and operates at a capacity factor of less than ten per cent.

(4) "Black start unit" means any electric generating unit operated only in the event of a complete loss of facility power.

(5) "British thermal unit" or "Btu" means the amount of heat required to raise one pound of water one degree Fahrenheit.

(6) "Capacity factor" means either the ratio of gross actual output to the gross rated output or the ratio of actual heat input to potential heat input for the period between April first and October thirty-first of any calendar year, expressed as a percentage.

(7) "Cell burner" means burner cells that consist of two or three circular burners combined into a vertically oriented assembly that creates a compact, intense flame.

(8) "Coal" means all solid fuels classified as anthracite, bituminous, sub-bituminous or lignite, as defined by ASTM D388-05, "Standard Specification for Classification of Coals by Rank."

(9) "Cyclone-fired boiler" means a boiler that combusts fuel in a horizontal water-cooled cylinder before releasing the combustion gases into the boiler.

(10) "Diesel fuel" means a low sulfur fuel oil of grades 1-D or 2-D, as defined by ASTM D975-05, "Standard Specification for Diesel Fuel Oils."

(11) "Distillate oil" means fuel oil that complies with the specifications for fuel oil number one or two, as defined by ASTM D396-05, "Standard Specification for Fuel Oils."

(12) "Dry bottom" means a boiler design in which the coal-fired unit is equipped with an ash disposal hopper bottom with sufficient cooling surface so that the ash particles impinging on the furnace walls or hopper bottom can be removed in a dry state.

(13) "Dual fuel" means a mixture of diesel fuel or distillate oil and gaseous fuels.

(14) "Gaseous fuels" means natural gas, blast furnace gas, coke oven gas or refinery fuel gas.

(15) "Industrial boiler" means a steam generating unit that generates steam to supply power and/or heat to an industrial, institutional, or commercial operation. This term does not include boilers that serve electrical generating units and cogeneration facilities.

(16) "Internal combustion engine" means any engine in which power, produced by heat and/or pressure developed in the engine cylinder(s) by burning a mixture of air and fuel (including diesel fuel), is subsequently converted to mechanical work by means of one or more pistons.

(17) "Large boiler" means an industrial boiler with a maximum heat input capacity greater than one hundred mmBtu/hr and equal to or less than two hundred fifty mmBtu/hr.

(18) "Lean burn engine" means an internal combustion engine where the amount of oxygen in the exhaust gases is one per cent or more, by weight.

(19) "Low NOx burner" means a burner designed to reduce flame turbulence by the mixing of fuel and air and by establishing fuel-rich zones for initial combustion, thereby reducing the formation of NOx.

(20) "Mid-size boiler" means an industrial boiler with a maximum heat input capacity greater than fifty mmBtu/hr and equal to or less than one hundred mmBtu/hr.

(21) "MmBtu/hr" means million British thermal units per hour.

(22) "Municipal solid waste" means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and

multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and similar establishments or facilities. Institutional waste includes material discarded by schools, hospitals, non-manufacturing facilities and other similar establishments or facilities. Household, commercial/retail, and institutional wastes do not include sewage, wood pallets, construction and demolition wastes, or motor vehicles (including motor vehicle parts or vehicle fluff). Municipal solid waste does include motor vehicle maintenance materials, limited to vehicle batteries, used motor oil, and tires. Municipal solid waste does not include wastes that are solely segregated medical wastes. However any mixture of segregated wastes which contain more than thirty per cent medical waste discards is considered to be municipal solid waste.

(23) "Municipal waste combustor" means any device that combusts any solid, liquid, or gasified municipal solid waste.

(24) "N/A" means not applicable.

(25) "Natural gas" means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.

(26) "Nitrogen oxides" or "NOx" means all oxides of nitrogen which are determined to be ozone precursors, including, but not limited to, nitrogen oxide and nitrogen dioxide, but excluding nitrous oxide, collectively expressed as nitrogen dioxide.

