

BEFORE THE ENVIRONMENTAL APPEALS BOARD  
OF THE STATE OF DELAWARE

In re: Appeal of Regulation No. 1146  
(Electric Generating Unit  
Multi-Pollutant Regulation)

Appeal No. 2006-5  
(Conectiv Delmarva Generation Inc.)

**PREHEARING RESPONSE OF DNREC TO CONECTIV DELAMARVA  
GENERATION'S PREHEARING MEMORANDUM**

Conectiv Delmarva Generation Inc., Inc. ("Conectiv") has appealed the Secretary of DNREC's adoption of Regulation 1146. Regulation 1146 requires Delaware's eight largest and highest emitting electric generating units to reduce emissions of three major air pollutants. The pollutants are sulfur dioxide ("SO<sub>2</sub>"), nitrogen oxides ("NO<sub>x</sub>"), and mercury. Conectiv owns three units subject to Regulation 1146.

<b><u>Conectiv Unit/Description</u></b>	<b><u>Nameplate Rating (MW)</u></b>	<b><u>Year of Initial Operation/ Age of Unit</u></b>
<ul style="list-style-type: none"> <li>• <b>EDGE MOOR 3</b> Dry-bottom pulverized coal fired boiler</li> <li>• Capable of firing coal, oil or gas (natural or landfill)</li> <li>• Has SNCR that is run based on economics as necessary to meet NO<sub>x</sub> SIP Call and NSR based permit caps only</li> <li>• This is a peak load unit – utilized primarily by the grid during times of higher electric demand</li> </ul>	75 MW (a small unit)	1954 / 53 years old
<p><b>EDGE MOOR 4</b></p> <ul style="list-style-type: none"> <li>• Dry-bottom pulverized coal fired boiler</li> <li>• Capable of firing coal, oil or gas (natural or landfill)</li> <li>• This is a peak load unit – utilized by the grid during higher need</li> </ul>	177 MW (intermediate size for DE)	1966 / 41 years old
<p><b>EDGE MOOR 5</b></p> <ul style="list-style-type: none"> <li>• Residual-oil &amp; gas firing boiler</li> <li>• Capable of firing fuel oils, natural gas, and landfill gas in any combination</li> <li>• Because of the relatively high cost of the oil and gas fuels combusted by this unit, it tends to operate primarily during periods of high electric demand.</li> </ul>	446 MW (DE's largest unit)	1973 / 34 years old

NRG Energy Inc. and the City of Dover own and operate the only other electric generating units that are required by Regulation 1146 to reduce emissions. DNREC's 2002

emissions inventory shows that Conectiv, NRG and Dover at basically the top of the list for emitting high levels of the SO<sub>2</sub> and NO<sub>x</sub>.<sup>1</sup> They represented 55 percent of Delaware's 2002 point source NO<sub>x</sub> emissions and 74 percent of point source SO<sub>2</sub> emissions. In 2002, only the on-road and off-road mobile sources categories emitted more NO<sub>x</sub> than coal and oil fired power plants. In addition, as part of Delaware's efforts to attain and maintain compliance with the ozone and fine particulate matter National Ambient Air Quality Standards ("NAAQS"), DNREC and/or EPA has adopted post-2002 control measures that significantly reduce emissions from most of the largest source categories.

Further, mercury is a hazardous air pollutant being emitted at rather high levels from coal burning electric generating facilities including Conectiv's Edge Moor's Units 3 and 4. After the shutdown of Occidental Chemical Corporation, the 2004 Toxic Release Inventory data shows that 77 percent of all of mercury emissions in Delaware come from the 6 coal fired power units subject to Regulation 1146. The TRI report also showed that these 6 coal-fired power plants were the number 1 and number 2 highest toxics emitting sources in the State. These 6 units, including Edge Moor 3 and 4,<sup>2</sup> currently have no specific mercury controls.

### **Regulatory Scheme**

Three specific statutory purposes of DNREC are to provide: "[a] program for the management of the land, water, underwater and air resources of the State so directed as to make the maximum contribution to the interests of the people of the State," "[a] program for the control of pollution of the land, water, underwater and air resources of the State to protect the

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<sup>1</sup> According to 2002 data, Conectiv ranked No. 1 as the largest single point source of NO<sub>x</sub> emissions in Delaware 2002 Base Year Ozone State Implementation Plan Emissions Inventory for VOC, NO<sub>x</sub> and CO for the State of Delaware, Final report dated June 1, 2007 at p. 2-36.

<sup>2</sup> Oil and natural gas burning electric generating units are not required by DNREC's Regulation 1146 to reduce mercury emissions because mercury emissions from those units are significantly less than from coal burning units. Further, the current particulate controls on Units 3 and 4 may already be reducing mercury emissions to some extent.

public health, safety and welfare” and “[a] program for the management of the land, water, underwater and air resources of the State, for public recreational purposes, and for the conserving of wildlife and aquatic life.” 7 *Del. C.* § 6001(c)(1), (2) & (3). Thus, Delaware state law requires the Secretary of DNREC to conserve and protect the environment while ensuring that “the development, utilization and control of the land, water, underwater and air resources of the state” are “employed for beneficial uses and not wasted” and are “protected from pollution in the interest of the health and safety of the public” while “assuring adequate supplies for domestic, industrial, power, agricultural, recreational and other beneficial uses.” 7 *Del. C.* § 6001(a).

