DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DIVISION OF AIR AND WASTE MANAGEMENT

Statutory Authority: 7 Delaware Code, Chapter 60 (7 **Del.C.,** Ch. 60)
7 **DE Admin. Code** 1146

FINAL

Secretary's Order No. 2006-A-0056

Approving Electric Generating Unit Multi-Pollutant Proposed Regulation as Final Regulation No. 1146 to Delaware Regulations Governing Control of Air Pollution, and Approving Delaware's Proposed Section 111(d) State Plan for the Control of Mercury Emissions from Coal-Fired Electric Steam Generating Units as a Final Planning Document

Date of Issuance: November 15, 2006
Effective Date: December 11, 2006

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") under 29 **Del.C.** §§8001 *et seq*., 29 **Del.C.** §§10111 *et seq*. and 7 **Del.C.** §6010 (a), the following findings, reasons and conclusions are entered as an Order of the Secretary in this proceeding. This Order approves an important Department regulation and a required planning document, which together will improve Delaware's air quality. In turn, these regulatory actions will benefit the public health and welfare of thousands of Delaware's residents and visitors.

The regulation approved today will impose lower emissions limits of three of the most harmful pollutants to Delaware's air quality, namely, nitrogen oxides ("NOx"), sulfur dioxide ("SO_2") and mercury. These harmful pollutants will be reduced by the regulation's establishment of limits on Delaware's largest sources of such pollution, namely, the 8 coal and residual oil-fired electric generating units ("EGU") of 25 megawatts or more of generating capacity. EGUs subject to this regulation are Conectiv Delmarva Generating, Inc.'s Edge Moor Generating Station Units 3, 4 and 5, the City of Dover's McKee Run Generating Station Unit 3, and NRG Energy, Inc/ Indian River Power LLC's the Indian River Generating Station Units 1, 2, 3 and 4. Together, in 2005 these units emitted 10,419 tons of NOx and 30,482 tons of SO_2. This regulation reduces these levels to allowable 2009 emissions of 7,942 tons of NOx and 14,295 tons of SO_2, or reductions of 24% and 53%, respectively. The regulation also imposes limits on mercury, which is a pollutant that prior to this Order was not subject to any regulatory limits or even monitoring.

This Order is based on a vast administrative record, including the public hearing record reviewed in the November 14, 2006, Hearing Officer's Report ("Report"), attached as Appendix C. I find that the proposed regulation and plan s well supported by technical expertise and sound judgment, is consistent with the law, and has a reasonable purpose that is consistent with the Department's statutory purposes. The Report reviews and summarizes the massive administrative record, including the public hearings, which were held in Dover, Kent County, in Georgetown, Sussex County, and in New Castle, New Castle County. Over a hundred persons participated in the public comment process by attending the public hearing or by submitting written comments. The Report recommends approval of the proposed regulation as a final regulation, except for non-substantive modifications recommended by the Department's experts based upon the public comments. In addition, the Report recommends approval of Delaware's Proposed Section 111(d) State Plan for the Control of Mercury Emissions from Coal-Fired Electric Steam Generating Units as a Final Planning Document. I agree with the Report and adopt it as part of this Order along with its reasons.

The regulation approved by this Order will result in significant improvements to Delaware's air quality, which, in turn, will benefit Delaware's public health and welfare. The improved air quality will particularly benefit Delaware's children, the elderly, and those who suffer with an impaired ability to breathe. The improvements will occur in two phases, with Phase I limits beginning May 1, 2009, and Phase II limits beginning January 1, 2012.

The regulation requires that the air emissions of the three most harmful air pollutants be reduced from Delaware's oldest and highest emitting EGUs. These older units operate with minimal air pollution controls,

particularly compared to newer units. There is no question that this regulation will result in cleaner air in Delaware. There is no question that one major benefit of cleaner air is its public health benefit, both the short-term benefit in lessening the suffering of those inflicted by impaired respiratory health and the long-term benefit in prevented adverse health damage, particularly in children. The regulation also will improve the environment with the aesthetic benefit of less haze, and provide an economic benefit of reduced morbidity and mortality costs, health care and health insurance costs, lost work time, etc., as well as less harm to Delaware's agriculture products. Should the EGUs install pollution control equipment, then that investment will provide a sizable economic benefit, particularly in the workers needed to install and operate the equipment.

This regulation will become part of Delaware's ozone and fine particulate matter State Implementation Plan ("SIP"), which is used to establish Delaware's compliance with the federal Clean Air Act ("CAA"), as amended. The SIP identifies the regulatory steps and information that the Department has undertaken and relied upon in order that Delaware's air will attain and maintain compliance with the CAA's air quality standards. Delaware must comply with the CAA and the Environmental Protection Agency's ("EPA") regulations that implement the CAA. The Department's experts have determined that this regulation is necessary to improve Delaware's air quality by the CAA's deadlines. The two phases of the regulation were designed to allow Delaware to meet the CAA's deadlines. This regulation, along with other regulatory actions the Department has taken and will continue to take, is part of the Department's overall effort to bring Delaware's air quality into compliance with the CAA's standards.

The Department determined that it was reasonable to address the three pollutants from coal or residual oil-fired EGUs with 25 megawatts or more of generating capacity. The Department's experts also indicate that these 8 units can install known and proven air pollution control equipment and/or make operational changes to comply with the regulation. The EGUs could also switch to cleaner fuels or even shutdown if the owners believe that the installation of the pollution control equipment is not cost justified on these old units. The Department cannot require the installation of pollution control equipment, but the CAA and the need to protect the environment and public health require that this regulation be approved even if the EGUs shutdown. The Department undertook the exercise of its power to regulate only after the EGUs were afforded an opportunity to provide their voluntary reductions to the emissions of these three harmful pollutants. The Department's efforts at voluntary compliance were unsuccessful, as the EGUs have not invested in the necessary pollution control equipment. The reason for the lack of investment to date is the equipment's considerable expense, and the lack of any regulatory mandate due to the EGUs' "grandfathered status" as older units built before the current air permit requirements. Nonetheless, this cost is one that the EGUs must accept as a cost of doing business in Delaware, which no longer will be a safe haven for the continued operation of largely uncontrolled pollution from the EGUs.