(27) "Oil" means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

(28) "Overfeed stoker-fired" means a boiler design that employs a moving grate assembly where the coal is fed into a hopper and then onto a continuous grate that conveys the coal into the furnace. As coal moves through the furnace, it passes over several air zones for staged burning.

(29) "Peaking unit" means any electric generating unit that operates at a capacity factor of less than ten per cent between April first and October thirty-first of any calendar year.

(30) "Potential to emit" means the maximum capacity of a facility or stationary source to emit NOx under its physical and operational design. Any physical or operational limitation on the capacity of the facility or stationary source to emit NOx, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed,

shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable or legally and practicably enforceable by the state, except as otherwise provided in rule 3745-21-11 of the Administrative Code.

(31) "Ppmvd" means parts per million by volume on a dry basis.

(32) "RACT" means the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

(33) "Research and development sources" means a research or laboratory facility the primary purpose of which is to conduct research and development into new processes and products, that is operated under the close supervision of technically trained personnel, and that is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a de-minimis manner.

(34) "Residual oil" means crude oil, fuel oil that does not comply with the specifications under the definition of "distillate oil," and all fuel oil numbers four, five, or six, as defined by ASTM D396-05, "Standard Specification for Fuel Oils."

(35) "Rich burn engine" means an internal combustion engine where the amount of oxygen in the engine exhaust gases is less than one per cent, by weight.

(36) "Small boiler" means an industrial boiler with a maximum heat input capacity greater than twenty mmBtu/hr and equal to or less than fifty mmBtu/hr.

(37) "Space heating unit " means any fuel burning equipment that is used only for space heating purposes during the period from November first through March thirty-first or during other periods of cold weather conditions.

(38) "Spreader stoker-fired" means a boiler design where mechanical or pneumatic feeders distribute coal uniformly over the surface of a moving grate.

(39) "Stand-by fuel burning equipment" means any fuel burning equipment which is used only as a direct substitution for other fuel burning equipment for a limited period due to unpredictable breakdown or failure, or routine scheduled maintenance of such other fuel burning equipment or its associated air pollution control system.

(40) "Start-up unit" means a unit operated only to start up larger electric generating units.

(41) "Stationary combustion turbine" means any simple cycle combustion turbine, regenerative cycle combustion turbine, or any combustion turbine portion of a combined cycle steam/electric generating system that is not self-propelled, but which may be mounted on a vehicle for portability.

(42) "Stationary internal combustion engine" means any reciprocating internal combustion engine that is not self propelled, but which may be mounted on a vehicle for portability.

(43) "Tangential-fired" means a furnace firing design where the burners are mounted at the corners of the furnace chamber.

(44) "Tune-up" means adjustments made to a burner or boiler in accordance with procedures supplied by the manufacturer (or approved specialist) to optimize the combustion efficiency.

(45) "Very large boiler" means an industrial boiler with a maximum heat input capacity greater than two hundred fifty mmBtu/hr.

(46) "Wall-fired" means a furnace firing design in which the burners are mounted in an array on one or more vertical walls, including:

(a) Opposed firing, where the burners are mounted on two opposite walls; and

(b) Single-wall firing, where the burners are mounted on only one wall.

[Comment: Wall-fired does not include cell burner configurations.]

(47) "Wet bottom" means a furnace design in which the coal-fired unit is equipped for slag disposal with a two-stage arrangement consisting of a chamber in the lower part of the furnace where the slag is deposited in a liquid state onto a collection surface, and a tank, containing water, into which the liquid slag is tapped.

(C) Incorporation by reference. This chapter includes references to certain matter or materials. The text of the incorporated materials is not included in the regulations contained in this chapter. The materials are hereby made a part of the regulations in this chapter. For materials subject to change, only the specific version specified in the regulation are incorporated. Material is incorporated as it exists on the effective date of this rule. Except for subsequent annual publication of existing (unmodified) Code of Federal Regulation compilations, any amendment or revision to a referenced document is not incorporated unless and until this rule has been amended to specify the new dates.

