EXHIBIT E

HEARING REPORT

Prepared Pursuant to Section 4-168(d) of the Connecticut General Statutes and Section 22a-3a-3(d)(5) of the Department of Environmental Protection Rules of Practice

Amendment of Section 22a-174-3a of the Regulations of Connecticut State Agencies

Hearing Officer:
Merrily A. Gere

Date of Hearing: October 31, 2006

On August 31, 2006, the Commissioner of the Department of Environmental Protection (Commissioner and Department, respectively) signed a notice of intent to amend section 22a-174-3a of the Regulations of Connecticut State Agencies (R.C.S.A.). Pursuant to such notice, a public hearing was held on October 31, 2006, with the public comment period for the proposed amendment closing on November 3, 2006. The proposed amendment is intended to address some of the state's obligations under the Clean Air Mercury Rule or CAMR (70 FR 28606, May 18, 2005; *on reconsideration* 71 FR 33388, June 9, 2006).

I. Hearing Report Content

As required by section 4-168(d) of the Connecticut General Statutes (C.G.S.), this report includes: a description of the proposed amendment; the principal reasons in support of the proposed amendment; the principal considerations presented in comments opposing the proposed amendment; all comments made and responses thereto regarding the proposed amendment; and the final wording of the proposal. Commenters are identified in Attachment 1.

This report also includes a statement in accordance with C.G.S. section 22a-6(h).

II. Federal Standards Analysis in Compliance with Section 22a-6(h) of the General Statutes

Pursuant to the provisions of C.G.S. section 22a-6(h), the Commissioner is authorized to adopt regulations pertaining to activities for which the federal government has adopted standards or procedures. At the time of public notice, the Commissioner must distinguish clearly all provisions of a proposed amendment that differ from ***applicable*** federal standards or procedures (*i.e.*, federal standards and procedures that apply to ***the same persons*** under the proposed state regulation or amendment). The Commissioner must distinguish any such provisions either on

the face of such proposed amendment or through supplemental documentation accompanying the proposed amendment. In addition, the Commissioner must provide an explanation for all such provisions in the regulation-making record required under Title 4, Chapter 54 of the C.G.S. and make such explanation publicly available at the time of the notice of public hearing required under C.G.S. section 4-168.

In accordance with the requirements of C.G.S. section 22a-6(h), the following statement was available at the time of the notice of the public hearing and was entered into the administrative record in the matter of the proposed amendment:

The proposed amendment adds provisions to the Department's new source review (NSR) permitting program to address mercury emissions from any new coal-fired electric generating units (EGUs) that may be constructed in Connecticut. The provisions include requirements to limit mercury emissions in accordance with a state cap on mercury emissions assigned in 40 CFR 60.24(h) as well as monitoring, record keeping and reporting requirements that apply to the owners and operators of coal-fired EGUs. Upon adoption, the amendment will serve as a portion of the State's plan to implement and enforce CAMR. The proposed action is consistent with federally adopted standards and procedures.

III. Summary and Text of the Proposal

The addition of new subsection (n) to R.C.S.A. section 22a-174-3a addresses mercury emissions from the coal-fired EGUs or "CAMR units" operating in Connecticut. Currently, there are three CAMR units operating in Connecticut -- Bridgeport Harbor unit #3 operated by PSEG Power Connecticut, LLC and two units operated by AES Thames LLC. The addition of subsection (n) to R.C.S.A. section 22a-174-3a ensures that all CAMR units in the state, including the three existing units and any new units that may be constructed, will be subject to permit limitations to maintain the combined mercury emissions from all such units at a level below the state mercury emissions cap established in CAMR. This amendment is a necessary element of the state plan required of Connecticut to satisfy CAMR.

The text of the proposed amendment is located in Attachment 2 to this report.

IV. Principal Reasons in Support of the Proposal

The primary purpose of the proposed regulatory action is to address some of the Department's obligations under CAMR to regulate mercury emissions from coal-fired EGUs. Under proposed subsection (n), no person will be granted a permit to construct and operate a coal-fired EGU unless such an EGU can be operated to limit mercury emissions so that the state will remain in compliance with CAMR. Proposed subsection (n) also addresses the monitoring, recordkeeping and reporting required under CAMR.

Importantly, proposed subsection (n) supports the Department's decision to opt-out of the federal mercury emissions cap-and-trade program. The state mercury budget of CAMR is assigned in two phases: Connecticut's Phase 1 budget of 106 pounds of mercury per year applies beginning in 2010, and a Phase 2 budget of 42 pounds of mercury per year applies in 2018 and beyond. As

one approach to meeting these budgets, CAMR offers each state the option of participating in a national mercury emissions trading program. To achieve more certain reductions in mercury emissions and thereby ensure better protection of public health and the environment, the Department chooses to opt-out of the federal mercury emissions trading program. As a result, the state mercury budgets assigned under CAMR become an upper limit, a so-called "cap," on the total emissions from all the coal-fired EGUs in the state. The proposed amendment provides a mechanism to enforce the state mercury emissions caps.

V. Principal Considerations in Opposition to the Proposal

No comments opposed moving the proposed new subsection forward for approval and promulgation. Some comments suggested the need for revision to the proposal to match the timing and level of the federal state emissions caps assigned under CAMR, to change the time period basis for determining compliance, to specify a compliance date and to better coordinate with the requirements of C.G.S. section 22a-199. One commenter even suggested that the Department should exercise the option to participate in the national mercury emissions cap-and-trade program. Comment also notes the difficulty of evaluating the proposed amendment without the benefit of simultaneous comment on the modified NSR permits for the existing units and the CAMR state plan.

All comments are set out more fully in Section VI.