### **Federal Clean Air Act**

The federal Clean Air Act further mandates that States improve the quality of their air to the minimum acceptable levels necessary to protect public health, safety, welfare, and the environment. Those minimum health levels are established in primary and secondary (“NAAQS”). States have required timeframes within which to improve their air quality so that they “attain and maintain” compliance with each NAAQS. The original Clean Air Act was enacted in 1963, and it underwent major amendments in 1965, 1967, 1970, 1977, and 1990. NAAQS were established in the 1970 revision. EPA has issued NAAQS for six pollutants: SO<sub>2</sub>, particulate matter, NO<sub>2</sub>, carbon monoxide, ozone, and lead. The NAAQS for particulate matter was revised in 1997, and again in 2004. The NAAQS for ozone was revised in 1997 and is now undergoing revision in 2007. All or portions of Delaware have been in nonattainment for ozone since the NAAQS was first established in 1971. Although it is now 2007, Delaware’s air quality still falls below minimal acceptable health levels for ground level ozone in all three counties, is designated by the EPA as non-attainment for ozone, and the entire state is included as part of the Philadelphia-Wilmington-Atlantic City (PA-NJ-MD-DE) ozone non-attainment area. In

addition, Delaware's air quality falls below minimal acceptable health levels for fine particulate matter ("PM<sub>2.5</sub>") in New Castle County, and New Castle County is designated for non-attainment for PM<sub>2.5</sub> and included in a Philadelphia Consolidated Metropolitan Statistical Area based non-attainment area. Delaware is continuing to make progress towards attainment of both of these NAAQS, and reducing pollution and precursor emissions is paramount to its progress.

In recognition of the unacceptable pervasiveness of non-attainment of the ozone NAAQS, Congress in the 1990 CAA amendments added severe sanctions for States who fail to make progress toward, or to reach the NAAQS. One sanction is to require higher offsets for new sources that want to locate within a non-attainment area.<sup>3</sup> A second is that federal highway grants ranging into the millions of dollars may be lost. However, the most severe sanction for failing to reach attainment remains that the citizens of Delaware, including our children, parents and loved ones continue to breathe unhealthy air.

The federal government tried to balance the need for healthy air with other economic considerations when it enacted the CAA and its amendments. Provisions of the Act required major new sources in non-attainment areas to include the best air pollution controls for both attainment and non-attainment pollutants in their construction. Older major sources were allowed to delay installing up-to-date air pollution controls until they made changes or modifications. This seemed sensible, since pollution control devices would be installed while changes were being made. Yet, despite this requirement of the Act many older sources have not yet been required to install any type of advanced air pollution control equipment. This attempt by Congress to balance interests at the time has led to many of the highest emitting facilities

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<sup>3</sup> Thus, if someone wanted to build a new power plant or a new factory to promote industry and economic growth in a non-attainment area, not only would they have to install LAER level pollution controls (lowest achievable emissions reductions for those non-attainment pollutants), but they would have to offset any expected pollution by more than a 1:1 ratio.

continuing to operate almost 40 years later without those controls being installed. Not coincidentally, many states impacted by those old, highly polluting sources continue to be in non-attainment and continue to have unhealthy air. This previous sentence well describes Delaware, and the three Connecticut units that are the subject of this appeal.

### NO<sub>x</sub>& SO<sub>2</sub>

Delaware needs reductions in NO<sub>x</sub> and SO<sub>2</sub> in order to meet EPA NO<sub>x</sub> SIP Call requirements and to reach attainment with the 8-hour NAAQS for ground level ozone (and the state 1-hour ground-level ozone ambient air quality standards), and the NAAQS for fine particulate matter—in order to gain more healthy air. NO<sub>x</sub> is a precursor chemical to the formation of both ground-level ozone and fine particulate matter. Both ground-level ozone and fine particulate matter cause significant health and environmental impacts.<sup>4</sup> Delaware also needs reductions in SO<sub>2</sub> to reach attainment in New Castle County with the NAAQS for particulate matter emissions (PM<sub>2.5</sub>). SO<sub>2</sub> is a pollutant precursor to particulate matter emissions, and is itself harmful to public health, safety, welfare and the environment.<sup>5</sup> To help Delaware attain the ozone and PM<sub>2.5</sub> NAAQS, and for other reasons (i.e., to reduce toxic emissions from the No. 1 and No. 2 TRI sources, to aid in meeting state regional haze obligations, to reduce Chesapeake and Inland Bay nitrogen deposition, to reduce the impacts of acid rain, and to help mitigate local

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<sup>4</sup> See EPA's Clear Skies Act Technical Support Package p. B9. "Health and environmental effects from high levels of ozone include: ° moderate to large (more than 20%) decreases in lung function resulting in difficulty in breathing, shortness of breath, and other symptoms; ° Respiratory symptoms such as those associated with bronchitis (e.g., aggravated coughing and chest pain); ° Increased respiratory problems (e.g. aggravation of asthma, susceptibility to respiratory infection), which often result in hospital admissions and emergency room visits; ° Reduced productivity for workers in outdoor jobs; ° Repeated exposure to ozone could result in chronic inflammation and irreversible structural changes in the lungs that can lead to premature aging of the lungs and other long-term respiratory illnesses; and ° Damage to forest ecosystems, trees and ornamental plants, and crops.

<sup>5</sup> See EPA's Clear Skies Act Technical Support Package p. B7. "Effects of Sulfur Dioxide (SO<sub>2</sub>). °Contributes to premature death and serious respiratory and cardiovascular illness (e.g., asthma, chronic bronchitis, heart attacks) due to fine particles. °Acidifies surface water, reducing biodiversity and killing fish. °Damages forests through direct impacts on leaves and needles, and by soil acidification and depletion of soil nutrients. °Contributes to decreased visibility (regional haze). °Speeds weathering of monuments, buildings and other stone and metal structures.

impacts on communities), Regulation 1146 was promulgated to require reductions in SO<sub>2</sub> and NO<sub>x</sub> emissions. Regulation 1146 includes two phases of reductions. The first phase of pollution reductions is required beginning May 1, 2009.<sup>6</sup> The first phase consists of an annual emission cap and an interim emission rate limitation. To meet the first deadline, sources are given the flexibility to average emissions among units at a plant. Thus, controls may be installed on one or more units, and then emissions can be averaged with the units who have not yet received controls.<sup>7</sup> In 2012, the final phase of reductions under Regulation 1146 begins. Under Phase II, a more stringent emission rate must be achieved and emissions cannot be averaged among units.<sup>8</sup>

Regulation 1146 is intended to achieve necessary reductions in order to meet the State's obligations toward, among other things reducing toxic emissions from the No. 1 and No. 2 TRI sources, to aid in meeting State regional haze obligations, to reduce Chesapeake and Inland Bay nitrogen deposition, to reduce the impacts of acid rain, to help mitigate local impacts on communities in addition to reaching attainment with Delaware Regulation 3 air quality standards and the Clean Air Act's NAAQS for ground level ozone and for fine particulate matter.<sup>9</sup> Delaware has been in non-attainment with the 1-hour ozone standard for more than 35 years, and in 2004, Delaware was designated as non-attainment for the more stringent 8-hour standard for ground level ozone. The Clean Air Act requires that within 5 years of designation as non-attainment, that Delaware achieve attainment with that standard. Since the standard is set at a level that is supposed to be the minimum necessary to protect public health<sup>10</sup> (with a margin of

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<sup>6</sup> This date corresponds with the ozone season and reductions in Delaware are needed by this date in order to show a Reasonable Rate of Progress towards attainment using the data from that ozone season as required by EPA.