(1) Availability. The materials incorporated by reference are available as follows:

(a) American Society for Testing Materials (ASTM). Information and copies of documents may be obtained by writing to: "ASTM International, 100 Bar Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19426-2959." These documents are also available for purchase at www.astm.org. ASTM documents are also available for inspection and copying at most public libraries and "The State Library of Ohio."

(b) Code of Federal Regulations (CFR). Information and copies may be obtained by writing to: "Superintendent of Documents, Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954." The full text of the CFR is also available in electronic format at http://www.gpoaccess.gov/cfr/index.html. The CFR compilations are also available for inspection and copying at most public libraries and "The State Library of Ohio."

(c) Federal Register (FR). Information and copies may be obtained by writing to: "Superintendent of Documents, Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954." Online access to the Federal Register is available at http://www.gpoaccess.gov/nara/index.html . A copy of the Federal Register is also available for inspection and copying at most public libraries and "The State Library of Ohio."

(d) "Guidance for Estimating Capital and Annual Costs of Air Pollution Systems;" Ohio environmental protection agency Engineering Guide 46. Information and copies of this document may be obtained by writing to: "Ohio environmental protection agency, Division of air pollution control, 122 S. Front Street, Columbus, Ohio, 43215." This document is also available for viewing at http://www.epa.state.oh.us/dapc/engineer/eguides.html.

(2) Incorporated materials.

(a) 40 CFR Part 60; "Standards of Performance for New Stationary Sources;" as published in the July 1, 2006 Code of Federal Regulations.

(b) 40 CFR Part 60, Appendix F; "Quality Assurance Procedures;" 52 FR 21008, June 4, 1987; 52 FR 27612, July 22, 1987, as amended at 56 FR 5527, Feb. 11, 1991; 69 FR 1816, Jan. 12, 2004.

(c) 40 CFR Part 75; "Continuous emission monitoring;" as published in the July 1, 2005 Code of Federal Regulations.

(d) ASTM D388-05; "Standard Classification of Coals by Rank;" updated 2005.

(e) ASTM D396-05; "Standard specification for fuel oils;" updated 2005.

(f) ASTM D975-05; "Standard Specification for Diesel Fuel Oils;" updated 2005.

(g) "Clean Air Interstate Rule;" as published May 12, 2005 in volume 70 of the Federal Register, page 25162.

(h) "Guidance for Estimating Capital and Annual Costs of Air Pollution Systems;" Ohio environmental protection agency Engineering Guide 46; March 1983.

(i) Performance Specification 2; contained in 40 CFR Part 60, Appendix B; "Specifications and Test Procedures for SO2 and NOX Continuous Emission Monitoring Systems in Stationary Sources;" 48 FR 13327, Mar. 30, 1983 and 48 FR 23611, May 25, 1983, as amended at 48 FR 32986, July 20, 1983; 51 FR 31701, Aug. 5, 1985; 52 FR 17556, May 11, 1987; 52 FR 30675, Aug. 18, 1987; 52 FR 34650, Sept. 14, 1987; 53 FR 7515, Mar. 9, 1988; 53 FR 41335, Oct. 21, 1988; 55 FR 18876, May 7, 1990; 55 FR 40178, Oct. 2, 1990; 55 FR 47474, Nov. 14, 1990; 56 FR 5526, Feb. 11, 1991; 59 FR 64593, Dec. 15, 1994; 64 FR 53032, Sept. 30, 1999; 65 FR 62130, 62144, Oct. 17, 2000; 65 FR 48920, Aug. 10, 2000; 69 FR 1802, Jan. 12, 2004; 70 FR 28673, May 18, 2005.