VI. Summary of Comments

All comments submitted are summarized below with the Department's responses. Four organizations submitted comments: U.S. Environmental Protection Agency (EPA), PSEG Power Connecticut LLC (PSEG Power), AES Thames LLC (AES Thames) and NRG Energy, Inc. (NRG). These four commenters are identified fully in Attachment 1 to this report. When changes to the proposed text are indicated in response to comment, new text is in bold font and deleted text is in strikethrough font.

Comment on process

1. Comment: PSEG Power and AES Thames express disappointment in the lack of briefings and discussions with a subcommittee of the State Implementation Plan Recommendation Advisory Committee (SIPRAC) prior to the proposal. AES Thames notes the belief that their concerns about the proposal could readily have been addressed through such a process.

Response: Given the number and complexity of federal proposals and the need to meet federal deadlines, the Department has found it necessary to minimize stakeholder processes in recent months. The Department understands the value of working through implementation issues early and informally and will continue to use such processes, when possible. With respect to the current proceeding, the combination of this proposal with the proposal of the state plan to implement CAMR and the modification to the NSR permits for the existing coal-fired EGUs allow for adequate public input to identify implementation issues and concerns, while allowing the Department to satisfy federal mandates imposed on the state.

Effective date

2. Comment: The proposed revisions do not include an effective date. (NRG, PSEG Power) NRG and PSEG Power assume the intended effective date is January 1, 2010, concurrent with the implementation of CAMR. NRG recommends that the new subsection accordingly specify January 1, 2010 as the effective date. PSEG Power notes that the existing units would not comply with a 42-pound state cap if it were effective upon adoption.

Response: Applying the January 1, 2010 effective date assumed by the commenters would not allow the amendment to serve its intended purpose. This amendment is intended to ensure that all CAMR units in the state, including any new units that may be constructed, will be subject to permit limitations to maintain the combined mercury emissions from such units at a level below the state mercury emissions cap established in CAMR. Thus, the subsection should apply from the date it is adopted, so that any permit applications received from the effective date of the amendment forward will take into account the state caps assigned under CAMR and other requirements of subsection (n) that apply to coal-fired EGUs.

However, the Department understands the concerns underlying the recommended delay in the effective date, such as not precluding the construction of new coal-fired EGUs and, in the case of PSEG Power, the need to optimize new emissions control equipment. Thus, the terms specified in a permit issued under the new subsection will not necessarily be effective on the issuance date, particularly in any permit for a coal-fired EGU that may be issued before 2010. In some cases, terms in such permits will match the dates specified in CAMR for the corresponding provisions.

For example, the hearing officer recommends in the response to Comment 3 that the definition of "state mercury emission cap" should be revised to require the federal emissions levels at the federal dates. In the response to Comment 7, the hearing officer recommends that subsection (n)(2)(C) should include references to monitoring, recordkeeping and reporting requirements effective on January 1, 2009, as specified in CAMR. If the subsection is adopted as recommended in this report, such future dates will be reflected in any permit issued pursuant to the subsection.

Subsection (n)(1), State mercury emission cap

3. Comment: NRG and AES Thames recommend the Department adopt the federal levels of state caps at the federal timing or, in the case of PSEG Power, apply the cap in two phases to allow for an initial cap greater than the proposed 42 pounds. The commenters make the following points:

- NRG and AES Thames suggest that the early implementation of the 2018 cap may prevent new clean coal units from being constructed in Connecticut.
- PSEG Power is concerned that the mass emissions limit of proposed subsection (n) could negate the flexibility of C.G.S. section 22a-199 and threaten the economic viability of the Bridgeport Harbor unit.
- NRG acknowledges that coal-fired EGUs in the state will be subject to the mercury emissions limitations of C.G.S. section 22a-199, yet NRG is concerned that even with

existing and new coal-fired units meeting those emission limitations, the Phase 2 cap may be exceeded if implemented for the period 2010 - 2017.

- Imposing the Phase 2 cap in 2010 eliminates the potential for fuel diversity, which may be achieved through clean coal technology. Such technology has the ability to not only use a variety of coal types but also other solid fuels such as biomass. (NRG)
- Mercury control technology and percent removal efficiency of mercury control equipment should improve, and the cost of the controls should decrease, as CAMR is implemented nationally. (NRG)

In summary, NRG recommends that the Department implement the mercury cap in the two phases specified by the federal rule. This approach enables the existing units to operate while complying with Section 22a-199; allows the Department to gather actual emission data from the existing units and make the determination as to whether a more stringent mercury rate is justified; and allows the Department to permit any new clean coal units that may be proposed.

To the above considerations, PSEG Power adds that the Department would benefit by increasing the initial state mercury emission cap above 42 pounds per year, in that such an increase would allow (1) sufficient time to evaluate the control effectiveness of the mercury control system at Bridgeport Harbor Station; (2) for additional information to be available regarding NRG's proposal to construct a new coal-fired facility in Connecticut; and (3) for the legal status of EPA's CAMR to be clarified by the courts.

PSEG recommends that subsection (n) preserve the compliance schedule and flexibility provided in Section 22a-199. PSEG Power notes that the Department will be in a far better position to make an informed decision regarding an appropriate cap in 2012 -- the deadline in C.G.S. section 22a-199 for the Commissioner to conduct a review of the mercury emissions limits. This schedule should allow sufficient time before any new coal-fired unit is completed in Connecticut. Accordingly, the environmental implications of a higher statewide budget should be no different than if Connecticut proposed a 42-pound cap.

