

Attachment 1

Response to Comments

Proposed Designated Facilities Plan for Mercury Emissions at Coal-Fired Electric Generating Units and Associated Rule Changes

The Utah Division of Air Quality proposed, on November 1, 2006, to amend R307-210, Stationary Sources; amend R307-220, Emission Standards: Plan for Designated Facilities and add a new Section IV, Plan for Mercury Emissions at Coal-Fired Electric Generating Units; add new rule R307-224, Mercury Emission Standards: Coal-Fired Electric Generating Units; and add new rule R307-424, Permits: Mercury Requirements for Electric Generating Units.

The following is a summary of all comments received and responses thereto in support of a final package to address mercury emissions from coal-fired electric generating units (EGUs) within the state of Utah.

Commenters:

The Utah Division of Air Quality (DAQ) has received input on the proposed Designated Facilities Plan for Mercury Emissions at Coal-Fired Electric Generating Units and associated rules from the following commenters:

Pacificorp Energy
The Intermountain Power Service Corporation (IPSC)
The United States Environmental Protection Agency (EPA)
Wasatch Clean Air Coalition

Organization:

General comments will be presented first, followed by comments specific to each particular rule and the Designate Facilities Plan.

A. General Comments:

Comment #1. Expressing general nonsupport for participation in the federal cap & trade program outlined in EPA's Clean Air Mercury Rule (CAMR). Reasons given include: the fact that the CAMR, by itself, would not prevent an increase in mercury emissions from coal-fired EGUs in Utah, and that the potential sale of excess mercury allowances could lead to the creation of hotspots in other states. {Comment made by Wasatch Clean Air Coalition}

Response: The Division of Air Quality (DAQ) recognizes that the structure of the federal cap & trade program does not explicitly guarantee reductions of mercury emissions on a local scale. This is why Utah's proposal was supplemented with additional constraints. Even with these additional constraints there is no guarantee that the potential sale of any excess allowances would not cause or contribute to hot spots in other states. Nevertheless, the overriding intent of the Division in its development of this proposal was to address mercury emissions within the State of Utah. Other states were able to do this as well, if they so chose.

Comment #2. Expressing general support for adopting the EPA mercury rules. The approach of regulating mercury using a cap and trade approach under the New Source Performance Standards, rather than what had been proposed as Maximum Achievable Control Technology provides opportunity for significant yet cost effective mercury reductions. {Comment made by IPSC}

Response: This comment really speaks to the approach the Environmental Protection Agency (EPA) has taken with respect to controlling mercury emissions from Electric Generating Units (EGUs.) Nevertheless, DAQ acknowledges that EPA has had prior success with a cap & trade approach, and this contributed to its inclusion in Utah's proposal.

Comment #3. Mercury emissions are largely a global issue, and while the reductions anticipated under the CAMR are significant and important they will only result in a 70% reduction in one percent of global mercury emissions. It is unlikely that reductions from any Utah-based EGU would show any reduction in Utah's atmospheric mercury concentration or deposition. {Comments made by PacifiCorp Energy and IPSC}

Response: By all indications global mercury emissions do account for most of the mercury deposition in the continental United States. Nevertheless, of all the domestic sources of mercury emissions, Electric Generating Units are by far the largest. Given the high concentrations of mercury in Utah's watersheds, it would be irresponsible to ignore this source of emissions. DAQ believes it should address what it can, regardless of what

is or is not being done in other jurisdictions. Furthermore, other significant sources of mercury emissions (medical waste incinerators, municipal waste incinerators, metal refining operations, cement kilns, etc.) have already been, or soon will be regulated. See also response to comment F.9.