(j) USEPA Method 7; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources;" as published in the July 1, 2006 Code of Federal Regulations

(k) USEPA Method 7a; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources-Ion chromatographic method ;" as published in the July 1, 2006 Code of Federal Regulations

(l) USEPA Method 7c; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources-Alkaline-permanganate/colorimetric method ;" as published in the July 1, 2006 Code of Federal Regulations

(m) USEPA Method 7d; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources-Alkaline-permanganate/ion chromatographic method ;" as published in the July 1, 2006 Code of Federal Regulations

(n) USEPA Method 7e; contained in 40 CFR Part 60, Appendix A; "Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Procedure);" as published in the July 1, 2006 Code of Federal Regulations

*** DRAFT – NOT FOR FILING ***

3745-110-02 **Applicability.**

(A) Unless exempted under paragraph (J) of rule 3745-110-03 of the Administrative Code, the requirements of this chapter shall apply to any stationary source of NOx emissions that meets one of the following conditions:

(1) Existing sources.

(a) The source is, as defined in rule 3745-110-01 of the Administrative Code, a very large boiler, large boiler, mid-size boiler, small boiler, stationary combustion turbine, or stationary internal combustion engine; or it is located at a facility that emits or has the potential to emit a total of more than one hundred tons per year of NOx emissions from all sources at that facility, including all sources that are exempt under rule 3745-110-03 of the Administrative Code; and

(b) The source is located in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, or Summit County.

(2) New sources.

(a) The source is, as defined in rule 3745-110-01 of the Administrative Code, a very large boiler, large boiler, mid-size boiler, small boiler, stationary combustion turbine, or stationary internal combustion engine; and

(b) Except where the emission limitations and requirements of an applicable new source performance standard under 40 CFR Part 60 are more stringent than the emission limitations and requirements of this chapter, any new or modified source issued a permit-to-install after January 1, 2008, shall comply with the requirements of this chapter.

[Comment: If a new source performance standard is determined to be more stringent than the requirements of this chapter, the new source described under this paragraph shall comply with the new source performance standards in lieu of the requirements of this chapter].

*** DRAFT – NOT FOR FILING ***

3745-110-03 **RACT requirements and/or limitations for emissions of NOx from stationary sources.**

[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 the last paragraph in rule 3745-110-01 of the Administrative Code titled "Incorporation by reference."]

(A) Small boilers.

The owner or operator of a small boiler must annually perform a tune-up and maintain, in a permanently bound log book, or other format approved in writing by the director the following information:

(1) The date of the last tune-up;

(2) The name, title and affiliation of the person who performed the tune-up and made any adjustments; and

(3) Any other information which the Ohio environmental protection agency may require as a condition of approval of any permit for the boiler.

(B) Mid-size boilers.

Except as otherwise provided in paragraphs (I) and (J) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a mid-size boiler shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

-Emissions limitations [pounds of NOx emissions per mmBtu]-

Fuel Type	Tangential-fired	Wall-fired	Cyclone-fired	Spreader Stoker-fired	Overfeed Stoker-fired
Gas Only	0.10	0.10	N/A	N/A	N/A
Distillate Oil	0.12	0.12	0.12	N/A	N/A
Residual Oil	0.23	0.23	0.23	N/A	N/A
Coal(Wet Bottom)	0.30	0.30	0.30	N/A	N/A
Coal(Dry Bottom)	0.30	0.30	0.30	0.30	0.30

(C) Large boilers.

Except as otherwise provided in paragraphs (I) and (J) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a large boiler shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

-Emissions Limitations [pounds of NOx emissions per mmBtu]-

Fuel Type	Tangential-fired	Wall-fired	Cyclone-fired	Spreader Stoker-fired	Overfeed Stoker-fired
Gas Only	0.10	0.10	N/A	N/A	N/A
Distillate Oil	0.12	0.12	0.12	N/A	N/A
Residual Oil	0.23	0.23	0.23	N/A	N/A
Coal(Wet Bottom)	0.30	0.30	0.30	N/A	N/A
Coal(Dry Bottom)	0.30	0.30	0.30	0.30	0.30

(D) Very large boilers.