Response: The Department proposed in subsection (n) that the 2018 Phase 2 cap assigned under CAMR should serve as the state's mercury emissions cap from the adoption of the section forward in recognition that mercury is a toxic pollutant with serious health impacts, and the maximum environmental benefit should be achieved as soon as reasonably possible. Furthermore, even without this amendment, compliance with the 42 pound state cap will be necessary in 2018 under CAMR. Therefore, planning to comply must start now. Early application of that cap gives notice to the owners and operators of potential new coal-fired EGUs that they must incorporate mercury control equipment into the design phase for such new units. For the owners and operators of the existing coal-fired EGUs, the Department anticipates that compliance with the requirements of C.G.S. section 22a-199 will bring combined emissions from those sources to a level below 42 pounds before the initial compliance date established in CAMR. Thus, the early application of the 2018 was proposed in this amendment.

However, as stated in the comment, the Department recognizes that such a schedule may not

acknowledge the technical difficulties PSEG Power may experience in initial operation of its pollution control equipment or the state's energy planning efforts. In a similar manner, such timing may be a challenge to initial operations of new coal-fired EGUs, particularly units with innovative "clean coal" technologies or pollution control equipment. To take these considerations into account, the Department should revise the definition of "state mercury emission cap," as follows:

> "State mercury emission cap" means ~~0.021 tons of mercury per year~~**, for the period beginning January 1, 2010 through December 31, 2017, 106 pounds of mercury per calendar year, and, for the period beginning January 1, 2018, 42 pounds of mercury per calendar year.**

This adoption of the federal timing for the state caps is acceptable *only* because the emissions limitations and testing requirements of C.G.S. section 22a-199 will limit mercury emissions from the existing CAMR units to a level anticipated by the Department to be lower than the 42 pound cap -- and will likely so do even before 2010. Accompanied by the opt-out of the federal trading program provided in the CAMR state plan, the requirements of C.G.S. section 22a-199 will reduce mercury emissions from the state's coal-fired EGUs earlier than required in CAMR, thereby protecting the environment and public health during the cap phase-in. Persons who may be considering the construction of new coal-fired EGUs in Connecticut are hereby put on notice that only units incorporating advanced emissions control technologies and equipment will be satisfactory.

As a further protection, C.G.S. section 22a-199 requires the Commissioner to review mercury emissions from the coal-fired EGUs in 2012 to determine whether more stringent mercury emissions limits are appropriate. Within the context of that review, the Department should evaluate whether the Phase 2 cap should be imposed earlier than 2018, and, as appropriate, revise R.C.S.A. section 22a-174-3a(n). The emissions data from the existing units available at that future date, combined with more certainty regarding the construction of new coal-fired EGUs, will allow for an informed decision.

4. Comment: Connecticut defines the term "state mercury emission cap" in subsection (n)(1) and uses the term in two locations, (n)(2)(A)(ii) and (n)(3). "State mercury emission cap" is defined as 0.021 tons of mercury per year. To clarify that the cap is a mass cap and not an emission rate cap and to clarify Connecticut's apparent intention that the cap apply on a rolling 12-month basis, EPA believes that the definition of "State mercury emission cap" should be revised to read:

> **"State mercury mass emissions cap" means 0.021 tons of mercury in any 12 month period, starting with the first month following the effective date of this subsection."**

Response: In addition to the changes recommended in the response to Comment 3, the Department should change the word "emission" in the term "state mercury emission cap" to "emissions" and add the word "mass" as follows:

> "State mercury **mass** ~~emission~~ **emissions** cap" means ~~0.021 tons of mercury per year~~ **, for the period beginning January 1, 2010 through December 31, 2017, 106 pounds of mercury per calendar year, and, for the period beginning January 1, 2018, 42 pounds of mercury per calendar year.**

The Department should apply the state cap per calendar year, as explained in the responses to Comments 5 and 6.

In addition, the term "state mercury emission cap" should be changed to "state mercury mass emissions cap" when that term is used in the subsection, namely in proposed subdivisions (2)(A)(ii) and (3).

Subsection (n)(2)(A), Time period for determining compliance

5. Comment: Subsection (n)(2)(A) requires that an application to construct and operate a coal-fired unit must contain an enforceable requirement to limit the mercury emissions on "a twelve-month rolling average basis." PSEG Power and NRG comment that the use of the twelve-month rolling basis for a mass cap may limit operations by a coal-fired unit. NRG recommends that subsection (n)(2)(A) should be revised from a twelve-month rolling average to a calendar basis; PSEG recommends revision to match the compliance requirements of C.G.S. section 22a-199, which states that compliance shall be based on the average of the stack tests conducted during the two most recent calendar quarters.

NRG offers the following information in support of this change: Coal-fired units are base loaded with steady operations month-to-month. Mercury emissions are thus steady. These units have annual planned outages of three to six weeks, and the zero emissions of the outage are taken into account in determining compliance with applicable requirements. The outages are not held at a consistent time each year, so a twelve-month period that rolls may include two or no such outages, and could result in noncompliance on a twelve-month rolling basis even though the source would comply with applicable mercury emissions limits if compliance were determined on a calendar year basis. Thus, a unit operator may be forced to take an additional outage to ensure compliance with the twelve-month rolling average basis. This would be a financial strain on the source owner and result in higher priced generation replacing the coal-fired unit during the additional outage.

PSEG Power recommends the change based on considerations specific to the installation of new mercury control equipment at its Bridgeport Harbor unit #3. PSEG Power expects considerable variability in the performance of the control or monitoring systems while the new equipment is operated and tested. PSEG Power is concerned that this variability could result in noncompliance under a twelve-month rolling average compliance determination, while the quarterly compliance determination of Section 22a-199 would better take into account the uncertainty and variability in the performance of the new control equipment without undermining the environmental benefits.