***Comment #4.** The CAMR retains the notion of sub-categorizations for coal rank first proposed in the MACT standard, to ensure that coal supply availability was not impacted. IPSC agrees with this approach and strongly urges DAQ not to impose any regulatory burden that would discourage opportunities for the lowest cost and most reliable coal supplies by ignoring differences in coal rank. {Comment made by IPSC}*

Response: The model rule considers coal rank in its allocation of mercury allowances to units commencing operation before January 1, 2001 (Section 60.4142(a).) Furthermore, such allocations are based on “the average of the three highest amounts of the units’ “adjusted” control period heat input for 2000 through 2004.” This “adjustment” involves multipliers of 1.25 for use of any sub-bituminous coal during that period and 3.0 for any lignite. The “multiplier” for bituminous coal is simply 1.0. In other words, allowances issued based on the use of lignite would be three times as many as would be given for a commensurate heat input from bituminous coal.

Section 60.4142 paragraph (a) was specifically not incorporated by reference in R307-224 (as proposed.) Rather, the allocation procedure is addressed in the (proposed) Designated Facilities Plan (DFP) at Section B. 3(e.) Paragraph (i) of that section describes the allocation procedure for existing EGUs (commencing operation before January 1, 2001.) Therein, the proposal deviates from the model rule in two respects: 1) it does not include multipliers for lower ranks of coal, and 2) rather than using a fixed 5-year period to make this calculation (2000 – 2004) it proposes a rolling 5-year period wherein these rates of heat input would be re-evaluated. In this way, if an EGU were to discontinue its operation, it would not indefinitely continue to receive allowances.

Coal usage in Utah has predominantly involved bituminous coal. Inventory information submitted to DAQ in this regard suggests that any adjustment to factor in coal rank and issue additional allowances for usage of sub-bituminous coal during the period of 2000 – 2004 would be trivial. Thus it would not seem that DAQ has proposed to nullify any opportunity envisioned by the model rule with regard to coal rank.

Concerning, however, the proposed State-only rule R307-424, it is true that the emission limit or minimum degree of control proposed in 424-4 and potentially the offset requirement proposed in 424-3 would be more difficult to achieve given a switch to a coal supply of lower rank. Nevertheless, DAQ reiterates that its primary concern is to see that mercury emissions within the State of Utah are set on a downward trend.

Comment #5. Utah's approach of incorporating by reference most of the provisions of the model rule [40 CFR60 subpart HHHH] will facilitate not only EPA's review process, but also the adoption by Utah of future changes (if any) in the model rule. {Comment made by EPA}

Response: DAQ agrees, and notes that EPA is still considering revisions to the CAMR.

B. R307-210, Stationary Sources:

Comment #1. The commenter agrees with and supports DAQ's action in this rule, and recommends that it be finalized as written. {Comment made by IPSC}

Response: DAQ agrees, and notes that the revisions proposed in this rule are largely administrative in nature.

C. R307-220, Emission Standards: Plan for Designated Facilities:

Comment #1. The commenter agrees with and supports the notion of incorporating Utah's Designated Facilities Plan by reference, and would recommend finalizing the rule after amending the Designated Facilities Plan to address some of its concerns with regard to the allocation methodology; section 3(e)(ii)(A) in particular (see Comments E. 5 & 7.) {Comment made by IPSC}

Response: See responses offered to address comments E. 5 & 7

D. R307-224, Mercury Emission Standards: Coal-Fired Electric Generating Units:

Comment #1. This rule incorporates all applicable portions of 40 CFR 60 subpart HHHH (the model rule) with the exception of some portions dealing with the allocation of allowances. We agree with DAQ's decision to participate in the cap and trade program described in the model rule, and recommend that this rule be finalized as written. {Comment made by IPSC}

Response: See responses offered to address comments A.1 and A.2 concerning Utah's participation in the cap & trade program.

E. Designated Facilities Plan, Section IV, Plan for Mercury Emissions at Coal-Fired Electric Generating Units:

Comment #1. Section 3(b)(iv); EPA suggests removing this part which addresses the failure of a state to submit allocations to the Administrator and presupposing that the State will submit the allocations as required in its plan. EPA removed analogous provisions in the final Clean Air Interstate Rule (CAIR), and has recently proposed to do the same with respect to the CAMR. {Comment made by EPA}

