Claymont STEEL

December 31, 2007

Mr. John A. Hughes, Secretary
DNREC
89 Kings Highway
Dover, DE 19901

Subject: Secretary's Order 2006-A-0058.

Dear Secretary Hughes:

Claymont Steel, Inc (Claymont Steel) is providing the Semi-Annual Mercury Source Reduction Reports per the Secretary's order 2006-A-0058.

If you have any questions concerning this matter, please contact me at 302.792.5444.

Sincerely,

Brian Houghton
Environmental Manager

Semi-Annual Mercury Source Reduction Report

Submitted By:
Claymont Steel
4001 Philadelphia Pike
Claymont, DE 19703

Submitted to:
Delaware Department of Natural Resources and Environmental Control
89 Kings Highway
Dover, DE 19901

December 31, 2007

Introduction

Claymont Steel recycles approximately 500,000 tons per year of scrap steel in an electric arc furnace (EAF). The USEPA identified EAF shops as sources of mercury emissions which can be traced to the scrap metal feedstock that is used to produce steel. The primary source of mercury contamination in scrap metal is from mercury switches used in automobile hood and trunk convenience lighting. When these devices are not removed prior to crushing and shredding the scrapped automobiles, the mercury becomes entrained in the scrap and volatilized in the melting process.

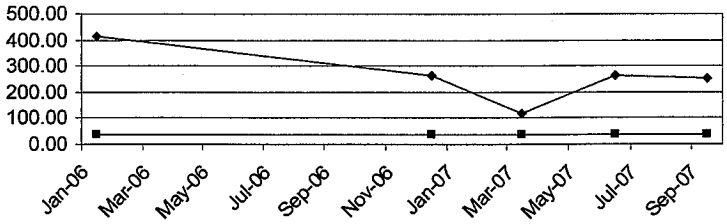
Claymont Steel remains committed to reduce mercury emissions from this facility. Claymont Steel has and is continuing to implement a number of source reduction measures to reduce mercury from entering the EAF via the scrap metal feed. These initial measures are part of an overall Pollution Prevention Program to further reduce the amount of mercury in the EAF feed and to reduce mercury emissions. Claymont Steel believes this is the most expeditious and environmentally beneficial alternative.

Source Reduction Strategy and Implementation

Claymont Steel has developed a plan of action to significantly reduce the level of unwanted mercury received in the scrap metal stream and thereby reducing mercury emissions. On a long term basis, the plan focuses on removing mercury convenience switches from end-of-life automobiles prior to recycling since this is the predominant source of mercury in steel scrap. However, the plan also has a more immediate component that provides a quick reduction in mercury levels.

Emissions Monitoring

Claymont Steel has conducted five emission testing events including the initial baseline testing in January 2006. The results are provided below.



	Jan-06	Dec-06	Mar-07	Jun-07	Sep-07
Claymont Hg Emissions (mg/Ton Steel)	416.32	262.87	116.22	261.05	254.50
*Proposed Consent Value DNREC (mg/Ton Steel)	35.00	35.00	35.00	35.00	35.00

The trend has shown a reduction in mercury emissions since the baseline monitoring conducted in January 2006, but not to the point of the proposed 35 mg/ton value. The results indicate an obvious level of success using the short term source reduction measures. With the short term measures being successful, Claymont Steel believes they will continue to the point of perhaps meeting the proposed standard over the next couple years as mercury switches are phased out using the NVMSRP. Again, Claymont Steel remains committed to the long term solutions as well in removing mercury at the source.

The Order requires a semi-annual progress report on implementing the mercury source reduction strategy. The source reduction measures are discussed below:

Short Term

Purchase from Suppliers who Have a Documented Mercury Removal Program. It should be noted that the volume of auto-free shred in the region is limited, so Claymont Steel also purchases shredded automobiles from suppliers who have a documented mercury removal program. Procuring auto scrap from a supplier who is removing the mercury switches is the long term solution.

No Shred from Municipal Sources. Claymont Steel has ceased using shredded steel scrap from municipal waste incinerators in accordance with the Order. This commercial ferrous scrap is magnetically recovered from residual and commercial waste combustion facilities. There is a concern that there could be residual mercury in this source of scrap in the form of thermostats, manometers, button cell batteries, flame sensors and other mercury-tilt switches.