Except as otherwise provided in paragraphs (I) and (J) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a very large boiler shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

-Emissions Limitations [pounds of NOx emissions per mmBtu]-

Fuel Type	Tangential-fired	Wall-fired	Cyclone-fired	Spreader Stoker-fired	Overfeed Stoker-fired
Gas Only	0.10	0.10	N/A	N/A	N/A
Distillate Oil	0.12	0.12	0.12	N/A	N/A
Residual Oil	0.23	0.23	0.23	N/A	N/A
Coal(Wet Bottom)	0.30	0.30	0.30	N/A	N/A
Coal(Dry Bottom)	0.30	0.30	0.30	0.30	0.30

(E) Stationary combustion turbine:

Except as otherwise provided in paragraphs (I) and (J) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a stationary combustion turbine shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

(1) Simple cycle turbines.

(a) Less than 3.5 megawatts.

(i) 150.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical generation.

(ii) 200.0 ppmvd corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel, for both mechanical drive and electrical generation.

(b) 3.5 megawatts up to, and including 25.0 megawatts.

(i) 42.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical generation.

(ii) 96.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel, for both mechanical drive and electrical generation.

(c) Greater than 25.0 megawatts and less than 50.0 megawatts.

(i) 42.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.

(ii) 96.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.

(d) Equal to or greater than 50.0 megawatts.

(i) 42.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.

(ii) 96.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.

(2) Combined cycle turbines.

(a) Less than 3.5 megawatts.

(i) 150.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical generation.

(ii) 200.0 ppmvd corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel, for both mechanical drive and electrical generation

(b) 3.5 megawatts up to, and including 25.0 megawatts.

(i) 42.0 ppmvd, corrected to fifteen percent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical generation.

(ii) 96.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel, for both mechanical drive and electrical generation.

(c) Greater than 25.0 megawatts and less than 50.0 megawatts.

(i) 42.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.

(ii) 96.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.

(d) Equal to or greater than 50.0 megawatts.

(i) 42.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.

(ii) 96.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.

(F) Stationary internal combustion engine.

Except as otherwise provided in paragraphs (I) and (J) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a stationary internal combustion engine shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

(1) For rich burn engines which burn only gaseous fuels, 3.0 grams per horsepower-hour for engines which are greater than two hundred horsepower.

(2) For lean burn engines which burn only gaseous fuels, 3.0 grams per horsepower-hour for engines which are greater than two hundred horsepower.

(3) For engines which burn only diesel fuel or distillate oil, 3.0 grams per horsepower-hour for engines which are greater than two hundred horsepower.

(4) For engines which burn dual fuels, 3.0 grams per horsepower-hour for engines which are greater than two hundred horsepower.

(G) The emissions limits specified in paragraphs (A) to (F) or pursuant to paragraph (I) of this rule shall be based on the following:

(1) A one-hour average of three stack test runs if stack testing is used to demonstrate compliance; or

(2) A twenty-four-hour daily heat input-weighted average if a continuous emissions monitor is used to demonstrate compliance. A thirty-day rolling heat input-weighted average emission rate may be used to demonstrate compliance with the appropriate emission limit from October first to April thirtieth.

(a) Determine the twenty-four-hour daily heat input-weighted average NOx emission rate based on the heat input-weighted average of the block hourly arithmetic average emission rates during each twenty-four-hour daily period from twelve a.m. to twelve a.m. the following day using continuous emissions monitor data. The block hourly heat input-weighted average emission rate must be calculated for each one-hour period starting with the period twelve a.m. to one a.m. and continuing through until the last period eleven p.m. to twelve a.m.; or, starting with the period twelve p.m. to one p.m. and continuing through the last period eleven a.m. to twelve p.m. The thirty-day rolling heat input-weighted average must be the average of the twenty-four-hour daily heat input-weighted NOx emission rate.

(H) Emission averaging programs.

(1) An owner or operator of a source which is subject to this chapter may propose an emission averaging program in lieu of the applicable emission limit(s) specified in paragraphs (A) to (F) of this rule or established in accordance with paragraph (I) of this rule. Any proposed emission averaging program shall comply with all of the following requirements:

(a) Specify the RACT emission limit for each source involved in the emission averaging program;

(b) Specify a clearly enforceable proposed emission limit for each source or group of sources involved in the emission averaging program;

(c) Result in actual reductions in NOx emissions that are equal to or greater than the actual emission reductions that would be required by this rule if an emission averaging program were not employed; and

(d) Achieve compliance with the proposed emission limits in accordance with rule 3745-110-04 of the Administrative Code.