<sup>7</sup> This allows flexibility and time to install pollution controls, as 2 out of 3 sources have more than 1 affected unit.

<sup>8</sup> This date more than 3 years after adoption of the rule demonstrates the Department's expectation and desire to have all of these old, dirty sources reduce their levels of unhealthy pollutants in an appreciable way.

<sup>9</sup> DNREC has counted on these reductions in its Reasonable Rate of Progress Plan that was submitted to EPA to demonstrate the steps Delaware is taking in order to attain the NAAQS.

<sup>10</sup> EPA has determined that this was not met, and in 2007 they proposed a more stringent primary and secondary ozone NAAQS to correct this situation.

safety), that means that Delaware's air quality was not healthy when the designation was made in 2004, and that Delaware's air quality is required to be at healthy levels of these pollutants by 2009. During this entire time of non-attainment, emissions from the Conectiv's smoke stacks have contributed to the problem. DNREC concedes that 35+ years is a long time for citizens to continue to breathe unhealthy air, and Regulation 1146 is a mechanism that Delaware needs to clean up some of the largest sources in the State.<sup>11</sup>

### Mercury

EPA enacted the federal Clean Air Mercury Rule ("CAMR"), a cap and trade program, intended to reduce emissions of mercury from electric generating facilities because they are large mercury sources. Mercury emitted through the stacks from power plants is a hazardous air pollutant. It settles onto land and into water courses, both near and far from the stacks, and then becomes biologically changed into the type of mercury that is toxic to humans. This mercury is a persistent, bioaccumulative neurotoxin. Fish ingest it, and it becomes more concentrated higher up the food chain (i.e., big fish eat lots of little fish, the mercury builds up in the fish, and then humans eat the fish that contain all the mercury.) Higher levels are transferred to humans when humans eat those fish. Mercury ingestion can cause serious health impacts including neurological damage to developing fetuses, infants and children.<sup>12</sup>

Although mercury pollution is a global problem, it is also directly a Delaware problem. Studies show that more mercury is deposited near sources of mercury emissions, such as coal-

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<sup>11</sup> Regulation 1146 is one of many control measures the Department has adopted to show progress toward, and attain the ozone and PM<sub>2.5</sub> NAAQS.

<sup>12</sup> See EPA's Clear Skies Act Technical Support Package p. B7. "Effects of Mercury (Hg). °Impairs cognitive and motor skills with children of women who consume large amounts of fish during pregnancy being the highest risk. °Increases risk of cardiovascular effects (blood pressure regulation, heart rate variability and heart coronary disease) in children and adults. °Impairs reproductive, immune and endocrine systems. °Causes adverse effects, including reproductive and neurological effects, in loons, mink, otter, and other fish-eating animals. °Bioaccumulates so that the concentrations in the fish and animals who eat fish are many times the concentration of mercury in water."

fired electric generating stacks, causing mercury deposition “hot spots.”<sup>13</sup> Indeed, there are 2006 Fish Consumption Advisories related to mercury for the Delaware River from the Delaware State Line to the C & D Canal; the Lower Delaware River and Delaware Bay, and in the Saint Jones River, and Silver Lake. Thus, Delaware citizens cannot take full advantage of their natural fishery resources for fear of harm to themselves. Also, pregnant women and women who may become pregnant fear that they may injure their unborn children because they ate fish caught in our waters. This is not consistent with 7 *Del. C.* § 6001(c)(1), (2) & (3).

Regulation 1146 controls mercury emission rates in two phases, January 1, 2009, and January 1, 2013. In addition to regulating emission rates, mercury mass emissions are controlled in a single step from January 1, 2009, and beyond. Delaware chose this alternative approach to EPA’s cap and trade program because Delaware is obligated to protect its citizens by actually reducing the mercury coming out the stacks of the Delaware coal burning electric generating units and being deposited into Delaware and neighboring water bodies.

In contrast to Delaware’s requirement that each unit reduce its mercury emissions, Conectiv prefers that Delaware adopt CAMR and allow mercury trading. However, modeling done by the EPA predicted that mercury emissions in Delaware would actually increase under CAMR.<sup>14</sup> Delaware’s position is that it will not allow trading of emissions credits for neurotoxins such as mercury under the guise of reducing air contaminants.<sup>15</sup> Like many other states, Delaware will not participate in CAMR and has submitted Regulation 1146 to the EPA as

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<sup>13</sup> A U.S. EPA-funded research study -- conducted in 2003 and 2004 in Steubenville, Ohio – used rain samples and meteorological data to track mercury from smokestacks to monitors and concluded that nearly 70 percent of the mercury in rain collected at an Ohio River Valley monitoring site originated from nearby coal-burning industrial plants.

<sup>14</sup> Based on EPA IPM results, IPM predicted increased capacity factor of the Delaware coal units and no installation of mercury controls. Thus, the IPM results also predicted higher mercury emissions.

<sup>15</sup> Indeed, Delaware, along with other states, has sued EPA for violating Section 112 of the CAA, and failing to be protective of public health and welfare in enacting the CAMR rule which allows trading in this neurotoxin rather than requiring actual emissions reductions.

an alternative to its CAMR program. Regulation 1146 is the rule that will prevent EPA's CAMR from allowing mercury emissions to increase in Delaware.