This regulation is approved because the Department, acting on behalf of all Delawareans, is not willing to wait any longer for a business decision to install needed pollution control equipment. The EGUs emit more of the three harmful pollutants than any other sources in Delaware, and consequently harm Delaware's air quality more than any other sources. This harm to Delaware's air quality, in turn, causes numerous adverse health consequences to its residents and visitors.

There is a huge public health benefit from the cleaner air, although the economic valuation (lost work time, health care and insurance costs, and impaired quality of life diminished or cut short by exposure to polluted air, etc) is less readily quantified than a construction estimate for pollution control equipment. Nevertheless, EPA, in its Regulatory Impact Analysis for its federal regulation, determined that for each $1.00 spent on pollution control equipment would produce a social value benefit of at least $10 in ongoing annual health savings. Thus, the Department's regulation's cost to the EGUs is appropriate when measured by this far greater social benefit.

The 8 EGUs are older, but the age does not justify the continued release of harmful air emissions, often in or near densely populated residential areas and schools. Indeed, the public at the public hearings presented powerful comments on the adverse health consequences from adults and children's exposure to the EGU's harmful release of the three pollutants. Few of the Department's proposed regulations have received the amount of public support as this regulation received during the public hearing process, although some of the public sought even more stringent limits than the Department proposed.

Also, the CAA Section 111(d) plan, which includes the mercury portion of Regulation No. 1146, is finalized under this Order and will be submitted to the EPA. On May 18, 2005, the EPA finalized the Clean Air Mercury Rule (CAMR) to establish standards of performance for mercury emissions from new and existing coal-fired electric steam generating units, as defined in Section 111 of the federal Clean Air Act (CAA). Under CAMR, each state receives an annual budget for mercury emissions from coal-fired EGUs with a nameplate capacity larger than 25 megawatts. A State can meet its CAMR budget either by joining the EPA managed cap-and-trade program or by

demonstrating that the State annual EGU mercury budgets codified in 40 CFR §60.24(h)(3) will not be exceeded in any year. Delaware's plan does not provide for participation in the EPA-managed cap-and-trade program, but instead establishes a program that is designed to achieve emission reductions and cap overall mercury emissions from EGUs within Delaware. Delaware's Regulation No. 1146 establishes both mercury emission rate limitations and mercury emission mass limitations. The mercury mass emissions limitations, expressed in tons per year, are those that will satisfy CAMR requirements. Both the emission rate and emission mass requirements require compliance on a unit-by-unit basis, and do not allow trading or facility-wide emissions averaging. Delaware is not adopting the federal mercury budget trading program under 40 CFR Part 60 Subpart HHHH. This means that both existing and new (i.e., construction after January 30, 2004) coal fired EGUs are subject to this regulation. A new unit set aside has been established to provide for new unit construction – a 5% set aside for Phase I is 0.0036 ton/yr (7.2 lb/yr) and the 3% set aside for Phase II is 0.0008 ton/yr (1.7 lb/yr). Any need beyond this will be addressed by revision to both Regulation No. 1146 and this plan to ensure annual mass emission from coal fired EGUs greater than 25 MW in size in Delaware will not exceed the annual mercury budget established under 40 CFR §60.24(h)(3).

This regulation shows that the Department's experts have struck a fair balance in determining the emission limits. They have relied upon accepted industry information that the pollution control equipment can be installed economically and in time. The EGUs should have planned for the installation of pollution control equipment long ago, but even with the December 11, 2006, effective date of this regulation, the Department has provided the EGUs with sufficient time for the pollution control equipment to be installed. Moreover, the law provides the EGUs with ample recourse. For example, the Administrative Procedure Act allows any person to petition for relief from a regulation, and the Department's statute also provides a relief mechanism in a variance. The Department also will be closely monitoring the EGUs progress, and reserves the right to review the limits and deadlines as may be warranted. The Department may undertake its own interim review of the time deadlines and limits as it deems appropriate, and the regulation's minor modification to Section 8.3 of Regulation 1146 offers another method of possible relief. This Order will formally set up an interim review of this Regulation by directing the Department undertake by January 11, 2010, a complete a review of the state of, and expected changes in, technology, cost effectiveness of available control technologies and control strategies, and emissions rates; as well as a review of the EGUs, and their emissions. This review shall be used to consider whether the standards in Section 4, 5, and 6 of Regulation 1146 should be amended, including new standards adopted, to ensure the continued improvement of the ambient air quality in Delaware.

The Department adopts this regulation to exercise the state's authority to protect the public health and environment. This state action is taken because the federal regulatory scheme under the federal Clean Air Act relies on a market based theory to encourage the investment in pollution control equipment. The Department's experts have shown that Delaware's experience with the federal cap and trade programs has not resulted in significant reductions from Delaware's EGUs. Moreover, the emissions of these three harmful pollutants are predicted by the Department experts to increase in the future under the federal CAIR and CAMR cap and trade programs. This situation is unacceptable for Delaware.

For Delaware, allowing market conditions to dictate if and when Delaware has cleaner air is contrary to this Department's statutory purposes. Without this regulation, the current situation of minimal investment in pollution control equipment will continue, and the failure to install the needed equipment will mean continued adverse health consequences to Delawareans. The owners of similar units have invested in pollution control equipment in other locations outside of Delaware, and the regulation seeks to require that Delaware receive the same pollution control equipment that has been installed at these locations. This regulation is Delaware's reasonable and prudent action to exercise state authority to regulate these 8 units to reduce their emission of harmful pollutants, which is an action consistent with protecting the public health and environment in Delaware.