(2) Any emission averaging program approved by the director shall be submitted to and approved by the United States environmental protection agency as a revision of the Ohio state implementation plan.

(I) RACT studies for stationary sources.

(1) For any affected source of NOx emissions at an affected facility that is not subject to the emissions limits specified in paragraphs (A) to (F) of this rule, or that is subject to the emissions limits specified in paragraphs (A) to (F) of this rule but the owner or operator claims that the applicable limit is technically infeasible and/or economically unreasonable (i.e., not cost-effective) to achieve, the owner or operator shall conduct a detailed engineering study to determine the technical and economic feasibility of reducing the NOx emissions and to define RACT for the source. The detailed engineering study shall be conducted by an engineering consulting firm or other person or persons experienced in the field of air pollution control, and it shall provide the following information:

(a) The complete facility name and address.

(b) The name, title, address and telephone number of the owner or operator's representative within the company who shall be the contact person for this facility regarding the engineering study and affected sources.

(c) The name, title, address and telephone number of the official who is responsible for approval of the engineering study.

(d) The standard industrial classification code number(s) which are applicable to the facility's operation.

(e) The following general information for each affected source:

(i) Ohio environmental protection agency application number(s);

(ii) Company identification;

(iii) Source description;

(iv) Month and year installed;

(v) Normal operating schedule (hours per day, days per week, and weeks per year);

(vi) Annual production rates for each of the three full calendar years preceding the effective date of this rule;

(vii) Average and maximum daily production rates for each of the three full calendar years preceding the effective date of this rule; and

(viii) The type of control equipment employed and the date installed.

(f) A plot plan which shows the general layout of the facility and the affected source(s).

(g) The following emissions data for each affected source:

(i) Average daily NOx emissions (pounds per day of operation) based upon the highest average daily production rate for each of the three full calendar years preceding the effective date of this rule or any other year that may be representative of the highest average daily emissions;

(ii) Maximum daily NOx emissions (pounds per day of operation) based upon the highest maximum daily production rate for each of the three full calendar years preceding the effective date of this rule or any year that may be more representative of the highest maximum daily emissions;

(iii) Annual NOx emissions (tons per year) based upon the highest annual production rate for each of the three full calendar years preceding the effective date of this rule or any year period that may be more representative of the annual production rate;

(iv) Documentation of the efficiency of the existing control equipment; and

(v) Documentation of any emissions testing which has been performed.

(h) A detailed discussion of the technical feasibility of employing each of the following types of control measures for each affected source (or combination of sources):

(i) Low-NOx burners;

(ii) Close coupled or separated over-fire ports;

(iii) Flue gas recirculation;

(iv) Burners out of service;

(v) Steam/water injection;

(vi) Dry low-NOx burners;

(vii) Ignition timing retard;

(viii) Separate circuit after-cooling;

(ix) Fuel emulsification;

(x) Selective noncatalytic reduction;

(xi) Nonselective catalytic reduction;

(xii) Selective catalytic reduction using urea ammonia and methane as reducing agents;

(xiii) Incineration (for sources other than boilers);

(xiv) Scrubbing (for sources other than boilers);

(xv) Process modification;

(xvi) Fuel switching;

(xvii) Adjustment of air/fuel ratio (for internal combustion engines only);

(xviii) Low excess air;

(xix) Gaseous fuels reburn; and

(xx) Any other such RACT alternatives as are proposed by the owner or operator.

A detailed engineering discussion is not required for those control measures which are not applicable to a particular source.

(i) For each type of control measure that is determined to be technically feasible, an estimate of the control efficiency that can be achieved.

(j) For each control measure that is determined to be technically feasible, an estimate of the capital cost, annualized cost (including capital and operating costs), and the cost-effectiveness (annual dollars per ton of NOx removed annually).