Conectiv's electric generating units subject to Regulation 1146 for mercury reductions were built in 1954 (Edge Moor 3) and 1966 (Edge Moor 4). While some of the existing pollution controls may reduce mercury emissions, none of these units presently have controls expressly geared towards reducing mercury. Further, although Conectiv is now challenging the requirement relating to mercury, the report from its consultant submitted during the record of the hearing indicating that because Conectiv had committed to installing activated carbon injection systems on those units, the report did not evaluate the costs associated with the other technologies to see which would be more cost effective.<sup>16</sup> Indeed, the report indicates that Conectiv may not even find it necessary to install the ACI systems, but intends to do so as a safeguard, because of the large inherent mercury removal of the current systems.<sup>17</sup> This is possible because Regulation 1146 does not specify how Conectiv must achieve mercury reductions, and also because the Regulation gives two compliance alternatives. Phase I applicable on January 1, 2009, requires Conectiv to meet a standard of either 1 pound per trillion Btu mercury emission rate or an 80 percent reduction. Phase II, applicable on January 1, 2013, requires Conectiv to meet a 0.6 pounds per trillion Btu emission rate or a 90 percent reduction.

### **Need for Regulation 1146**

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<sup>16</sup>“Evaluation of the Compliance Implications to Conectiv's Edge Moor Plant to Meet Delaware's Electric Generating Unit Multi-Pollutant Regulation” dated September 2006 at p. 4. “Mercury Controls. °Activated Carbon Injection (ACI). °Hallogenated Activated Carbon Injection (HACI). The model normally evaluated several other mercury control options (e.g., COHPACT), but only evaluated ACI in this analysis, because of Conectiv's commitment to install this technology.

<sup>17</sup>“Evaluation of the Compliance Implications to Conectiv's Edge Moor Plant to Meet Delaware's Electric Generating Unit Multi-Pollutant Regulation” dated September 2006 at p. 7. “The modeling indicated that Edge Moor 3 & 4 may not have to install activated carbon (ACI) under the DE-3P Rule, because of the large inherent mercury removal at these two units. However, ACI would be installed as a safeguard to insure compliance with DE-3P Rule because of the potential variability in the mercury content of coal.”

Conectiv points out in its Prehearing Memo at p. 2 that it has demonstrated its commitments to environmental stewardship and to the welfare of the people of Delaware. Conectiv states that over the last decade Edge Moor has voluntarily used lower sulfur coal and oil than is required by law. This does benefit the environment. However, Conectiv does not point out that the use of lower sulfur fuels was necessary to alleviate or address issues with opacity violations from one of the units or that it has provided an economic benefit to Conectiv by reducing its use of Acid Rain SO<sub>2</sub> allowances (which it can sell to the economic advantage of Conectiv). Conectiv states that it has lowered emissions of NO<sub>x</sub> by instituting various Reasonably Available Control Technology (“RACT”) systems. This does benefit the environment. However, Conectiv does not mention that it was required by law to install those systems, and that it went as far as to appeal the Department’s promulgation of the RACT regulations in 1993. Further, Conectiv tells you that it voluntarily installed selective non-catalytic reduction (“SNCR”) technology on Unit 3. Conectiv leaves out of this statement that although the installation of the technology was voluntary, Conectiv benefits economically through the utilization of the SNCR system by controlling NO<sub>x</sub> emissions during the ozone season and reducing its need to purchase allocation under the NO<sub>x</sub> Budget Program (a program which Conectiv also appealed the Department’s promulgation of in 1997). Conectiv also fails to mention that the Unit 3 SNCR system is relied upon to provide emission reductions required by Regulation 1125 to provide for the operation of the Hay Road electric generating units. Further, this voluntary installation of the SNCR was used to help justify not installing RACT that was required in response to the 1993 NO<sub>x</sub> RACT Regulation 12. However, despite these regulatory drivers, Conectiv did not meet the presumptive 0.15 lb/mmBtu emission rate on any of its three subject units that are relied on in the Department’s State Implementation Plans,<sup>18</sup> and it only runs

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<sup>18</sup> The basis for the regional NO<sub>x</sub> cap and trade programs, Regulation 37 and 39, is 0.15 lb/mmBtu.

the SNCR on an “as needed” basis to keep it under its regulatory/permit cap and when economically advantageous to do so. In fact, Conectiv turns the SNCR that reduces NO<sub>x</sub> off and emits higher levels of this pollutant for significant parts of the year, and even turns it off at times during the ozone season. Finally, Conectiv points out that it equipped Edge Moor with systems to use landfill gas produced from the nearby Delaware Solid Waste Authority’s (“DSWA”) Cherry Island Landfill as a supplemental fuel for use in its boilers, which negates the need for DSWA to flare and/or release those gases into the atmosphere. DNREC agrees that there are environmental benefits from utilizing landfill gas for fuel as opposed to it being flared by DSWA. Nonetheless, Conectiv does not mention that the landfill gas is lower in sulfur than the coal it would otherwise purchase and tends to produce lower NO<sub>x</sub> emissions than the coal and residual oil fuels predominately fired at Edge Moor. Further, Conectiv pays for the DSWA gas at a Btu level commiserate with a less expensive grade of coal than Conectiv actually uses. Consequently, the DSWA gas is a less expensive fuel. Thus, while there is an environmental benefit to Delaware, there are also economic incentives in that the fuel is cheaper and has less of a sulfur content (which would reduce emission rates of SO<sub>2</sub>) which would allow the unit to be utilized more because it would help it stay beneath its annual SO<sub>2</sub> emissions rate and cap. It may be clearer now, after hearing the non-stated facts, that Conectiv’s demonstration of its commitment to environmental stewardship shows perhaps less altruism than one might have gleaned from the Prehearing Memo. The above discussion may also help to shed some light on Conectiv’s Prehearing Memo’s statement which speaks of its desire to do more: “CDG also would be in favor of making a significant commitment of resources toward further demonstrable environmental benefits; however, DNREC has not shown any substantiated or significant environmental benefits flowing from the Rule.” In reality, Conectiv has demonstrated that it will

do little without a regulatory driver and will litigate against any regulatory driver that does come out. However, once forced to make reductions, Conectiv then touts itself as a good environmental steward.