The Report discusses the proposed regulation and recommends the changes proposed by the Division of Air and Waste Management's Air Quality Management Section in response to public comments. One change extends the compliance period to coincide with the Department's regulation on ozone attainment, and this clearly is a procedural and non-substantive change. The other change is to allow a procedure for a unit's owner to seek relief relative to timing. Again, I find the ability to seek relief from a regulation is an inherent right in the Administrative Procedure Act and that this change is procedural and not substantive in nature. Any appeal, if successful, will mean that Delaware will not have cleaner air sooner, and will not be able to comply with the CAA's deadlines.

In conclusion, the following findings and conclusions are entered:

1. The Department, acting through this Order of the Secretary, adopts Regulation No. 1146 as set

forth in the Appendix A hereto as a final regulation under 29 **Del.C.** §6010 (a);

2. The Department, acting through this Order of the Secretary, adopts the Section 111(d) plan, as proposed and updated as set forth in Appendix B, as Delaware's final planning document for submission to the EPA;

3. The approval of the final regulation and the plan as a final planning document, will protect and improve the air quality in Delaware from the harmful consequences of the emissions of mercury, SO_2 and NOx from the EGUs, which emissions are responsible for a large amount of the release of these pollutants in Delaware;

4. The proposed regulation and plan approved by this Order were developed consistent with the applicable law and regulatory standards, and are adequately supported by expert technical analysis, after considering all timely and relevant public comments;

5. The Department provided adequate public notice of the proceeding and the public hearings in a manner required by the law and regulations, held public hearings in a manner required by the law and regulations, and considered all timely and relevant public comments in making its determination;

6. The Department's approved final regulation reflects recommended non-substantive minor modifications that do not change the limits or any substantive part of the regulation. These minor modifications and the regulation as a whole are adequately supported, not arbitrary or capricious, and are consistent with the applicable laws and regulations. Approval of the final regulation and final plan are consistent with the Department's statutory duty to protect the public health and environment in Delaware. The final regulation and the final plan are approved and shall go into effect ten days after publication in the next available issue of the *Delaware Register of Regulations*; and that

7. The Department shall provide written notice to the persons affected by the Order, as determined by those who participated in these Department proceedings at either the public workshops, at the public hearings, or through participation by the submission of timely and relevant written comments.

John A. Hughes
Secretary

1146 Electric Generating Unit (EGU) Mulit-Pollutant Regulations

1.0 Preamble:

This regulation establishes Nitrogen Oxides (NOx), Sulfur Dioxide (SO2),and mercury emissions limits to achieve reductions of those pollutants from Delaware's large electric generation units. The reduction in NOX, SO2, and mercury emissions will: 1) reduce the impact of those emissions on public health; 2) aid in Delaware's attainment of the State and National Ambient Air Quality Standard (NAAQS) for ground level ozone and fine particulate matter; 3) help address local scale fine particulate and mercury problems attributable to coal and residual oil-fired electric generating units, 4) satisfy Delaware's obligations under the Clean Air Mercury Rule (CAMR), and 5) improve visibility and help satisfy Delaware's EGU-related regional haze obligations.

While the purpose of this regulation is to reduce air emissions, any emission control equipment installed to meet the requirements of this regulation may impact other media (e.g., water), and any overall environmental impacts must be considered by subject entities when they design their overall compliance strategy. Any emission controls installed to meet the requirements of this regulation will be subject to public review and comment through air Regulation 1102 and 1130 permitting requirements.

Separate from this Regulation the Department will propose regulations to address CO2 emissions from these units, and regulations to satisfy direct fine particulate matter Reasonably Available Control Technology (RACT) and Best Available Retrofit Technology (BART) requirements. Together, these regulations will cover current and foreseeable requirements relative to the subject units.

2.0 Applicability:

This regulation applies to coal-fired and residual oil-fired electric generating units located in Delaware with a nameplate capacity rating of 25 MW or greater that commenced operation on or before the effective date of this regulation.

3.0 Definitions: The following words and terms, when used in this regulation, shall have the following meanings:

"Administrator" means the Administrator of the United States Environmental Protection Agency **[~~of~~ or]**

the Administrator's duly authorized representative.

"Coal" means any solid fuel classified as anthracite, bituminous, sub-bituminous, or lignite.

"Coal-fired" means combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of other fuel, during any year.

"Department" means the State of Delaware Department of Natural Resources and Environmental Control as defined in Title 29, **Delaware Code,** Chapter 80, as amended.

"Designated representative" means the natural person who is authorized by the owners and operators of the source and all units at the source to legally bind each owner and operator in matters pertaining to this regulation. If the source subject to this regulation is also subject to the Federal Acid Rain Program, then this natural person shall be the same person as the designated representative under the Acid Rain Program.

"Emissions" means air pollutants exhausted from a unit or source into the atmosphere.

"Generator" means a device that produces electricity.

"Heat input" means the product (in MMBTU/time or TBTU/time) of the gross calorific value of the fuel (in MMBTU/lb or TBTU/lb) and the fuel feed rate (in lb of fuel/time) into a combustion device; or as calculated by any other method approved by the Department and the Administrator, and does not include the heat derived from pre-heated combustion air, recirculated flue gasses, or exhaust from other sources.

"Inlet mercury" means the average concentration of mercury in the flue gas at the inlet to any pollution control device(s).

"Nameplate capacity" means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other de-ratings) as specified by the manufacturer of the generator or, starting from the completion of any physical change in the generator resulting in an increase in the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other de-ratings), such increased maximum amount as specified by the person conducting the physical change.

"Operator" means any person who operates, controls, or supervises a unit or source subject to this regulation and shall include, but not be limited to, any holding company, utility system, or plant manager of such unit or source.

"Ounce" means 28.4 grams.