(k) A comparison and discussion of the advantages and disadvantages of the control options that are determined to be technically feasible.

(l) A recommended definition of RACT for the source, including enforceable production limits, emissions limits, control efficiencies, and/or operating requirements.

(m) An expeditious schedule for implementing the recommended definition of RACT, including milestones for awarding contracts, initiating construction, completing construction, and performing emissions testing, if necessary, to demonstrate compliance with the approved definition of RACT.

(n) In the engineering study, all calculations of the NOx emissions, including all assumptions made, shall be documented clearly and in detail. In addition, the capital and operating costs and the cost-effectiveness estimates shall be calculated in a manner that is consistent with the Ohio environmental protection agency, division of air pollution control document entitled "Guidance for Estimating Capital and Annual Costs of Air Pollution Systems".

(2) Any definition of RACT and schedule of compliance for an affected source that are approved by the director shall be submitted to and approved by the United States environmental protection agency as a revision of the Ohio state implementation plan.

(3) For any source that is subject to an emissions limit(s) contained in paragraphs (A) to (F) of this rule, if the director approves a definition of RACT and a schedule of compliance for the source pursuant to paragraph (I) of this rule, the source shall no longer be subject to the emissions limit(s) contained in paragraphs (A) to (F) of this rule.

(4) If, within the five years prior to the effective date of this rule, the Ohio environmental protection agency has defined best available technology, pursuant to section 3704.01 of the Revised Code, for NOx emissions from a source which is subject to paragraph (I) of this rule, and the owner or operator is employing or has committed to employ the best available technology, the owner or operator may provide the following information to the director in satisfaction of the requirements of paragraph (I)(1) of this rule:

(a) All information required by paragraphs (I)(1)(a), (I)(1)(b), (I)(1)(d), (I)(1)(e) and (I)(1)(g) of this rule.

(b) Copies of the documents and technical information that support the existing best available technology determination.

(c) The name, title, address and telephone number of the official who is responsible for the information submitted in accordance with paragraph (I)(4) of this rule.

If upon review of this information, the director determines that the information does not or may not indicate that the definition of best available technology satisfies the requirements of this chapter, the director shall so notify the owner or operator, and the owner or operator shall conduct a full RACT engineering study in accordance with paragraph (I)(1) of this rule.

(J) The requirements of paragraphs (A) to (F), and (I) of this rule shall not apply to the following sources:

(1) Any industrial boiler having a maximum heat input of less than or equal to twenty mmBtu/hr.

(2) Any emergency standby boiler, stationary internal combustion engine, or stationary combustion turbine which operates less than five hundred hours during any consecutive twelve-month period. However, the owner or operator of the emergency standby engine, boiler, or turbine shall maintain for a period of not less than three years, in a bound log book, or other format acceptable to the director, a list of the dates and number of hours the emergency standby engine operated.

(3) Any stationary internal combustion engine having an energy output capacity of less than five hundred horsepower.

(4) Any stationary combustion turbine having an energy input capacity of less than twenty mmBtu/hr.

(5) Any start-up unit located at an electric generating facility.

(6) Any black start unit located at an electric generating facility.

(7) Any peaking unit.

(8) Any space heating unit.

(9) Any auxiliary boiler.

(10) Any CO boiler.

(11) Any research and development source.

(12) Any jet engine test cell.

(13) Any air pollution control device.

(14) Any municipal waste combustor.

(15) Any source other than a boiler, gas turbine or internal combustion engine that has the potential to emit less than twenty-five tons per year of NOx.

(16) Any boiler, stationary internal combustion engine, or stationary combustion turbine subject to the United States environmental protection agency clean air interstate rule contained in 70 FR 25162.

(17) Any boiler subject to paragraph (C)(1) of rule 3745-14-01 of the Administrative Code (NOx SIP call).

*** DRAFT – NOT FOR FILING ***

3745-110-04 **Compliance deadlines.**

(A) Certification and permit application requirements.