Indeed, before DNREC went to the step of adopting Regulation 1146, Secretary John A. Hughes contacted Conectiv and NRG by letters dated March 4, 2004 (“Secretary’s Voluntary Emission Reduction Letter”). The Secretary’s Voluntary Emission Reduction Letter stated in pertinent part:

*Consistent with your discussions over the past few months, and in response to the Governor’s call for a reduction in emissions of sulfur dioxide (SO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>) and mercury, and the capping of carbon dioxide (CO<sub>2</sub>) emissions from Delaware’s commercial power plants, I am setting forth the following path forward:*

- *Voluntary agreements between DNREC and Delaware’s commercial power plants will first be pursued. You will have an opportunity to deliver an acceptable reduction plan to DNREC by June 1, 2004.*
- *An acceptable reduction plan must meet our main two criteria*
  - *The plan must produce significant emission reductions from power plants and*
  - *The reductions must be realized not later than 1/2/2008.*
- *The focus of our effort will be on coal and residual oil fired units.*
- *If the voluntary plants do not materialize or are not acceptable to DNREC, then we will initiate the regulatory development process on June 2, 2004. Committee meetings will be scheduled, a draft regulation will be developed by the end of September, and final adoption will be by December 31, 2004. (emphasis added)*

Although Conectiv met with DNREC after that time frame and discussed some proposals, DNREC does not have an acceptable plan submitted in writing to it outlining Conectiv’s response to the above letter. Consequently, DNREC was unable to pursue its original desire to obtain voluntary reductions sufficient to meet its need to reduce pollution. On January 6, 2006, DNREC sent Conectiv another letter indicating that it was establishing a review committee to develop a regulation (ultimately Regulation 1146) to facilitate a reduction of air emissions from Delaware’s coal and residual oil fired power plants (“Regulation Schedule Letter”). The Regulation Schedule Letter indicated Conectiv’s units at Edge Moor would be part of a

regulatory proceeding and that the pollutants to be regulated would be NO<sub>x</sub>, SO<sub>x</sub> and mercury.<sup>19</sup> The letter set a schedule for development of the Regulation with a date of May 31, 2006, for having a second draft of the regulation ready to discuss. DNREC tried to abide by this schedule. Thus, Conectiv was and has been on notice since as early as March of 2004, that DNREC intended to require a significant decrease in emissions of NO<sub>x</sub>, SO<sub>2</sub> and mercury from its units and that DNREC planned to require those reductions by no later than January 2, 2008.

Regulation 1146 was promulgated after the Department held 3 public workshops and 3 public hearings, 1 in each County. The hearings were far more well-attended than usual for DNREC air regulatory hearings, and there was great public support for Regulation 1146. There was some industry comment against it, but there was also some public comment indicating that the rule was not stringent enough. Regulation 1146 was finalized in January of 2007.<sup>20</sup> When the Regulation was proposed, the date for implementation of the Phase I controls was proposed as January 1, 2009. After considering comments from the stakeholders about the amount of time necessary to install controls, and a review of the information on the record, the Secretary believed that the proposed date was achievable, but determined there was room for additional flexibility and decided that pushing the date back to May 1, 2009 was warranted. This date gave 5 more months for construction, and still coincided with the start of the ozone season in order to make the benefit from the reductions be realized in the 2009 ozone season. Further, the

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<sup>19</sup> The letter stated the following concerning those pollutants: “ °NO<sub>x</sub> is one of the key air pollutants that cause Delaware’s ground level ozone problem, and an associated larger regional ozone problem that covers much of the eastern United States. °Both NO<sub>x</sub> and SO<sub>x</sub> are significant contributors to Delaware’s fine particulate matter problem, the associated larger regional fine particulate matter problem and the regional haze problem. °Mercury is a toxic heavy metal, which, when ingested, can cause serious neurological damage, particularly to developing fetuses, infants, and children. “

<sup>20</sup> The date the Rule was finally promulgated was 2 years after the anticipated date in the schedule that the Secretary’s voluntary emissions reductions letter set for final adoption of any regulation. Further, the schedule in Secretary’s voluntary emissions reductions letter was for voluntary reductions to take place no later than January 2, 2008, and the first Phase of reductions from Regulation 1146 are not going to be required until May 1, 2009, which is a year and a half later than the schedule set in the Secretary’s voluntary emissions reductions letter.

Secretary modified the proposal in response to public comments from stakeholders to provide for a 1 year extension to the May 1, 2009, for SO<sub>2</sub> emissions reductions if a source was able to show that it was unable to complete installation of emission controls by the May 1, 2009, deadline. The Secretary required this demonstration because the public record showed that the original dates in the regulation were achievable and additional time would likely only be needed in exceptional circumstances.

Further, the Secretary in his order promulgating the regulation directly addressed concerns about the balance between protecting the environment and public health and requiring emissions reductions from industry:

*This regulation shows that the Department's experts have struck a fair balance in determining the emissions limits. They have relied upon accepted industry information that the pollution control 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 that the Department undertake by January 11, 2010, a complete 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 Sections 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.*

Thus, the Secretary believed that Regulation 1146 provided the proper balance. However, in addition to adopting the regulation, he ordered DNREC to undertake an "Interim Review" to reevaluate and reconsider the appropriateness of the standards no later than January 10, 2010

(after the first but prior to the second Phase of compliance dates). Such an action is reasonable given the fact that industry, who does not like to incur what they feel are unnecessary costs, often provide reasons why control technology is too expensive and or impossible to install, despite there being evidence to the contrary. However, this is a more specific case where the regulated entities generate a product that may be essential to the public good. Thus, the Secretary provided additional safeguards to prevent unwanted and undesired impacts.

The Department is not completely sure, even, that the reductions anticipated from all of the control measures it is adopting (to include those attributable to Regulation 1146) will be sufficient to reach attainment, although it believes they will be sufficient. Nonetheless, the reductions will significantly reduce pollution from these power plant units that have been huge sources of mercury, SO<sub>2</sub> and NO<sub>x</sub> over the past 34 to 53 years. In addition, even after attainment is reached, measures must be put in place to ensure attainment is maintained with the current NAAQS, the 2006 PM<sub>2.5</sub> NAAQS, and the new ozone NAAQS likely to be promulgated in 2008.