"Owner" means: A) any holder of any portion of the legal or equitable title in a unit; B) any purchaser of power from a unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from the unit.

"Residual oil" means No. 5 or No. 6 fuel oil.

"Ton" means 2000 pounds.

"Unit" means, for the purposes of this regulation, a stationary, fossil-fuel-fired boiler supplying all or part of its output to an electric generating device.

4.0 NOX Emissions Limitations

4.1 From **[~~January~~ May]** 1, 2009 through December 31, 2011, no unit subject to this regulation shall emit NOx at a rate exceeding 0.15 lb/MMBTU.

4.1.1 Compliance with the requirements of paragraph 4.1 of this section shall be demonstrated on a rolling 24-hour average basis.

4.1.2 NOx emissions from multiple units subject to this regulation at a common facility may be averaged on a heat input basis to demonstrate compliance with the requirements of paragraph 4.1 of this regulation.

4.2 On and after January 1, 2009, no unit subject to this regulation shall emit annual NOx mass emissions that exceed the values shown in Table I.

4.2.1 From January 1, 2009 through December 31, 2011, compliance with the requirements of paragraph 4.2 of this regulation may be achieved by demonstrating that the total number of tons of NOX emitted from a common facility does not exceed the sum of the tonnage limitations for all of the units subject to this regulation at that facility.

4.2.2 Compliance with the requirements of paragraph 4.2 of this regulation shall not be

achieved by using, tendering, or otherwise acquiring NOx allowances under any state or federal emission trading program.

4.2.3 For the purpose of determining compliance with the requirements of paragraph 4.2. of this regulation, the total tons for a specified period shall be calculated as the sum of all recorded hourly emissions, with any remaining fraction of a ton equal to or greater than 0.50 ton deemed to equal one ton and any remaining fraction of a ton less than 0.50 ton deemed equal to zero tons.

4.3 On and after January 1, 2012, no unit subject to this regulation shall emit NOx at a rate exceeding 0.125 lb/MMBTU, demonstrated on a rolling 24-hour average basis.

4.4 Compliance with the requirements of paragraphs 4.1 through 4.3 of this section shall be demonstrated with a continuous emissions monitoring system that is installed, calibrated, operated, and certified in accordance with 40 CFR Part 75 (May 18, 2005 amendment) or other method approved by the Department and the Administrator, and meeting the requirements of 40 CFR Part 96, subpart HH (April 28, 2006 amendment).

5.0 SO2 Emissions Limitations

5.1 From **[~~January~~ May]** 1, 2009 though December 31, 2011, no coal fired unit subject to this regulation shall emit SO2 at a rate exceeding 0.37 lb/MMBTU heat input.

5.1.1 Compliance with the requirements of paragraph 5.1 of this section shall be demonstrated on a 24-hour rolling average basis.

5.1.2 SO2 emissions from multiple units subject to this regulation at a common facility may be averaged on a heat input basis to demonstrate compliance with the requirements of paragraph 5.1 of this regulation.

5.2 On and after January 1, 2012, no coal-fired unit subject to this regulation shall emit SO2 at a rate exceeding 0.26 lb/MMBTU heat input, demonstrated on a rolling 24-hour average basis.

5.3 On and after January 1, 2009, no unit subject to this regulation shall emit annual SO2 mass emissions that exceed the values shown in Table II.

5.3.1 From January 1, 2009 through December 31, 2011, compliance with the requirements of paragraph 5.3 of this regulation may be achieved by demonstrating that the total number of tons of SO2 emitted from a common facility does not exceed the sum of the tonnage limitations for all of the units subject to this regulation at that facility.

5.3.2 Compliance with the requirements of paragraph 5.3 of this regulation shall not be achieved by using, tendering, or otherwise acquiring SO2 allowances under any state or federal emission trading program.

5.3.3 For the purpose of determining compliance with the requirements of paragraph 5.3 of this regulation, the total tons for a specified period shall be calculated as the sum of all recorded hourly emissions, with any remaining fraction of a ton equal to or greater than 0.50 ton deemed to equal one ton and any remaining fraction of a ton less than 0.50 ton deemed equal to zero tons.

5.4 Compliance with the requirements of paragraphs 5.1 through 5.3 of this regulation shall be demonstrated with a continuous emissions monitoring system that is installed, calibrated, operated and certified in accordance with 40 CFR Part 75 (May 18, 2005 amendment) or other method approved by the Department and the Administrator, and meeting the monitoring and reporting requirements of 40 CFR Part 96, subpart HHH (April 28, 2006 amendment).

5.5 On and after January 1, 2009, no residual oil with a sulfur content in excess of 0.5%, by weight, shall be received for any residual oil-fired unit subject to this regulation.

5.5.1 Compliance with the requirements of paragraph 5.5 shall be demonstrated by fuel oil sampling and analysis Samples shall be collected:

5.5.1.1 From the transport vessel for each shipment of residual fuel oil received at the facility for combustion in the subject residual oil-fired unit, or

5.5.1.2 From the supply pipeline each day residual oil is delivered to the facility via pipeline for combustion in a residual oil-fired unit subject to this regulation, after sufficient fuel oil has been drained from the sampling line to remove any fuel oil that may have been standing in the sampling line, or

5.5.1.3 From the supply pipeline at the inlet to the residual oil-fired unit subject to this regulation each day the unit fires any quantity of oil fuel, after sufficient fuel oil has been drained from the sampling line to remove any fuel oil that may have been standing in the sampling line.

5.5.2 Fuel oil samples shall be analyzed in accordance with ASTM D 129-00, ASTM D 1552-03,

ASTM D 2622-05, or ASTM D 4294-03.