Response: The language in Section 3(b)(iv) of the Designated Facilities Plan (DFP) is taken from the CAMR, subpart HHHH at 60.4141, paragraphs (b)(2) and (c)(2.) Utah appreciates that EPA anticipates the State will meet its obligation to report, to the Administrator, the allowances it has made with respect to each of these paragraphs. The EPA has also pointed out (in comment A.5) the value of incorporating the federal rule by reference wherever possible, so as to make revisions less complicated in the event that the federal rule should be revised. Although paragraphs (b)(2) and (c)(2) were not incorporated by reference, they were addressed in the DFP under a single Section (3)(b)(iv) which addresses nothing else. Should the proposed revisions to the CAMR be finalized as EPA anticipates, DAQ will amend the DFP by removing Section 3(b)(iv.)

Comment #2. Section 3(d)(ii); EPA notes that a situation could arise under which a new unit, having just operated for its first 5-year period, would no longer be eligible to receive allowances from the new unit set-aside, yet the standard allowances it would need for the subsequent control period would already have been allocated. EPA has recently proposed revising the CAMR (and did so in the CAIR) to extend the availability of allowances from the new unit set-aside. Utah could take this opportunity to make a similar correction. {Comment made by EPA}

Response: As with the concern raised by EPA in comment E.1, DAQ would prefer to wait until any proposed revisions to the CAMR have become final. At that time DAQ would revise its DFP accordingly.

Comment #3. Section 3(e)(i); Regarding the basis for making mercury allowances, the Department should consider making the allocations in five year blocks. This approach would provide a better planning horizon and reduce paperwork. {Comment made by PacifiCorp Energy}

Response: DAQ agrees on both counts, and offers the following revision to address these concerns:

3.(e) (i) The baseline heat input (in MMbtu) used with respect to Hg allowance allocations under (c) above for each Hg Budget unit commencing operation before January 1, 2001, will be the average of the three highest amounts of the unit's control period heat input, resulting from the combustion of coal, during a succession of five-year periods as outlined below. The first such five-year period shall commence with the year 2000 and run through 2004. It shall be used as the basis for allocations submitted to the Administrator under paragraphs (b)(i) and (b)(ii). The next five-year period shall commence with the year 2005. It shall be used as the basis for allocations submitted to the Administrator, in the years 2010 through 2014, in accordance with paragraph (b)(iii.) Subsequent five-year periods shall commence with the years 2010, 2015, and so on. In each case, the most recent data set shall be used as the basis for allocations submitted to the Administrator in accordance with paragraph (b)(iii.)~~[within the rolling five-year period concluding December 31st of the year prior to the year in which such allocations are to be made.]~~

See also the response to comment E.7.

***Comment #4.** Section 3(e)(i) of the Plan describes a 5-year rolling baseline to be used for determining the relative distribution of mercury allowances. While this is approvable, it is unclear what the rule refers to by saying "year in which such allocations are to be made." Is it the year the allowances are allocated to the EGUs or the year they are submitted to the Administrator? EPA suggests the latter. {Comment made by EPA}*

Response: DAQ agrees, and has made this clarification in the revision proposed to address the comment E.3 above.

***Comment #5.** Section 3(e)(ii)(A) of the plan includes, as a basis for allocation distribution, a heat input value of 7,900 btu/kW-hr. It appears that DAQ has arbitrarily chosen this number, and we believe this to be a severe curtailment in budget allowances for new units; especially since no coal-fired source could operate at that efficiency rating. We are not aware of thermal plants in the country with net heat rates much less than 9,000 btu/kW-hr. We recommend either deleting or restructuring the heat rate values for determining allocations as described in this section [3(e)(ii).] {Comment made by IPSC}*

Response: The heat input value 7.9 MMbtu/MW-hr (or 7,900 btu/kW-hr), as well as the rest of the language in Section 3(e)(ii)(A) of the DFP comes directly from the model rule at Section 60.4142(a)(2)(ii)(A.) In like manner, the following two paragraphs of the DFP

((B) and (C)) come from the two subsequent paragraphs in 60.4142(a)(2)(ii.) Since each of the numbers used in any of these three paragraphs was determined by the EPA, DAQ is in no position to comment on the appropriateness of their selections. DAQ would point out that it remains the agency's intention to retain, without subsequent change, each of these elements of the model rule. The reason, as pointed out during the stakeholder process, that these paragraphs were not directly incorporated by reference in R307-224 had only to do with the organization of the model rule.