### **Connectiv Specific Arguments**

Connectiv argues that the Department should have simply participated in EPA's Clean Air Interstate Rule instead of promulgating Regulation 1146. The Clean Air Interstate Rule (also called "CAIR") is another emissions trading rule, where a source can purchase emissions credits from other sources, including out-of-state sources, to allow it to continue to emit at its current levels without installing pollution controls.<sup>21</sup> DNREC does not believe, mainly because of this trading aspect, that CAIR alone is sufficiently protective of Delaware citizens, who should not suffer the health effects of continued emissions levels of SO<sub>2</sub> and NO<sub>x</sub> and continued nonattainment with the NAAQS. In fact, EPA's CAIR modeling showed that should Delaware not promulgate Regulation 1146 and only participate in the CAIR program, pollution emissions

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<sup>21</sup> The Department has promulgated similar cap and trade programs in Regulation 37 and Regulation 39.

inside the State may actually increase. Indeed, the federal NO<sub>x</sub> Budget Rule, implemented in Delaware under Regulation 39, allows for trading of NO<sub>x</sub> emissions. So Delaware's State Implementation Plans, logically, assume a reduction from this program. However, since implementation of that rule, NO<sub>x</sub> emissions on an area-wide basis have exceeded their NO<sub>x</sub> SIP Call, Regulation 39 NO<sub>x</sub> allowance allocations. The Hearing Officer summarized Delaware's experience with cap and trade programs well in his report at page 15:

“Simply stated, the federal market based programs have not and are not expected to work to clean Delaware's air. While they may reduce emissions in other states, and while they may result in less pollution being transported into Delaware from upwind states, they will not reduce the emissions from within Delaware. Thus, the Department's exercise of its state authority is appropriate in the face of Delaware's experience with a federal program that has and will not produce and state environmental [benefit] in improved air quality and reduced Delaware emissions from these large sources of air pollution and public health benefits.

Conectiv argues both that DNREC's limits on its units are too stringent and will render its assets economically useless and that DNREC should have adopted CAMR and CAIR rather than its Regulation 1146. First, the Department heard and did not accept this argument during the development of Regulation 1146. The public record demonstrates that controls on power plants are highly cost effective relative to other control measures the Department has evaluated or adopted. Also, these arguments are counter intuitive since modeling runs under CAIR indicate that the oil-fired units (one of which is specifically Edge Moor 5) in Delaware would likely have no emissions because economics are likely to indicate they would shut down under CAIR.<sup>22</sup> Thus, Conectiv prefers that DNREC's simply implement CAIR and allow emissions trading, which anticipates Conectiv's newest unit , Unit 5, would not be economically viable.<sup>23</sup>

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<sup>22</sup> EPA CAIR IPM modeling runs supporting EPA's CAIR Rule shows that Conectiv's Edge Moor Unit 5 would likely be rendered economically useless should Delaware have simply adopted the CAIR Rule.

<sup>23</sup> The IPA modeling runs supporting EPA's CAIR Rule shows that Conectiv's Edge Moor Unit 5 would likely be rendered economically useless should Delaware have adopted the CAIR Rule.

Further, EPA's CAIR Modeling shows that despite adoption by the Northeastern States of CAIR, New Castle County would not be able to reach attainment with the ozone NAAQS based on emissions reductions associated with CAIR. In addition, DNREC did air quality monitoring that zeroed out the contributions from all sources other than Delaware sources. The results of the computer modeling showed that Delaware's emissions alone cause ozone non-attainment all by themselves under certain meteorological conditions.

Conectiv also argues that emissions averaging is a better way to achieve lower emissions rates from within a facility, instead of unit-by-unit allowable rates. That way, Conectiv could choose to install the best pollution control equipment on certain units within its facility and control the limits below what is required. Then it could install less expensive and less effective controls on its other units, or leave them uncontrolled. While that sounds like it is not a bad solution, what it does is to continue to allow very highly emitting sources of air pollution to continue to emit very high levels of pollution. These sources are among the largest in Delaware and have been emitting at these high levels for between 34 and 53 years. Again, what Conectiv seeks to avoid installing are commercially available air pollution controls that have been demonstrated to be effective in retrofit installations and that would be required under the CAA and Regulation 25 (Preconstruction Review) upon modification of these units.<sup>24</sup> Despite this, if the Regulation 1146 limits were designed to provide the remaining reductions necessary to achieve attainment, there would be more basis for Conectiv's argument. However, compliance with Regulation 1146 is not based on what is needed for attainment, because those reductions are just not enough to achieve attainment. The concept is that through Regulation 1146 all of the subject EGUs (among the largest emitting sources in Delaware) would install proven and cost effective controls, and Delaware will seek additional needed reductions from other source

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<sup>24</sup> As indicated earlier, these units have not yet been subject to NSR requirements that were adopted in the 1970s.

categories (e.g., mobile sources, large industrial boilers, distributed generation, AIM coatings, etc.). The bottom line is although these reductions are necessary to work towards attainment, irrespective of that, it is not in the interest of the environment and the health of the people of the state of Delaware to allow the largest sources of this pollution to continue to emit at these high levels.<sup>25</sup>

Conectiv continues to make its prior unsubstantiated claim that Regulation 1146 may cause the early retirement of its units. (Study at p. 13 and Prehearing Memo at p. 16). Conectiv failed to provide the Secretary with data in the record concerning the normal life expectancy of these highly polluting, old units. Such data would be necessary before the Secretary could consider Conectiv's claims which imply that units which are 53, 41, and 34 years old have any realistic life expectancy left before retirement. Had Conectiv provided data, on or committed to, specific retirement dates for any of these units, the Department could have given more weight to Conectiv's bald assertions. Further, part of the rationale for not allowing emissions averaging is to prevent sources such as Conectiv from shutting down its oldest units because they are no longer viable and then transferring its pollution allowances to other, newer units. Such a result would, in effect, negate any actual emissions reductions and be contrary to the purposes of Regulation 1146, which is to require actual emissions reductions to improve in air quality.