Response: For the reasons stated in the comment, a calendar year is an acceptable time period over which compliance is determined in this case. While a twelve-month rolling average is the compliance time period often required for similar sources pursuant to the federal new source performance standards, the mercury budget considerations underlying the CAMR program make a calendar year acceptable. Furthermore, an annual measure of compliance is consistent with C.G.S. section 22a-199. To accomplish this change within the proposed amendment, the Department should revise subsection (n)(2)(A), as follows:

> (A) Enforceable requirements to limit the **annual** emission of gases containing mercury from the commencement of operation on a ~~twelve-month rolling average basis in accordance with the following requirements:~~ **calendar year basis, including:**

As PSEG Power notes, compliance with the annual mercury limitations of subdivision (2)(A) will be determined, beginning in July 2008, based on the average of the two most recent quarterly stack tests, as specified in C.G.S. section 22a-199. In the future, compliance may be determined by CEM should such monitoring be required by the Department pursuant to C.G.S. section 22a-199. See also, additional discussion on compliance monitoring and reporting in the response to Comment 7.

Subsection (n)(2)(A), Compliance with CAMR mercury mass cap

6. Comment: EPA suggests modification to proposed subsection (n)(2)(A)(ii) to ensure that there are specific requirements that will guarantee emissions do not exceed the CAMR mercury mass cap. In light of Connecticut's apparent intention to impose unit-specific mercury mass caps for this purpose, EPA recommends that subsection (n)(2)(A)(ii) should be revised to read:

> "A 12 month rolling mercury mass emissions cap for the unit which insures [*sic*] compliance with the state mercury mass emissions cap;"

EPA also recommends that the phrase "on a twelve month rolling average basis" should be removed from subsection (n)(2)(A).

Response: The Department agrees that a unit-specific mercury emissions cap would be an appropriate term to include in a permit for a new CAMR unit or modification of an existing CAMR unit permit and would be necessary to maintain emissions from the state's CAMR units to a level below the state mercury mass emissions cap. However, as explained in the response to Comment 5, the Department has determined that a calendar year will be used to determine compliance, rather than a 12-month rolling average.

Therefore, in response to the comment, the Department should add a new subparagraph (ii) to subsection (n)(2)(A) and change proposed subparagraph (ii) to subparagraph (iii), as follows:

> (A) Enforceable requirements to limit the **annual** emission of gases containing mercury from the commencement of operation on a ~~twelve-month rolling average~~

calendar year basis, including:

(i) The mercury emissions limitations of section 22a-199 of the Connecticut General Statutes, ~~and~~

(ii) A cap (in pounds) for the annual mercury emissions from the coal-fired electric generating unit or units that are the subject of the application, and

(iii) Additional requirements determined by the Commissioner as necessary to compliance with the state mercury **mass** ~~emission~~ **emissions** cap.

The subdivision as it appears in this response also includes the revision suggested in the response to Comment 5 and the revision to the term "state mercury emission cap" recommended in the response to Comment 4.

Subsection (n)(2)(B) and (C), Timing of CAMR monitoring, recordkeeping and reporting

7. Comment: Subsections (n)(2)(B) and (C) address the requirements for monitoring, recordkeeping, and reporting for both the statutory emission limit and the mercury mass emissions cap. Because the mercury mass emission monitoring requirements of 40 CFR 75 cannot be implemented before January 1, 2009 and cannot be used as of the first month following the effective date of section 22a-174-3a(n), EPA believes that subsection (n)(2)(B) should be revised to read:

(B) "For purposes of determining compliance with the 12 month rolling mercury mass emissions cap in subsection (n)(2)(A)(ii),

(i) Before January 1, 2009, provisions that satisfy the monitoring, recordkeeping, and reporting requirements of 40 CFR 60.49Da(p) and (s), 40 CFR 60.50Da(g) and (h), and 40 CFR 60.51Da(g), (h), and (k) and, with regard to heat input, 40 CFR 75, and the designated representative requirements of 40 CFR 60.4110 through 60.4114."

[Connecticut should also reference 40 CFR 60.49 Da(q) and (r) here if sorbent traps are to be allowed and should also reference 40 CFR 60.51Da(j) if written reports are to be allowed.]

(ii) Beginning January 1, 2009, provisions that satisfy the monitoring, reporting, and recordkeeping requirements in 40 CFR 75, with regard to mercury mass emissions, and 40 CFR 60.4170 through 60.4176 and the designated representative requirements of 40 CFR 60.4110 through 60.4114.

(iii) In applying the requirements in 40 CFR 60.4170 through 60.4176, the term "Hg budget unit" shall be deemed to refer to "coal-fired electric generating unit." In applying the requirements in 40 CFR 60.4110 through 60.4114, the terms "Hg Budget source," "Hg Budget unit," "Hg Budget Trading Program," and Hg Budget permit" shall be deemed to refer to "facility that includes one or more coal-fired electric generating units," "coal-fired electric generating unit," "section 22a-174-3a(n)(2)(C)," and "permit to construct, reconstruct, or operate" respectively, and references to "Hg Allowance Tracking System account," "Hg allowances," "proceeds of transactions involving Hg allowances," and 40 CFR 60.4102 and 60.4151 shall not be applicable.

With regard to the statutory rate based emission limit, the current language in subsection (n)(2)(B) may not be sufficient to obtain reliable data on a continuous basis in the units necessary to determine compliance. Connecticut may want to consider having broad authority in subsection (n)(2)(C) to issue the necessary permit terms for determining compliance with the state's statutory limit.

Response: EPA's comments with regard to the sufficiency of timing of the compliance monitoring, reporting and recordkeeping requirements of proposed subparagraphs (B) and (C) of subdivision (2) appropriately distinguishes between requirements that will apply on and after January 1, 2009, when the CAMR-motivated changes to 40 CFR 75 are effective, and those that apply prior to that date. The Department should largely incorporate the changes recommended by EPA in the format set out below, with one difference in content. Rather than referring to the NSPS requirements of 40 CFR 60 Subpart Da for the period of time before January 1, 2009, subsection (n) should reference the testing, monitoring and reporting requirements of C.G.S. section 22a-199(b)(3) and (4). Unlike the guidelines of 40 CFR 60, Subpart HHHH, NSPS requirements are independently applicable and thus would be reflected in an NSR permit without a corresponding regulatory requirement.