6.0 Mercury Emissions Limitations

6.1 From January 1, 2009 through December 31, 2012, any coal-fired unit subject to this regulation shall, on a quarterly average basis:

6.1.1 Emit mercury at a rate that does not exceed 1.0 lb/TBTU heat input, or

6.1.2 Capture and control a minimum 80% of baseline inlet mercury emissions.

6.2 On or after January 1, 2013, any coal-fired unit subject to this regulation shall, on a quarterly average basis:

6.2.1 Emit mercury at a rate that does not exceed 0.6 lb/TBTU heat input, or

6.2.2 Capture and control a minimum 90% of baseline inlet mercury emissions.

6.3 Annual mercury mass emissions from the coal-fired units subject to this regulation shall not exceed the values shown in Table III.

6.3.1 Compliance with the requirements of paragraph 6.3 of this regulation shall be demonstrated on an annual basis.

6.3.2 Compliance with the requirements of paragraph 6.3 of this regulation shall not be achieved by using, tendering, or otherwise acquiring mercury allowances under any state or federal emissions trading program.

6.4 Compliance with the requirements of paragraphs 6.1 through 6.3 of this regulation shall be demonstrated as follows:

6.4.1 Compliance with the requirements of paragraphs 6.1.1., 6.2.1, and 6.3. shall be demonstrated with a continuous emissions monitoring system that is installed, calibrated, operated, and certified in accordance with 40 CFR Part 75 (May 18, 2005 amendment) and meeting the monitoring and reporting requirements of 40 CFR Part 60 (June 9, 2006 amendment).

6.4.2 Compliance with the requirements of paragraphs 6.1.2. and 6.2.2. shall be demonstrated as follows:

6.4.2.1 During the period January 1, 2007 through March 31, 2008, the owner or operator shall conduct at least four quarterly stack tests to measure the mercury in the flue gas stream.

6.4.2.1.1 Except as provided for in 6.4.2.1.2. the test sampling location shall be located upstream of any pollution control device.

6.4.2.1.2 The sampling location may be located downstream of any SNCR injection points.

6.4.2.2 There shall be at least three valid stack tests per quarter and at least 45 days between stack tests performed for a given quarter and the stack tests performed for the preceding quarter, unless otherwise approved by the Department.

6.4.2.3 Each stack test shall be conducted in accordance with a testing protocol approved by the Department. Proposed test protocols shall be submitted to the Department no less than 90 days prior to conducting the mercury tests.

6.4.2.4 The baseline inlet mercury emission rate for the affected unit, in lb/TBTU, shall be determined as the arithmetic average of the quarterly stack tests conducted on that unit in accordance with section 6.4.2.1 of this regulation.

6.4.2.5 No later than June 1, 2008, the owner or operator shall submit a petition to the Department requesting the establishment of a unit specific mercury emission rate limit. As a minimum, the report shall contain the following information:

6.4.2.5.1 Identification and brief description of the affected unit.

6.4.2.5.2 A list and brief description of all emissions control equipment installed on the affected unit at the time of the stack tests, including operating status at the time of the stack tests.

6.4.2.5.3 An accounting of all fuels and fuel quality being fired during the emissions tests.

6.4.2.5.4 Results of each quarterly mercury emissions tests.

6.4.2.5.5 Proposed mercury emission limits that are no greater than 20% of the baseline uncontrolled mercury emission rate determined in accordance with section 6.4.2. of this regulation for the annual periods January 1, 2009 through December 31, 2012, and no greater than 10% of the baseline uncontrolled mercury emission rate determined in accordance with section 6.4.2 of this regulation for the annual

periods starting January.1, 2013 and beyond.

6.4.2.5.6 Summary description of the actions anticipated by the owner or operator of the affected unit to attain compliance with the proposed mercury emission limits.

6.4.2.6 The owner or operator of the affected unit shall submit to the Department any additional information requested by the Department necessary for review and approval of the petition.

6.4.2.7 The Department shall establish, for the affected unit, a unit specific mercury emission rate no greater than 20% of the unit's baseline uncontrolled mercury emissions rate for the period January 1, 2009 through December 31, 2012, and no greater than 10% of the unit's baseline uncontrolled mercury emission rate for the period January 2013 and beyond.

7.0 Recordkeeping and Reporting

7.1 The owner or operator of a unit subject to this regulation shall comply with all applicable recordkeeping and reporting requirements of 40 CFR Part 75 (May 18, 2005) and this regulation.

7.2 The owner or operator of a unit subject to this regulation shall maintain, for a period of at least five years, copies of all measurements, tests, reports, and other information required by 40 CFR Part 75 (May 18, 2005 amendment) and this regulation. This information shall be provided to the Department upon request at any time.

7.3 After January 1, 2009, the owner or operator of a unit subject to this regulation shall submit to the Department semi-annual reports in conjunction with the Regulation No. 30 reporting requirements. The semi-annual reports shall contain, as a minimum, the following information:

7.3.1 Tabulation of emission monitoring results reduced to 1-hour averages, on a clock basis, for the period in units consistent with the applicable emission standard.

7.3.2 In addition to the requirements of Section 8.3.1, the following calculations shall be made and reported in the semi-annual report:

7.3.2.1 For mass emission standards based on daily limits, the daily mass emission on a calendar day basis for each day in the period, in units consistent with the applicable emission standard.

7.3.2.2 For mass emissions based on an annual limit, the calendar year-to-date summation of mass emissions through the period being reported, in units consistent with the applicable emission standard.

7.3.2.3 For emission rate averaging, identification of the units being averaged, hourly heat input of the respective units, hourly emission rate of the respective units, and the hourly combined heat input weighted emission average for the affected units.

7.3.3 Identification of any period(s) of, and cause for, any invalid data averages.

7.3.4 Records of any repairs, adjustment, or maintenance to the monitoring system.

7.3.5 The results of all fuel oil sulfur analysis.

7.3.6 Identification of any exceedance of any emission standard provided by this regulation, cause of the exceedance, and corrective action taken in response to the exceedance.