Conectiv submitted its Compliance Plan on June 27, 2007, setting out the actions it intends to take to reach compliance with Regulation 1146. Recall that Conectiv's consultant concluded that Conectiv could not meet the Regulation 1146's SO<sub>2</sub> emissions reductions by installing sodium-based dry sorbent injection in the Expert Report at p. 4, Fn 4. submitted to the

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<sup>25</sup> There may also be other economic benefits associated with these control technologies. Should Conectiv install controls on each unit sufficient to meet the levels required, it could still over control other units and achieve a benefit, as it could then sell NO<sub>x</sub> emissions credits in the CAIR program. In effect, Conectiv is then reimbursed for some of the costs of the controls, while Delaware citizens would benefit from improved air quality.

Secretary (and because of that the Report did not evaluate the cost effectiveness of those controls). The cost data and time frame arguments made by Conectiv in the record are based on this expert's conclusions, which said that Conectiv must install flue gas scrubbers to comply with the SO<sub>2</sub> reductions in the Regulation. Nonetheless, in its Compliance Plan, Conectiv certifies to DNREC that it intends to reach the SO<sub>2</sub> limits of the Regulation using a sodium-based dry sorbent injection system to reduce SO<sub>2</sub> emissions on Units 3 and 4 and use a lower sulfur residual fuel oil to lower emissions of SO<sub>2</sub> for Unit 5. Thus, both Conectiv's arguments about the expense of the SO<sub>2</sub> controls and the credibility of its expert's conclusions are undermined by its own submissions. Furthermore, while the expert report puts the costs of compliance with Regulation 1146 at \$243.3 million, Conectiv's Prehearing Memo at page 4 states that SCR and FGD comprise the majority of that capital investment (which Conectiv does not intend to install according to its Compliance Plan). The same expert report states the following: "The proposed DE-3P Rule's 24 hour averaging provisions for NO<sub>x</sub> is, to the best of our knowledge, unprecedented." Nevertheless, the Department's Technical Response Document at p. 12 states: "[t]here are other dry bottom utility boilers in the U.S. that operate SCRs on an average basis and achieve NO<sub>x</sub> emission rates lower than 0.09 lb/MMBTU on an average basis." It further noted that "[a]t least one such unit even has a NO<sub>x</sub> emissions compliance determination on a rolling 24 hour basis. In addition, the record justifies the use of the rolling 24-hour average basis because of the need to achieve reduced short term emissions that correspond with the 8-hour ozone NAAQS standard and the need for consistent NO<sub>x</sub> reductions, particularly during the hottest and sunniest hours of the day, which coincide with peak electric generation. Finally, the Department's Regulation 12, which was promulgated in 1993 and which these same Conectiv

units are subject to, requires compliance on this same 24-hour rolling basis. Thus, it is peculiar that Conectiv would claim that the 24-hour averaging time is unprecedented.

Conectiv's Prehearing Memo is rife with arguments that are illogical based on the Compliance Plan it submitted. On page 9, Conectiv states that it cannot install SCR and FGD within the required time frame. However, despite DNREC's contention that this statement is not accurate, nowhere in Conectiv's Compliance Plan does it say that Conectiv intends to install SCRs or FGD. Instead, Conectiv states its intention to layer other technologies, including technologies its own consultant claimed could not achieve the necessary emissions reductions (duct sorbent injection). Apparently Conectiv disagrees with more than one of the conclusions of its consultants. Conectiv indicated as early as the March 2007 regulatory stakeholder group meeting that layered NO<sub>x</sub> controls and duct sorbent injection were its choices for Edge Moor and even predicted installation and operation of controls by 2009. It apparently continues to believe in this conclusion, because duct sorbent injection is part of its Compliance Plan. Conectiv also seems to disagree on the topic of mercury reductions. In the Conectiv's expert's report, it is noted that they have included an evaluation of the costs of ACI even though they do not think ACI is necessary to achieve compliance. The report states that ACI costs are included because Conectiv disagrees with its conclusion that they are not necessary, and so Conectiv has committed to the ACI installation.

Conectiv claims that it had inadequate time to comment on the proposed Regulation 1146. Conectiv had actual notice that the Department intended to take actions if Conectiv did not voluntarily reduce emission when the Secretary's Voluntary Reduction letter was sent in March of 2004. Further, Conectiv participated in the stakeholder meetings to develop the regulation. In addition, Conectiv attended some or all of the hearings and submitted oral and

voluminous written comments on the Regulation. Conectiv argues that it had insufficient time to review the Technical Support Document, but most of the information in the Technical Support Document was a compilation/summary of the huge record of publicly available information before the Secretary in a more easily understandable fashion that was produced to help the non-technical public better understand it.

DNREC followed the appropriate public notice and comment provisions of the Delaware Administrative Procedures Act. 29 *Del. C.* § 10115 providing the requirements for adequate public notice:

“(a) Whenever an agency proposed to formulate, adopt, amend or repeal a regulation, it shall file notice and full text of such proposals, together with copies of the existing regulation being adopted, amended or repealed, with the Register of Regulations pursuant to § 1134 of this title.

(1) The notice shall describe the nature of the proceedings, including a brief synopsis of the subject, substance, issues, possible terms of the agency action, a reference to the legal authority of the agency to act and reference to any other regulations that may be impacted or affected by the proposal;

(2) The notices shall state the manner in which persons may present their views: (i) if in writing, of the place to which and the final date by which such views may be submitted; or (ii) if at a public hearing, the date, time and place of the hearing. If a public hearing is to be held, such public hearing shall not be scheduled less than 20 days following publication of the notice of the proposal in the Register of Regulations.

(b) If a public hearing will be held on the proposal, notice of the time, date, place and a summary of the nature of the proposal shall also be published in at least 2 Delaware newspapers of general circulation a minimum of 20 days prior to such public hearing.

(c) The notice shall also be mailed to all persons who have made timely written requests of the agency for advance notice of its regulation-making proceedings.