The Department also notes its agreement with EPA's interpretation that a NSR permit or modification issued under subsection (n) satisfies the Hg Budget permit requirements of 40 CFR 60 Subpart HHHH.

The revised text indicated below also includes, as new subparagraph (F), language addressing continuous emissions monitoring (CEM) as recommended by EPA. The timing indicated is consistent with the requirements of C.G.S. section 22a-199(b)(3)(B).

Accordingly, the Department should replace proposed subparagraphs (B) and (C) with subparagraphs (B) through (F) below, in the final version of subsection (n)(2):

(B) ~~Provisions necessary to determine compliance with the requirements of subparagraph (A) of this subdivision in accordance with 40 CFR 60.50Da(h).~~ **Provisions that satisfy the designated representative requirements of 40 CFR**

60.4110 through 60.4114, as specified in subparagraph (E) of this subdivision;

(C) Provisions that satisfy the testing, monitoring and reporting requirements of section 22a-199(b)(3) and (4) of the Connecticut General Statutes;

(D) ~~Provisions that satisfy the monitoring, record keeping and reporting requirements of 40 CFR 75, 40 CFR 60.49Da(p), 40 CFR 60.51Da(g) and (k) and 40 CFR 60.4106(b); and~~ **As of January 1, 2009, to determine compliance with the emissions limitations of subdivision (2)(A) of this subsection, monitoring, recordkeeping and reporting requirements that satisfy:**

(i) 40 CFR 75, with regard to mercury mass emissions, and

(ii) 40 CFR 60.4170 through 60.4176, as specified in subparagraph (E) of this subdivision;

(E) The requirements in 40 CFR 60 referenced in this subdivision shall be applied, as follows:

(i) The term "Hg budget unit" as used in 40 CFR 60.4170 through 60.4176 shall be deemed to refer to "coal-fired electric generating unit,"

(ii) The terms "Hg Budget source," "Hg Budget unit," "Hg Budget Trading Program" and "Hg Budget permit" as used in 40 CFR 60.4110 through 60.4114 shall be deemed to refer to "facility that includes one or more coal-fired electric generating units," "coal-fired electric generating unit," "section 22a-174-3a(n)(2)(F)" and "permit to construct, reconstruct, or operate," respectively, and

(iii) References to "Hg Allowance Tracking System account," "Hg allowances," "proceeds of transactions involving Hg allowances," 40 CFR 60.4102 and 40 CFR 60.4151, when made in 40 CFR 60.4110 through 60.4114, shall not be applicable; and

(F) Additional requirements determined by the Commissioner as necessary to determine compliance with the mercury emissions limitations of subdivision (2)(A) of this subsection, including, on and after July 1, 2008, installation and operation of a continuous emissions monitoring system.

Subsection (n)(3), Implementation of mercury emissions caps in NSR permits

8. Comment: Subsection (n)(3) contains language that will require any permit issued to a new coal-fired unit to include conditions to ensure that the total mercury emissions in the state will

not exceed the state cap. The permit conditions will take into account the mercury emissions from existing units, expected mercury emissions from any other new permits for a coal-fired unit and expected mercury emissions from the new coal-fired unit to be permitted. NRG does not oppose the inclusion of the mercury emissions limits in the NSR permit for a new coal-fired unit. While NRG finds the methodology straightforward, NRG finds it impossible, however, to comment on this method without the companion method of how the mercury emissions from existing units will be calculated.

For this reason, NRG requests that additional comments on subsection (n) be accepted during the comment period on the Department's plan to implement CAMR for existing coal-fired units, either as a reopened proceeding on subsection (n), or as part of the public comment period on the state's CAMR plan.

Response: This amendment has been developed as one element of a state plan to regulate mercury emissions from coal-fired EGUs in a manner that satisfies CAMR. The other elements are the revised permits for the three existing CAMR units. The Department recognizes that this proceeding and the proceedings to modify the NSR permits for the three existing CAMR units are integral to the finalization of the state plan. The parallel processing of the permit modifications, this amendment and the plan narrative increases the level of uncertainty with each proposal and thereby adds an element of challenge to the comment process. However, it also adds an element of advantage since interested parties can better understand the interrelationship of the elements and, seeing all, may comment more constructively on each to serve its final role in the whole.

The notice of a public hearing on the plan referenced in this comment was published on November 22, 2006 in four area newspapers and the Department's website, and a notification of the publication was provided to the SIPRAC electronic mailing list. While the notice limits comment on subsection (n) to the use of the NSR permit program as the enforceable mechanism for the state plan, comment on the compliance determination made in Section VI of the state plan is invited. That section addresses emissions calculations for the existing units.

Furthermore, regarding the methodology for determining the mercury emissions from existing units, the Department will use the best information available, noting that after July 1, 2008, the best information will be the same for all the coal-fired units in the state, since C.G.S. section 22a-199 requires each such unit's owner to conduct stack testing for mercury every calendar quarter. As required by the statute, the Commissioner will determine the actual emissions from an existing unit – and compliance with the emissions limits of C.G.S. section 22a-199 -- based on the average of the stack tests conducted during the two most recent calendar quarters for that unit.

Prior to the stack testing required under C.G.S. section 22a-199, the Commissioner will use the best available information to calculate annual mercury emissions from the existing units based on the mercury content of the fuel used and using assumptions about annual capacity and mercury removal efficiency. These assumptions and approach are set out in the proposed state plan, on which NRG submitted comment.