Comment #6. *Section 3(e)(ii)(C) of the Plan proposes a multiple of 0.8 in its allowance calculation for combustion turbines whereas the model rule contains a divisor of 0.8. This is likely a typographical error in the state rule. {Comment made by EPA}*

Response: Section 3(e)(ii)(C) of the DFP is to be taken directly from Section 60.4142(a)(2)(ii)(C) of the model rule without any significant change. DAQ will correct this error in the final version of the Plan.

Comment #7. *DAQ has elected to depart somewhat from the model rule in the way it will allocate its mercury allowances. We generally agree with Utah's proposal, but offer the following comments on various aspects thereof:*

- a) *We believe it will be somewhat more burdensome to implement and track than the model rule, and therefore suggest that DAQ reconsider using the baseline determination methods in the model rule.*
- b) *Utah's proposal does not have allocation multipliers for lignite or sub-bituminous coal. As discussed in general terms [above], we believe that alternative energy reliability should not be discouraged.*
- c) *We agree with and support DAQ's decision to set aside 10% of these allowances for new units.*

{Comment made by IPSC}

Response: Taking each of these points one at a time:

- a) We assume the commenter is referring to the baseline determination method for heat input at units commencing operation before January 1, 2001. Once determined, the heat input values are used to assign relative amounts of the mercury emissions allowances. As discussed in response to comment A.4, DAQ had proposed a periodic re-evaluation of heat input values at existing EGUs. The model rule, on the other hand, includes a one-time calculation based on a period spanning 2000 to 2004. This appears in the in the DFP at Section 3(e)(i), and in

the model rule at Section 60.4142 (a)(1.) As discussed above, the purpose of this departure was to insure that if an EGU were to discontinue its operation, it would no longer continue to receive allowances after some time. Another commenter suggested (comment E.3) that the Department should consider changing the frequency of this periodic re-evaluation from once every year to once every five years. DAQ agreed with this suggestion, as it provided for a longer planning horizon and reduced the necessary paperwork.

- b) See response to comment A.4.
- c) DAQ notes and appreciates the feedback on this element of the mercury proposal. As part of the stakeholder process, DAQ specifically asked for comment on the percentage of set-aside allowances for new units.

F. R307-424, Permits: Mercury Requirements for Electric Generating Units:

Comment #1. Expressing support for this rule, which limits mercury emissions from EGUs and creates an offset bank patterned after the successful PM₁₀ offset bank. The comment also acknowledges that the CAMR, by itself, would not prevent an increase in mercury emissions from EGUs in Utah. {Comment made by Wasatch Clean Air Coalition}

Response: DAQ notes the comment and reiterates that its primary concern is to see that mercury emissions are on a downward trend in Utah.

Comment #2. EPA notes that it is still reviewing the offset provisions of the rule, and is reserving the right to make further comment at some later date. {Comment made by EPA}

Response: Noted.

Comment #3. Banking of mercury offset credits from tribal land should not be allowed unless a mechanism can be found to prevent the scenario under which such credits could be used to elsewhere in Utah, and subsequently additional generating capacity could be added on tribal land which, independent of DAQ permitting requirements, would require no offset credits. {Comment made by Wasatch Clean Air Coalition}

Response: DAQ notes the concern of the commenter and would add that this is a topic about which the agency specifically solicited public input. The State of Utah has no jurisdiction on Tribal lands, and could therefore not ultimately prevent the scenario described above. We do not necessarily believe it to be likely that coal fired power generation would cease to be economically viable, and then subsequently begin again on those Tribal lands. Nevertheless, in the final proposal we have eliminated the potential for credits to be generated by units outside of the DAQ's jurisdiction. The proposed revision to the language is as follows:

R307-424-3. Offset Requirement: Mercury.

Sources meeting the applicability requirements...