7.3.7 Results from all tests, audits, and recalibrations performed during the period.

7.3.8 Any other relevant data requested by the Department.

7.3.9 A statement, "I am authorized to make this submission on behalf of the owners and operators of the affected facility or affected units for which this submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

7.3.10 Signature by the designated representative.

8.0 Compliance Plan

8.1 The owner or operator of a unit subject to this regulation shall submit a compliance plan to the Department on or before July 1, 2007.

8.2 The compliance plan shall contain, at a minimum, the following information:

8.2.1 Identification of the subject unit.

8.2.2 A description of any existing NOX, SO2, and/or mercury emissions control technologies installed on the unit, including identification of the initial installation date of the control technologies.

8.2.3 Identification of the requirements of this regulation applicable to the unit.

8.2.4 A description of the plan or methodology that will be utilized to demonstrate compliance with this regulation.

8.2.5 Identification of emission control technologies, and/or modifications to existing emission control technologies, that will be utilized to comply with the applicable emissions limitations of this regulation. This shall include:

8.2.5.1 A description of the control technology and its applicability to the subject unit.

8.2.5.2 The design control effectiveness or design emission rate following installation of the emission control technology on the subject unit.

8.2.5.3 Estimated dates for start of construction, start-up of the emissions control technology, and estimated project completion date.

8.2.6 A description of the emissions monitoring methodology to be utilized for demonstrating compliance with the emissions limitations of this regulation, including estimated installation dates, start-up dates, and testing dates.

8.2.7 Identification of any planned changes to administrative or operating procedures or practices intended to achieve compliance with applicable emissions limitations of this regulation.

8.2.8 Any other relevant information requested by the Department.

8.2.9 A statement, "I am authorized to make this submission on behalf of the owners and operators of the affected facility or affected units for which this submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

8.2.10 Signature by the designated representative.

[8.3 A facility that has submitted a complete compliance plan for its impacted units in accordance with the requirements of Section 8.0 of this regulation may on one occasion for each unit request an extension of up to one year for any deadline set out in Sections 5.1 and 5.3 of this regulation. The facility shall have the burden of demonstrating that good faith efforts have been made to comply with the original deadline; that the facility is unable to comply because of events or circumstances beyond the control of the facility, including any entity controlled by it; that the delay could not have been prevented by the facility's exercise of due diligence; and that the facility has taken all reasonable steps or measures to avoid or minimize the delay. The Secretary shall exercise his discretion to grant a request that satisfies all the criteria.]

9.0 Penalties.

The Department may enforce all of the provisions of this regulation under 7 **Del.C.** Chapter 60.

Table I
Annual NO_X Mass Emissions Limits

Unit	**Control Period NO_X Mass Emissions Limit *(tons)***
Edgemoor 3	773
Edgemoor 4	1339
Edgemoor 5	1348
Indian River 1	601
Indian River 2	628
Indian River 3	977
Indian River 4	2032
McKee Run	244

Table II
Annual SO_2 Mass Emissions Limits

Unit	Control Period SO_2 Mass Emissions Limit *(tons)*
Edgemoor 3	1391
Edgemoor 4	2410
Edgemoor 5	2427
Indian River 1	1082
Indian River 2	1130
Indian River 3	1759
Indian River 4	3657
McKee Run	439

Table III
Annual Mercury Mass Emissions Limits

Unit	Mercury Mass Emissions 2009 - 2012 (ounces)	Mercury Mass Emissions 2013 and Beyond (ounces)
Edgemoor 3	266	106
Edgemoor 4	462	183
Indian River 1	207	82
Indian River 2	216	86
Indian River 3	337	134
Indian River 4	700	278

CAA Section 111(D) State Plan for the Control of Mercury Emissions from Coal-fired Electric Steam Generating Units (EGUs)

I. Background/Introduction

On May 18, 2005, the U.S. Environmental Protection Agency (EPA) finalized the Clean Air Mercury Rule (CAMR) to establish standards of performance for mercury emissions from new and existing coal-fired electric steam generating units (EGUs), as defined in Section 111 of the federal Clean Air Act (CAA). See 70 FR 28606, which is attached hereto as Appendix A.

Under CAMR, each State receives an annual budget for mercury emissions from coal-fired EGUs with a nameplate capacity larger than 25 megawatts. A State can meet its CAMR budget either by joining the EPA managed cap-and-trade program or by demonstrating that the State annual EGU mercury budgets codified in 40 CFR §60.24(h)(3) will not be exceeded in any year. The State of Delaware's mercury budget for the period January 1, 2010 through 2017 is 0.072 tons, and its budget for 2018 and thereafter is 0.028 tons.

By November 17, 2006, states must submit a plan to the EPA that meets the requirements of the CAMR. If a state fails to submit a state plan, then the EPA will prescribe a Federal plan for that state under Section 111(d)(2)(A) of the CAA. See 70 Fed. Reg. 28649 (May 18, 2005) and 40 CFR 60.24 (h)(2). The EPA would propose the model rule (i.e., 40 CFR Part 60 Subpart HHHH) under the CAMR as that Federal plan.

In Delaware two (2) facilities with six (6) existing EGUs are subject to the requirements of 60.24(h). Consequently, the Department must develop this State Plan to implement and enforce the Section 111(d)

requirements to control mercury emissions from these EGUs.

The main component of this plan is the mercury portion of Delaware's Air Regulation No. 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation. Regulation No. 1146 does not provide for participation in the EPA-managed cap-and-trade program, but instead establishes a program that is designed to achieve emission reductions and cap overall mercury emissions from EGUs within Delaware. Delaware's proposed Regulation No. 1146 establishes both mercury emission rate limitations and mercury emission mass limitations. The mercury mass emissions limitations, expressed in tons per year, are those that will satisfy CAMR requirements. Both the emission rate and emission mass requirements require compliance on a unit-by-unit basis, and do not allow trading or facility-wide emissions averaging.