9. Comment: PSEG Power objects to the inclusion of provisions in a minor modification to its existing NSR permit for the Bridgeport Harbor unit #3, provisions that appear to presuppose the adoption of proposed subsection (n).

Response: The Department is not aware of any instance in the draft permit modification for Bridgeport Harbor unit #3, for which a tentative determination was published in the *Connecticut Post* on November 8, 2006, in which the draft modification presupposes the adoption of R.C.S.A. section 22a-174-3a(n).

That permit modification was initiated by PSEG Power to take into account PSEG Power's installation of a mercury control system including an activated carbon injection system and a pulse-jet fabric filter baghouse that will operate when Unit #3 is burning coal. At the same time, the draft modification includes mercury control requirements driven by the adoption of C.G.S. section 22a-199 by the Connecticut legislature in 2003 and the promulgation of CAMR in 2005. The mercury emissions limitations of the draft permit, including the ability of PSEG Power to request an alternative limit under certain conditions, are those of Section 22a-199; the stack testing requirements for mercury are those of Section 22a-199; and the reporting requirements for mercury are those of Section 22a-199. While these requirements are compatible with the requirements of proposed subsection (n), the Department is not able to find any reference to that section or its requirements in the draft permit modification.

10. Comment: To clarify that the mercury emission caps for both existing and new coal-fired units will be applied on a 12 month rolling average basis, EPA recommends that subsection (n)(3) should be revised, as follows:

> "No permit for a coal-fired electric generating unit shall be granted unless the sum of the 12 month rolling mercury mass emissions caps for the unit covered by the permit under consideration, all new coal-fired electric generating units previously issued permits under this subsection, and all the existing coal-fired electric generating units in the state does not exceed the state mercury mass emissions cap."

Response: The Department agrees that the provision should be clarified with respect to the time period over which the mercury emissions from the new and existing coal-fired electric generating units are summed to determine compliance with the state mercury mass emissions cap. As explained in the responses to Comments 5 and 6, the Department has reconsidered the use of the proposed twelve-month rolling average and determined that a calendar year is the appropriate time period with which to measure compliance. To change the time period to a calendar year and include the approach to clarification suggested by EPA, proposed subsection (n)(3) should be revised, as follows:

> (3) No permit for a coal-fired electric generating unit shall be granted **pursuant to this section** unless the ~~combined emissions of gases containing mercury from the unit~~

~~covered by the permit under consideration, any new coal-fired electric generating units previously issued permits under this subsection, and the existing coal-fired electric generating units in the state are less than the state mercury emission cap.~~ **sum of the applicable annual mercury emissions caps for the following units does not exceed the applicable state mercury mass emissions cap:**

(A) The unit or units addressed by the permit application(s) under consideration;

(B) Each new coal-fired electric generating unit previously issued a permit under this subsection; and

(C) Each existing coal-fired electric generating unit in the state.

National mercury emissions trading program

11. Comment: Connecticut should fully participate in the national mercury cap-and-trade program. Reasons offered by AES Thames in support of this approach include:

- An absolute cap limits the possibility of construction of new coal-fired power plants since such a plant could not purchase allowances for any excess emissions.
- An absolute cap limits the ability of existing units to change the type of coal burned or make operational changes that might allow for maximum electricity output from the state's coal-fired units to maintain a reliable and fuel diverse electric generation system for the state.
- C.G.S. section 22a-199 requires the state's coal-fired units to meet emission rates that are more stringent than CAMR as of 2008 and allows for the Department to adopt even more stringent standards in 2012. The statute thus allows for the use of the best mercury control technology, independent of CAMR.
- Mercury emissions from coal-fired EGUs controlled to meet the requirements of CAMR are in the form of elemental mercury. Elemental mercury deposits slowly from the atmosphere over hundreds to thousands of miles and thus does not create local "hot spots." Allowing Connecticut sources to participate in the nationwide mercury cap and trade program will not have adverse effects in the vicinity of the Connecticut facilities.

AES Thames recommends that subsection (n)(3) should be revised, as follows:

(3) Each coal-fired electric generating unit shall comply with the Hg Budget Trading Program as set forth in 40 CFR 60, subpart HHHH.

Response: The Department will not participate in the CAMR national cap-and-trade program for mercury but will instead rely on the requirements of C.G.S. section 22a-199 as implemented through the NSR permit program to achieve more certain reductions in mercury emissions, ensuring better protection of public health and the environment. Connecticut's approach to reducing mercury from coal-fired EGUs is consistent with the Department's long-held determination that trading of toxic air pollutants is not appropriate. This concern was one of the issues raised by

Connecticut, along with eight other states, in March 29, 2005 petition filed in the D.C. Circuit Court requesting reconsideration on CAMR.[1] Opting out of the national trading program also furthers the regional goal of virtual elimination of anthropogenic mercury emissions.[2]

The commenter offers no persuasive reasons to support a change in the Department's policy that a cap-and-trade regulatory program to limit air emissions of mercury fails to provide adequate protection to the public and the environment. Such a policy can be pursued within the context of the state's energy planning efforts; mercury control and energy planning needs are not mutually exclusive goals. While the commenter suggests that an absolute cap both limits the possible construction of new coal-fired EGUs and limits the ability of the existing coal-fired EGUs to change operations to maximize electricity production, these objections are groundless. For the owners and operators of the existing coal-fired EGUs, the Department anticipates that compliance with the requirements of C.G.S. section 22a-199 will bring combined emissions from those sources to a level below 42 pounds as of the compliance date established in CAMR, thus allowing for the construction of a coal-fired EGU with advanced mercury emission control technology, should the state deem such a new plant to be necessary to meet electric supply and reliability needs. Furthermore, as noted by the commenter, C.G.S. section 22a-199 requires the state's coal-fired EGUs to meet emission rates more stringent than those of CAMR – and does so without diluting the emissions reduction benefits with a trading program.