- (1) The permitted increase in...
- (2) The averaging period...

(3) Mercury emission credits must be obtained from an EGU located within the State of Utah, excluding~~including~~ any EGU located on Indian lands within the State.

Comment #4. Due to the limited ability of Utah's existing facilities to create offset credits, the 1.1 to 1 offset ratio in the proposed rule will substantially increase costs to both existing and proposed facilities.

It appears that unburned carbon in Utah coals acts in a similar manner to activated carbon injection (ACI), the most widely anticipated control for mercury emissions. Thus, ACI may not provide much benefit to Utah's EGUs, and further technology may not exist to create the offset credits necessary for permitting additional generating capacity.

Furthermore, there is a limited number of units that can potentially generate offset credits by retrofitting with more traditional equipment (fabric filters and sulfur scrubbers.) This could encourage EGUs to locate outside Utah and still impact the state with mercury emissions.

Finally (comment received orally), should DAQ propose to retain these offset provisions, the rule should establish a baseline date for the determination of credits. {Comment made by Pacificorp Energy}

Response: DAQ recognizes the potentially limited quantity of offset credits for permitting new EGUs. However, we also anticipate that there will be a significant number of credits generated in the near term due to retrofits, and we are optimistic that advancements in technology will lead to continued opportunity for the generation of credits in the future. Therefore, in the final proposal DAQ recommends retaining the notion of offsets. DAQ agrees with the suggestion to establish a baseline date, from which point forward one could establish credits to be used in subsequent permitting actions. As such, the following language is proposed in paragraph (6) of R307-424-3:

(6) The quantity of mercury emission reductions to be used for credit will be determined in accordance with 40 CFR part 75, or will be based on the best available data reported to the executive secretary. To the extent that the EGU has been subject to the requirements of part 75, mercury emissions data shall be the average of the 3 highest annual amounts over the most recent 5-year period. Mercury emission reductions made prior to December 31, 1999 shall not be creditable for such purpose.

The basis for the selection of this date is that 1999 was the year that the EPA used as a reference for evaluating mercury emissions as part of the CAMR.

Comment #5. The Department has proposed a rule that takes away the option of choosing cost effective reductions by mandating that facilities in the state meet either an emission limit or a specific degree of reduction. Additional control at one EGU may not be credited toward compliance with the rule at another. This removes the ability to choose the most cost effective method of compliance with the reduction requirements. {Comment made by PacifiCorp Energy}

Response: The commenter makes an interesting suggestion, but DAQ remains of the opinion that compliance on a unit-by-unit basis is ultimately more aligned with the goal of reducing mercury emissions for the protection of the public and the environment. Unlike the case with a criteria pollutant, there is in this instance neither a prescribed level of ambient concentration nor a quantitative demonstration of attainment thereof to indicate some margin of safety beyond which a concept such as unit averaging might be acceptable for economic reasons. In the absence of such criteria, DAQ believes it prudent to err on the side of protection.

Comment #6. There is still a great deal of uncertainty regarding the magnitude of mercury emissions from EGUs. Meeting an emission limit of 6.50×10^{-7} lb/mmbtu or an overall reduction requirement of 90% may not be achievable as contemplated by the proposed rule. This uncertainty is potentially compounded by coal supply issues.

While R307-424-4(3) allows the owner of a facility to petition for a modification to these limits, it is only after the facility is found to be in noncompliance with such, “despite properly operating the unit in conjunction with a baghouse as well as wet or dry flue gas de-sulfurization,” that this provision applies. This exposes the facility to potential action by a third party regardless of any regulatory discretion exercised by the Department. Reference to non-compliance for not meeting the target rate should be removed from the rule.

It appears that the intent of the proposed rule is to ensure that, at a minimum, mercury emissions are controlled through proper use of flue gas de-sulfurization and a baghouse. The Department should consider removing the 6.50×10^{-7} lb/mmbtu emission limit from

the rule, or at least structuring the rule such that it becomes a target objective rather than an enforceable limit. {Comment made by PacifiCorp Energy}

Response: DAQ appreciates the concerns surrounding both the accuracy of measuring mercury concentrations and the variability likely observed throughout an entire year. Nevertheless, the data that is available at this point in time would indicate that the “target objectives” specified in R307-424-4 are or will be reasonably achievable. For this reason we are compelled to include them as enforceable limits.