Delaware is not adopting the federal mercury budget trading program under 40 CFR Part 60 Subpart HHHH. This means that both existing and new (i.e., construction after January 30, 2004) coal fired EGUs are subject to this plan. A new unit set aside has been established to provide for new unit construction - a 5% set aside for Phase I is 0.0036 ton/yr (7.2 lb/yr) and the 3% set aside for Phase II is 0.0008 ton/yr (1.7 lb/yr). Any need beyond this will be addressed by revision to both Regulation No. 1146 and this plan to ensure annual mass emission from coal fired EGUs greater than 25 MW in size in Delaware will not exceed the annual mercury budget established under 40 CFR §60.24(h)(3).

DNREC intends to finalize and submit to the EPA for approval both Regulation No. 1146 and this plan no later than November 17, 2006.

II. Public Participation [40 CFR §60.23(f)]

Prior to submitting this Section 111(d) State Plan to EPA for approval, the DNREC will hold three public hearings for the purpose of accepting testimony on this proposed State Plan for controlling mercury emissions from all Coal-fired Electric Steam Generating Units in the State. Because of the integral relationship, these public hearings will coincide with the public hearings on the adoption of Regulation No. 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation. The public hearings will be held on the following dates, times and locations:

September 25, 2006 6:00 p.m.	DNREC Auditorium 89 Kings Highway Dover, DE 19901
September 27, 2006 6:00 p.m.	DNREC Lukens Drive Office 391 Lukens Drive New Castle, DE 19720
September 28, 2006 6:00 p.m.	Del Tech - Owens Campus Rt. 18 & Seashore Hwy Georgetown, DE 19947

As required under 40 CFR §60.23, DNREC will publish notice of the date, time and location of the hearings at least 30 days prior to the scheduled date of the hearing. The Notice of Public Hearings and opportunity to provide written comments will be published in both the Delaware Register of Regulations and in newspapers of general circulation in the state. In addition, EPA, and states in the interstate region whose air quality may be affected by emissions from Delaware's EGUs will receive notice of the date, time and location of each hearing. The notice will also specify that copies of the proposed Section 111(d) State Plan are available for review in the Departments Dover and New Castle offices.

Persons interested in providing testimony on the proposed Section 111(d) State Plan are encouraged to contact Bob Clausen at (302) 739-9402 prior to the hearing.

Persons interested in submitting written comments on the proposed State plan should send the comments to Bob Clausen, State of Delaware, DNREC, Division of Air and Waste Management, 156 S. State Street, Dover, DE 19901. Written comments will be accepted until October 1, 2006, or any longer time as specified by the Hearing Officer at the public hearings. Copies of the proposed adopted State Plan for EGUs may be obtained from Bob Clausen at the above address or by telephone at (302) 739-9402 (e-mail robert.clausen@state.de.us). This proposed State Plan is also available on the DNREC Web site at www.awm.delaware.gov/Info/Regs/AQMMultiPReg.htm.

In accordance with 40 CFR §60.23(f), DNREC will certify that the public hearings were held in accordance with the criteria specified in 40 CFR §60.23(d), and will provide a list of witnesses and their organizational affiliations, if any, appearing at the hearing and a brief written summary of each presentation or written submission. The public hearing certification is attached hereto as Appendix B (Documentation of public participation process).

III. Implementation of the Section 111(d) State Plan

The Department is proposing State-specific regulations as the primary mechanism to control mercury emissions from existing coal-fired electric steam generating units (i.e., Regulation No. 1146). Proposed Regulation No. 1146 implements mercury requirements for all subject existing coal fired EGUs in Delaware, and is attached hereto as Appendix C.

Annual mercury emissions from new coal-fired EGUs will be limited through federally enforceable permit conditions, and allowable mass mercury emissions from new units shall not exceed the amount of the new source set-aside provided for in this plan. Any need beyond the new-source set aside provided for in this plan shall be addressed through revision to Reg. 1146 and this plan. Any revision to Reg. 1146 and this plan shall be pursuant to the requirements of 7 **Del.C.**, Chapter 60 and federal requirements of 40 CFR Part 60. In addition, new coal fired EGUs will be subject to federal New Source Performance Standard (NSPS) requirements.

Public hearings will be simultaneously held on this plan and proposed Regulation No. 1146, as indicated in Section II above.

IV. Annual Mercury Mass Emissions Limitations for Delaware's Existing Coal-Fired Electric Generating Units

Annual EGU mercury mass emissions caps for individual states are specified in 40 CFR Part 60.24. For Delaware, §60.24 specifies a statewide mercury mass emissions cap of 0.072 tons/yr (2304 oz/yr) for the years 2010 through 2017, and a state mercury mass emissions cap of 0.028 tons/yr (896 oz/yr) for 2018 and thereafter.

The proposed state Regulation No. 1146 applies to Delaware's existing coal-fired electric generating units (EGUs) with nameplate ratings of 25 MW or greater. For each of these individual EGUs, the proposed regulation specifies annual mercury mass emissions caps. For the years 2009 through 2012, the total of the mercury mass emissions caps for all of the identified EGUs in the proposed regulation is 2189 oz/yr (0.068 ton/yr). For the year 2013 and thereafter, the total of the mercury mass emissions caps for all of the identified EGUs in the proposed regulation is 869 oz/yr (0.027 tons/yr).

Delaware will not participate in the Clean Air Mercury Rule (CAMR) cap-and-trade program. No interstate or intrastate trading or averaging is permitted in Delaware's proposed regulation for compliance with the mercury mass emissions limits of the proposed regulation. There are no banking provisions in the proposed regulation. The proposed regulation states that compliance with a unit's mercury annual emissions cap may not be achieved through use of acquiring mercury allowances under any state or federal program.

Individual EGU annual mercury mass emissions limits are identified in Table 1.