The last point made by the commenter, that coal-fired EGUs emit elemental mercury, do not contribute significantly to hot spot formation and thus that participation in the trading program will not have adverse effects in the vicinity of Connecticut's coal-fired EGUs, is puzzling given the quantity and quality of studies demonstrating that gaseous divalent mercury and particulate mercury make up 50 to 90% of the mercury emitted from coal-fired EGUs in the northeastern U.S. and establishing the significance of local source reductions in mercury emissions to overall reductions in mercury deposition and levels in biota.[3] While acknowledging that mercury deposition and bioaccumulation is a complex system that is not fully understood, the Department's decision to opt out of trading is well supported by existing studies and modeling. The proposal should not be revised in response to this comment.

VII. Additional Comments by the Hearing Officer

To correct minor errors, the Department should make the following technical correction to the identified sections of proposed subsection (n):

Subsection (n)(1), Definitions. The definition of "CFR" in subdivision (1) should be eliminated,

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1 *State of New Jersey, et al. v. U.S. Environmental Protection Agency*, Docket No. 06-1211 (D.C. Cir.).

2 Conference of New England Governors/Eastern Canadian Premiers. 1998. *Mercury Action Plan.*

3 See, e.g., Evers, DC, Han Y, Driscoll CT, Kamman NC, Goodale W, Lambert EF, Holsen TM, Chen CY, Clair TA and Butler T. 2007. Biological mercury hotspots in the northeastern United States and southeastern Canada. BioScience 57: 29-43; Northeast States for Coordinated Air Use Management. 2005. Inventory of anthropogenic mercury emissions in the northeast. Boston: NESCAUM; *Integrating Atmospheric Deposition with Aquatic Cycling in South Florida: An Approach for Conducting a Total Maximum Daily Load Analysis for an Atmospherically Delivered Pollutant* (Revised November 2003); EPA Office of Water, *Draft Mercury REMSAD Deposition Modeling Results*, 2003.

as it is unnecessary given the definition in R.C.S.A. section 22a-174-1 and the inclusion of the June 9, 2006 date in the introduction language of subdivision (1).

~~"CFR" means the Code of Federal Regulations as amended on June 9, 2006.~~

Subsection (n)(1), Definitions. The definition of "existing coal-fired electric generating unit" should be revised in three respects:

- The reference to the individual units at the AES Thames facility in the definition of "existing coal-fired electric generating unit" should change from "A" and "B" to units "1" and "2." This change is consistent with the unit identification used by AES Thames in the operating permit for these two units.
- The reference to "BHB3" for the PSEG Power unit should be replaced with "unit 3."
- The phrase "for which a permit limitation on mercury emissions has been approved pursuant to Section 111(d) of the Act" should be eliminated because it is unnecessary and potentially confusing given the requirements of subdivisions (2) and (3). Simple identification of the existing units by name is sufficient.

As a result of these two recommendations, the final version of the definition should read:

"Existing coal-fired electric generating unit" means any one of the following coal-fired electric generating units ~~for which a permit limitation on mercury emissions has been approved pursuant to Section 111(d) of the Act~~: Bridgeport Harbor Station ~~BHB3~~ **unit 3** in Bridgeport, AES Thames unit ~~A~~**1** in Montville or AES Thames unit ~~B~~**2** in Montville.

Subsection (n)(1), Definitions. The definitions in subdivision (1) should be lettered for ease of later reference.

Subsection (n)(2). To specify that an application to modify a coal-fired EGU must satisfy the requirements of subsection (n) and to make the language of the introduction of subdivision (2) closer in format to that of subsection (c), of which subsection (n)(2) is an extension, the introduction to subdivision (2) should be replaced, as follows:

(2) In addition to the information specified in subsection (c) of this section, ~~an application for a permit to construct, reconstruct or operate a coal-fired electric generating unit shall include the following components:~~ **the owner or operator of a coal-fired electric generating unit subject to the provisions of this section shall include the components specified in this subdivision in any permit application to construct, reconstruct, modify or operate:**

Subsection (n)(2)(A)(i). To take into account all the flexibilities provided to the Commissioner in C.G.S. section 22a-199, proposed subsection (n)(2)(A)(i) should be revised, as follows:

(i) ~~The mercury~~ **Mercury** emissions limitations ~~of~~ **consistent with** section 22a-199 of the Connecticut General Statutes,

VIII. Final Text of Proposal

The final text of the amendment, inclusive of the changes recommended in this report, is located at Attachment 3 to this report.

IX. Conclusion

Based upon the comments submitted by interested parties and addressed in this Hearing Report, I recommend the final amendment, as contained in Attachment 3 to this report, be submitted by the Commissioner for approval by the Attorney General and the Legislative Regulations Review Committee. Based upon the same considerations, I also recommend that upon promulgation the amendment be submitted to EPA as a portion of the Department's state plan to satisfy CAMR.

March 8, 2007

/s/Merrily A. Gere
Hearing Officer

Date

Attachment 1
List of Commenters

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Attachment 2

Text of Proposed Amendment

DRAFT – August 25, 2006

Section 22a-174-3a of the Regulations of Connecticut State Agencies is amended by adding subsection (n), as follows:

(NEW)

(n) Permit requirements for mercury emissions from coal-fired electric generating units.

(1) **Definitions.** For purposes of this subsection, the following definitions shall apply. Any term not defined in this subsection shall be as defined in 40 CFR 60.24(h)(8), as amended on June 9, 2006:

"CFR" means the Code of Federal Regulations as of June 9, 2006.

"Coal-fired electric generating unit" means "electric generating unit" as defined in 40 CFR 60.24(h)(8).