(1) By not later than January 1, 2008, any owner or operator of a source subject to paragraphs (A) to (F) of rule 3745-110-03 of the Administrative Code and which is not subject to paragraph (A)(2) of this rule shall either:

(a) Certify in writing to the director that such source is in compliance with all requirements of rule 3745-110-03 of the Administrative Code. Such certification shall include: equipment description, Ohio environmental protection agency permit application number(s) (if assigned), and all necessary data (consistent with the appropriate permit application appendices) and calculations which confirm the compliance status. The certification shall also include an application for a permit-to-operate such source if such source does not possess an effective permit; or

(b) Submit an application for a permit-to-operate or an application for a modification to a permit-to-operate in accordance with either rule 3745-35-02 of the Administrative Code or Chapter 3745-77 of the Administrative Code. Such application shall include a compliance program which will bring the source into compliance with all the requirements of rule 3745-110-03 of the Administrative Code as expeditiously as practicable, but in no event later than the date specified in paragraph (B) of this rule.

(2) Any owner or operator of a source subject to paragraph (I) of rule 3745-110-03 of the Administrative Code shall:

(a) Submit a complete RACT engineering study by not later than January 1, 2009.

(b) Shall implement the approved RACT not later than May 1, 2009, unless the director approves of an alternate schedule for implementing the RACT.

(B) RACT compliance deadline.

Any owner or operator of a source which is subject to the requirements of rule 3745-110-03 of the Administrative Code, including any source for which the director approves a definition of RACT pursuant to paragraph (I) of rule 3745-110-03 of the Administrative Code, shall achieve and demonstrate compliance with said emission limitations and control requirements as expeditiously as practicable, but in no event later than the following, and shall maintain compliance thereafter:

(1) May 1, 2010, if combustion modifications are required to demonstrate compliance with the applicable NOx emission limitations; or

(2) May 1, 2011, if add-on controls are required to demonstrate compliance with the applicable emission limitations.

3745-110-05 **Compliance methods.**

[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 the last paragraph in rule 3745-110-01 of the Administrative Code titled "Incorporation by reference."]

(A) Any owner or operator of a source which is subject to the requirements of rule 3745-110-03 of the Administrative Code shall demonstrate compliance with the applicable emissions limit(s) by performing emission tests in accordance with USEPA Method 7, 7A, 7C, 7D, or 7E, and any additional approved USEPA methods as applicable.

(B) Any continuous emissions monitoring system for NOx that is employed to ensure ongoing compliance with an applicable emission limitation shall meet the requirements of Performance Specification 2, 40 CFR Part 60, Appendix B and quality assurance procedures contained in 40 CFR Part 60, Appendix F or 40 CFR Part 75. The continuous emission monitoring system shall be certified at least three months prior to a demonstration of compliance with the applicable emissions limit(s).

(C) For the compliance demonstrations performed pursuant to paragraph (A) of this rule, the owner or operator shall obtain any additional test data (i.e., flow rates, oxygen concentrations, moisture contents, etc.), continuous diluent monitoring data (carbon dioxide or oxygen), or source fuel usage or horsepower data, concurrent with the required compliance demonstration in order to convert the emission test results or monitoring data to the units of the applicable limit. Compliance demonstrations shall be performed that are representative of the normal operating modes, including fuel types or fuel blends employed and shall exclude periods of startup, shutdown, malfunction, and low load operating conditions.

(D) For paragraphs (B), (C), and (D) of rule 3745-110-03 of the Administrative Code, compliance demonstrations shall be performed while the affected boiler is operating at or as close as possible to one hundred per cent load.

(E) For paragraph (E) of rule 3745-110-03 of the Administrative Code, compliance demonstrations shall be performed while the affected stationary combustion turbine is operating at or as close as possible to one hundred per cent load and one hundred per cent speed.

(F) For paragraph (F) of rule 3745-110-03 of the Administrative Code, compliance demonstrations shall be performed while the affected internal combustion engine is operating at or as close as possible to one hundred per cent load and one hundred per cent speed.