Table 1 Annual Mercury Mass Emissions Limits

Facility/Unit	Mercury Mass Emissions Limit 2009 – 2012 (ounces)	Mercury Mass Emissions Limit 2013 and thereafter (ounces)
Edge Moor Unit 3	266	106
Edge Moor Unit 4	462	183
Indian River Unit 1	207	82
Indian River Unit 2	216	86
Indian River Unit 3	337	134
Indian River Unit 4	700	278
Total	**2189**	**869**

V. Inventory of Existing Coal-Fired Electric Steam Generating Units [40 CFR §60.25(a)]

In accordance with 40 CFR Part 60, Subpart B, §60.25(a), the State Plan must include "an inventory of all existing designated coal-fired EGUs including emissions data for the designated pollutant." Delaware's mercury budget covers six (6) existing designated coal-fired EGUs operated by 2 (two) facilities. The inventory of the existing designated coal-fired EGUs are presented in Table 2 below. Mercury emission from these units will be limited as provided for in Regulation No. 1146 (see Appendix C), and as explained in Section IV above.

Table 2. Inventory of Existing Designated Coal-fired Electric Steam Generating Units in Delaware

FACILITY NAME	UNIT ID	Capacity MW	FACILITY ADDRESS
NRG Indian River	1	82	Millsboro, DE
	2	82	
	3	177	
	4	442	
Conectiv Edgemoor	3	84	Wilmington, DE
	4	154	

VI. Compliance Schedule for Coal-fired EGUs [40 CFR §60.24(a)]

An owner or operator of each designated existing coal-fired EGU must achieve compliance with the quarterly and annual emission limitations specified in Regulation No. 1146 on a unit-by-unit basis. The owners or operators of EGUs subject to Reg. 1146 shall comply with all applicable Reg. 1146 requirements and this Section 111(d) State Plan on or before January 1, 2009. Mercury allowances are not created under Regulation No. 1146 of this 111(d) plan, and no allowances under any program may be used or traded.

VII. Monitoring, Recordkeeping, and Reporting Requirements

Under 40 CFR §60.24, EGUs are required to comply with the monitoring, recordkeeping, and reporting provisions of 40 CFR Part 75 with regard to mercury mass emissions. The proposed regulation requires demonstration of compliance with the proposed regulation's mercury mass emissions limitations through the use of continuous emissions monitoring systems that are installed, calibrated, operated, and certified in accordance with the requirements of 40 CFR Part 75.

Further, the proposed regulation requires compliance with the monitoring, reporting, and recordkeeping requirements of 40 CFR Part 60, which would include: §60.4170, General Requirements; §60.4171, Initial Certification and Recertification Procedures; §60.4172, Out of Control Periods; §60.4173, Notifications; §60.4174, Recordkeeping and Reporting; §60.4175, Petitions; §60.4176, Additional Requirements to Provide Heat Input Data; and Performance Specification 12A.

In addition to the requirements of 40CFR Part 60 and 40 CFR Part 75, the proposed regulation requires the maintenance of all relevant reports, test results, and records for a period of at least 5-years.

The proposed regulation also requires submittal of semi-annual reports, including, as a minimum, the following information:

- Tabulation of emissions monitoring results reduced to 1-hr averages.
- Calendar year-to-date summation of mass emissions.
- Identification and cause of any invalid data averages.
- Records of repairs, adjustment, or maintenance of the monitoring system.
- Results of all tests, audits, and recalibrations performed during the period.
- Certification statement, and signature of the designated representative.

VIII. Legal Authority to Implement the State Plan [40 CFR §60.26(a)]

Pursuant to 40 CFR §60.26, the Section 111(d) State Plan for existing EGUs must demonstrate that States have legal authority to implement the plan. The demonstration of legal authority must show that the Department is authorized to (a) adopt emission standards and compliance schedules necessary for attainment and maintenance of the State's relevant annual EGU mercury budget under paragraph (h)(3) of this section; (b) to enforce applicable

laws, regulations, standards, compliance schedules and seek injunctive relief; (c) to obtain information necessary to determine whether designated facilities are in compliance with applicable laws and regulations, standards and compliance schedules. The State Plan must also demonstrate that the Department has sufficient legal authority to require the installation, maintenance and use of emission monitoring devices by the owners and operators of designated EGU facilities and to require recordkeeping and reporting provisions of Part 75 of this Chapter with regards to mercury mass emissions including the submission of periodic emission reports. The legal demonstration must also show that sufficient legal authority exists to carry out inspections and to conduct testing of designated EGU facilities.

7 **Del.C.,** Chapter 60, and Delaware's air permitting regulations No. 2 and 30 (See Appendix D-1) demonstrate that DNREC has the necessary legal authority to adopt and carry out this plan. These documents are included at Appendix D to this plan.

APPENDIX A:

70 FR 28606, Clean Air Mercury Rule (CAMR)

- See 70 FR 28606, May 18, 2005.

APPENDIX B:

Documentation Of The Public Participation Process

- Public notice of public hearings occurred on September 1, 2006 in the *Delaware Register*, and the hearings were held September 25, 27 and 28, 2008. The public comment period remained open until October 2, 2006 for written comments.

APPENDIX C:

Regulation No. 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation

- See Regulation No. 1146 was approved by Secretary's Order No. and, pursuant to Delaware law, will go into effect tens after publication in the Delaware Register of Regulations, which should occur on December 1, 2006.

APPENDIX D:

7 Del.C., Chapter 60, and Regulation No. 2 and Regulation No. 30 of the State of Delaware "Regulations Governing the Control of Air Pollution"

APPENDIX D:

Appendix D-1:7 **Del.C.,** Chapter 60
Appendix D-2:Regulation No. 2
Appendix D-3:Regulation No. 30

- 7 **Del.C.,** Chapter 60. See http://www.delcode.state.de.us
- Regulation No. 2 and Regulation No. 30. See http://www.dnrec.state.de.us/air/aqm_page/regs.htm