"Existing coal-fired electric generating unit" means any one of the following coal-fired electric generating units for which a permit limitation on mercury emissions has been approved pursuant to Section 111(d) of the Act: Bridgeport Harbor Station BHB3 in Bridgeport, AES Thames unit A in Montville or AES Thames unit B in Montville.

"New coal-fired electric generating unit" means any coal-fired electric generating unit that is not an existing coal-fired electric generating unit.

"State mercury emission cap" means 0.021 tons of mercury per year.

(2) In addition to the information specified in subsection (c) of this section, an application for a permit to construct, reconstruct or operate a coal-fired electric generating unit shall include the following components:

(A) Enforceable requirements to limit the emission of gases containing mercury from the commencement of operation on a twelve-month rolling average basis in accordance with the following requirements:

(i) The mercury emissions limitations of section 22a-199 of the Connecticut General Statutes, and

(ii) Additional requirements determined by the Commissioner as necessary to compliance with the state mercury emission cap;

(B) Provisions that satisfy the monitoring, record keeping and reporting requirements of 40 CFR 75, 40 CFR 60.49Da(p), 40 CFR 60.51Da(g) and (k) and 40 CFR 60.4106(b); and

(C) Provisions necessary to determine compliance with the requirements of subparagraph (A) of this subdivision in accordance with 40 CFR 60.50Da(h).

(3) No permit for a coal-fired electric generating unit shall be granted unless the combined emissions of gases containing mercury from the unit covered by the permit under consideration, any new coal-fired electric generating units previously issued permits under this subsection, and the existing coal-fired electric generating units in the state are less than the state mercury emission cap.

Statement of Purpose: This amendment adds provisions to the Department's permitting requirements to specify requirements necessary to address mercury emissions from any new coal-fired electric generating units that may be constructed in Connecticut. These new provisions will be included as a component of the state plan to comply with the federal Clean Air Mercury Rule.

Attachment 3

Final Text of the Amendment

(n) Permit requirements for mercury emissions from coal-fired electric generating units.

(1) Definitions. For purposes of this subsection, the following definitions shall apply. Any term not defined in this subsection shall be as defined in 40 CFR 60.24(h)(8), as amended on June 9, 2006:

(A) "Coal-fired electric generating unit" means "electric generating unit" as defined in 40 CFR 60.24(h)(8).

(B) "Existing coal-fired electric generating unit" means any one of the following coal-fired electric generating units: Bridgeport Harbor Station unit 3 in Bridgeport, AES Thames unit 1 in Montville or AES Thames unit 2 in Montville.

(C) "New coal-fired electric generating unit" means any coal-fired electric generating unit that is not an existing coal-fired electric generating unit.

(D) "State mercury mass emissions cap" means, for the period beginning January 1, 2010 through December 31, 2017, 106 pounds of mercury per calendar year, and, beginning January 1, 2018, 42 pounds of mercury per calendar year.

(2) In addition to the information specified in subsection (c) of this section, the owner or operator of a coal-fired electric generating unit subject to the provisions of this section shall include the components specified in this subdivision in any permit application to construct, reconstruct, modify or operate:

(A) Enforceable requirements to limit the annual emission of gases containing mercury from the commencement of operation on a calendar year basis, including:

(i) Mercury emissions limitations consistent with section 22a-199 of the Connecticut General Statutes,

(ii) A cap (in pounds) for the annual mercury emissions from the coal-fired electric generating unit or units that are the subject of the application, and

(iii) Additional requirements determined by the Commissioner as necessary to comply with the state mercury mass emissions cap;

(B) Provisions that satisfy the designated representative requirements of 40 CFR 60.4110 through 60.4114, as specified in subparagraph (E) of this subdivision;

(C) Provisions that satisfy the testing, monitoring and reporting requirements of section 22a-199(b)(3) and (4) of the Connecticut General Statutes;

(D) As of January 1, 2009, to determine compliance with the emissions limitations of

subdivision (2)(A) of this subsection, monitoring, recordkeeping and reporting requirements that satisfy:

(i) 40 CFR 75, with regard to mercury mass emissions, and

(ii) 40 CFR 60.4170 through 60.4176, as specified in subparagraph (E) of this subdivision;

(E) The requirements in 40 CFR 60 referenced in this subdivision shall be applied, as follows:

(i) The term "Hg budget unit" as used in 40 CFR 60.4170 through 60.4176 shall be deemed to refer to "coal-fired electric generating unit,"

(ii) As used in 40 CFR 60.4110 through 60.4114: "Hg Budget source" shall be deemed to refer to "facility that includes one or more coal-fired electric generating units," "Hg Budget unit" shall be deemed to refer to "coal-fired electric generating unit," "Hg Budget Trading Program" shall be deemed to refer to "section 22a-174-3a(n)(2)(F)" and "Hg Budget permit" shall be deemed to refer to "permit to construct, reconstruct or operate," and

(iii) The provisions concerning "Hg Allowance Tracking System account," "Hg allowances," "proceeds of transactions involving Hg allowances," 40 CFR 60.4102 and 40 CFR 60.4151, when made in 40 CFR 60.4110 through 60.4114, shall not be applicable to coal-fired electric generating units subject to this subsection; and

(F) Additional requirements determined by the Commissioner as necessary to determine compliance with the mercury emissions limitations of subdivision (2)(A) of this subsection, including, on and after July 1, 2008, installation and operation of a continuous emissions monitoring system.

(3) No permit for a coal-fired electric generating unit shall be granted pursuant to this section unless the sum of the applicable annual mercury emissions caps of the following units does not exceed the applicable state mercury mass emissions cap:

(A) The unit or units addressed by the permit application(s) under consideration;

(B) Each new coal-fired electric generating unit previously issued a permit under this subsection; and

(C) Each existing coal-fired electric generating unit in the state.