DNREC provided the required newspaper notices, and it provided the required publishing of the entire text of the proposed Regulation 1146 in the Registrar of Regulations. Consequently, DNREC has neither failed to provide adequate public notice nor failed to include Conectiv throughout the long process and Conectiv seems to seek to create a procedural error that simply does not exist.

Conectiv argues that DNREC acted arbitrarily and capriciously by setting unit specific annual mass emissions limits that will unnecessarily restrict unit operations. Conectiv points out that if a unit complies with the short-term emissions standards, it might have to further restrict emissions in order to meet the annual cap. This argument relates to Unit 5, where the only short-term SO<sub>2</sub> emissions restriction Regulation 1146 imposes is that Unit 5 will not be allowed to burn residual oil with a sulfur content of more than 0.5 percent. The annual SO<sub>2</sub> emissions cap on Unit 5 would thus allow it to run at 24 percent of its annual electric generating capacity if it were strictly fired on residual oil with a 0.5% sulfur content. Keep in mind that Unit 5 also burns landfill gas which contains sulfur and natural gas (although natural gas has a minimal or negligible sulfur content). Thus, the more that Conectiv uses the lower sulfur content fuel such as 0.3 percent sulfur residual oils,<sup>26</sup> natural gas or landfill gas (whose supply has increased recently with upgrades to the landfill gas collection system and which is anticipated to increase further with future upgrades), the more hours Conectiv will be able to utilize Unit 5 while staying below the annual cap. Further, Conectiv could install emissions equipment or devices to actually control its SO<sub>2</sub> emissions, such as FGD technology. FGD scrubber technology has been applied to residual oil fired units overseas, to reduce their SO<sub>2</sub> emissions. FGD technology installation would allow Conectiv to operate Unit 5 while staying below its annual SO<sub>2</sub> emissions cap. Consequently, Conectiv is not as restricted as it argues in its presentation by the annual SO<sub>2</sub> emission cap on Unit 5. The facts show that Unit 5 will be able to operate at its historic high levels of 24 percent capacity even utilizing the 0.5 percent sulfur oil.<sup>27</sup> In reality, it is restricted

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<sup>26</sup> 0.3 percent sulfur residual oil is available, and is required by many states, including New York and New Jersey.

<sup>27</sup> Although Unit 5 is a large unit that is capable of carrying base load, because it is oil or natural gas and those fuels have been more expensive to run, it has never historically operated at anywhere close to capacity since its historic high levels are equal or less than 24 percent. Unit 5's highest capacity years are years when (the less expensive) nuclear plants are not running and it is then called on to carry some base load. (The grid calls on power sources beginning at the least expensive and, as needed, calls for utilization of the higher costing units.)

more by the cost effectiveness of purchasing lower sulfur residual fuel oil and gas fuels since Conectiv's Compliance Plan states that the only control it intends to utilize for SO<sub>2</sub> on Unit 5 is to receive a lower sulfur content no. 6 residual fuel oil. In fact, this is a good place to point out that burning coal is usually associated with higher pollution emissions than burning oil. Nonetheless, the standard in the Regulation of utilizing 0.5 percent sulfur oil actually results in the emissions from oil exceeding those allowed from coal emissions (since 0.5 sulfur coal translates approximately into a rate of 0.5 lb/mmBtu of SO<sub>2</sub>) and Regulation 1146 requires the coal units emissions to be below 0.37 lb/mmBtu of SO<sub>2</sub> in Phase I and 0.26 lb/mmBtu of SO<sub>2</sub> in Phase II. Thus, without the annual cap on Unit 5, the oil unit would actually be allowed to emit more pollution than the traditionally more polluting coal units. This construct of Regulation 1146 was intentional: to allow the use of highly cost effective controls at lower capacity factors, but to require units to meet lower emissions rates as the capacity factors go up.

Conectiv states that it employs more than 108 people and provides work for numerous contractors. In total, it says that the Edge Moor accounts for over \$4.5 million per year in Delaware state tax revenue and \$1.2 million per year in city, county and school district tax revenue. The Hearing Officer's rationales which were adopted by the Secretary indicate that the Department has considered the cost to the regulated entities in addition to the costs to the state and people of Delaware if these unhealthy air emissions are not reduced. Nonetheless, Conectiv asserts an argument that the impacts are too costly, based in large part on the claims of its expert report about the costs of compliance. Nonetheless, Conectiv has not supported this data by specifying the anticipated life expectancy of its units (over which time costs would be spread). Further, Conectiv has chosen to install mercury controls that its expert deems not necessary (at a substantial cost). In addition Conectiv's Compliance Plan describes controls that are less

expensive than those that form the basis for the costs of the expert's reports. In so doing, Conectiv completely undermines the credibility of its expert and the conclusions relating to cost.

Finally, the grid utilizes power generation from the least expensive to the more expensive. Currently, Conectiv may "enjoy the benefit" of being able to generate power at less cost because it is an older, dirtier plant that does not have as many pollution controls to run with their associated incremental costs. However, DNREC does not intend for that to continue to happen at the expense of the health of its citizens. DNREC does not believe it is reasonable (either to impacted citizens or to other corporate citizens who have or will be incurring costs to install controls to reduce their pollution emissions) for Conectiv to continue to remain one of the largest pollution sources in Delaware.

### **Standard of Review**

Seven Del. C. § 6008(c), which allows appeals to the Board requires that this Board review the Secretary's decision based on the record before the Secretary. The Board may hear new evidence if it is relevant or clarifies those issues in the record before the Secretary. The Regulations are presumed to be valid and the Appellants have the burden to show that the regulations are arbitrary and capricious, or adopted without a reasonable basis in the record. Further, the Board is required to take due account of the Secretary's experience and specialized competence and of the purposes of Chapter 60 in making its determination.

### **Conclusion**

In this case, Conectiv has not supported its arguments with sufficient basis to overcome the presumption that the Regulation's adoption was valid or that the Secretary's decision was arbitrary or capricious or without a reasonable basis in the record. DNREC believes that the record shows the Secretary's action in adopting Regulation 1146 was reasonable and well