With regard to the concern about 3rd party interference, DAQ believes the commenter has raised a valid point, and is proposing that the following revision appear in the first two lines of paragraph (3.) Additional clarification also appears at the recommendation of staff:

R307-424-4. Emission Rates.

- (1) By no later than...
- (2) Compliance with...

(3) Should an EGU be unable to achieve the maximum emission rate or the minimum control efficiency described in~~found in noncompliance with~~ (1) above, despite proper~~ly~~ operation of~~ng~~ the unit in conjunction with a baghouse as well as wet or dry flue gas de-sulfurization, the owner or operator may petition the executive secretary for a modification to the compliance limitation for the unit~~limits therein~~ in accordance with R307-401.

Comment #7. It may be premature to impose emission limits or control efficiency requirements based upon data that may only represent a snapshot in time. We do not believe that the levels proposed for either of these is attainable on an ongoing annual basis given the variability of both coal quality and facility operations.

The CAMR will require continuous emissions monitoring beginning in 2009, and the data collected may reflect emission rates that are significantly different from the estimates made by EPA. DAQ should wait until this data has been collected before making policy decisions of this magnitude.

Additionally (comment received orally), we appreciate that DAQ has provided a mechanism by which one could petition the executive secretary for relief from limits established prior to the collection of continuous data. However, we believe the Division should add some specificity concerning this process. In addition to the CEM data, we are concerned that there may be other mitigating factors which might be overlooked in such an instance. {Comment made by IPSC}

Response: DAQ understands both the difficulty in attaining a reliable measurement using current techniques as well as the difference between a few isolated data points and

an entire year of continuous data. Nevertheless, we do not feel that it is appropriate to wait four or five years until there is a more reliable data set before taking steps to address mercury emissions in Utah. Based on the data that is available, we believe that the limits that were proposed are achievable with a reasonable margin for compliance. DAQ did consider the possibility that neither condition could be achieved, and for that reason, included the option to petition the Executive Secretary for an alternate limit. We agree with the commenter that the rule would benefit from the addition of some pre-defined criteria by which such a petition might be evaluated. As such we are proposing to add the following language in subparagraphs a) and b):

R307-424-4. Emission Rates.

- (1) By no later than...
- (2) Compliance with...

(3) Should an EGU be unable to achieve the maximum emission rate or the minimum control efficiency described in~~found in noncompliance with~~ (1) above, despite proper~~ly~~ operation of~~ng~~ the unit in conjunction with a baghouse as well as wet or dry flue gas de-sulfurization, the owner or operator may petition the executive secretary for a modification to the compliance limitation for the unit~~limits therein~~ in accordance with R307-401.

(a) Such petition shall be received no later than the date upon which the compliance assessment required under (2)(a) above is due.

(b) Any such determination by the executive secretary will be made on a case-by-case basis, taking into consideration energy, environmental and economic impacts and other costs. It will be based on the best information and analytical techniques available.

See also response to comment F.6 above.

***Comment #8.** The Department's cost analysis anticipates that three of Utah's seven affected EGU's would need to retrofit, at a cost of 50 million dollars each, in order to comply with the rule. However, if monitoring indicates that any of the other four EGUs cannot meet the proposed limits, the cost to utility customers could exceed 350 million dollars. {Comment made by Pacificorp Energy}*

Response: DAQ stands by its analysis, and would reiterate that the option to petition the Executive Secretary for an alternate limit makes this scenario unlikely.

***Comment #9.** This proposed rule places more restrictions on mercury emissions than the federal CAMR in many ways. Its emission limits are more restrictive than those contained in 40 CFR 60 subpart Da; its deadlines are sooner than Phase II of the CAMR; it includes a potential minimum removal efficiency which may not be consistently attainable; and it includes offset requirements for permitting.*