Auto-Free Shred. Claymont Steel has arranged for our shredded scrap suppliers to supply shred that does not contain automobiles. Since mercury convenience switches from end-of-life automobiles is the predominant source of mercury in steel scrap, the elimination of this scrap source has already provided an immediate reduction in mercury emissions. We have audited these suppliers and found that these suppliers have satisfactory procedures in place.

Revise the Scrap Mix. Claymont Steel has reduced the amount of shredded scrap charged to the EAF as a percentage of total feedstock. Other scrap grades not containing auto scrap have been substituted to the extent they are available and feasible. This is a short term strategy and it should be noted that ultimately, the end-of-life auto scrap must be recycled eventually.

Long Term

National Vehicle Mercury Switch Removal Program (NVMSRP). Claymont Steel joined forces with other members of the Steel Manufacturers Association (SMA) and the American Iron and Steel Institute (AISI) to establish the NVMSRP. Claymont Steel entered into this agreement with other steelmakers to fully fund the NVMSRP over a three year period. This national program will remove large amounts of mercury from retired automobiles and recycle it with a licensed mercury retorter.

The program has five elements:

- Education and outreach for those removing switches,
- Removal, collection and management of switches,
- Recordkeeping and accountability of mercury recovery,
- Scrap selection and corroboration, and
- Review and improvement of the NVMSRP.

The effective date of the agreement is August 11, 2006 and approximately one year after the effective date, the USEPA and the parties to this agreement will meet to review the effectiveness of this program.

Foster Relationships with Suppliers who Participate in the NVMSRP. Claymont Steel will continue to purchase from suppliers who participate in the National Vehicle Mercury Switch Removal Program (NVMSRP). Ultimately, this is the most environmentally beneficial program because the mercury is recovered and recycled in a separate stream rather than allowing the mercury switch to be shredded and volatilized in an EAF at a steelmaking facility. Claymont Steel has notified suppliers indicating that we intend to utilize, to the maximum extent possible, scrap from vehicles which do not contain mercury from switches or scrap from vehicles that have had mercury switches removed.

Investigating Mercury Control Technologies. While the source reduction measures have been successful to date in reducing mercury emissions, Claymont Steel is volunteering to be part of a small scale program to test a proprietary mercury capture media technology developed by W. L. Gore & Associates (Gore). Thus far, the testing has demonstrated that the technology may be able to afford significant decrease, but Claymont Steel and Gore have agreed to conduct a larger pilot program that will give clearer capture over the small media, which will commence over the first and second quarters of 2008.

CEMS Evaluation. Claymont Steel will initiate a project to determine the feasibility of installing a mercury continuous emissions monitoring system (CEMS). Based on our preliminary conversations with emissions monitoring professionals, we believe that the reliability of these systems is suspect, and installation on a positive pressure baghouse system may be problematic. EPA has performed there own due diligence and

documented within the 40 cfr part 63 federal register dated December 28, 2007, (see excerpt attached "Monitoring Mercury") that such systems are not "technically feasible" for installation on positive pressure EAF baghouses without stacks, etc..

mercury was a pollution prevention approach based on preventing mercury switches from entering the EAF. We also explained at proposal that standards requiring pollution prevention were not work practices under section 112(h), and even assuming for the sake of argument that they were work practices, it is not feasible to prescribe or enforce an emissions limit for mercury within the meaning of section 112(h) (72 FR 53817). We received no adverse comments on or challenges to our MACT floor determination or our conclusion that pollution prevention standards were not work practices under section 112(h).

We evaluated ACI as a beyond-the-floor control option for mercury emissions and rejected the option for several reasons (72 FR 53824). We also considered the feasibility of establishing an emission limit for mercury and explained in detail why we chose instead an approach based on a pollution prevention standard (72 FR 53816). We disagree that the proposed standard for mercury relies solely on a voluntary program to keep mercury switches out of the scrap supply. First, there is nothing voluntary about the obligations of EAF owners or operators under the rule. They are not in compliance with the rule unless they obtain scrap from dealers participating in an effective program to remove mercury switches. Moreover, the standard contains detailed requirements for preparing and operating a pollution prevention plan that must be approved by the Administrator, specific criteria that will be used by the Administrator to review and approve plans, criteria for approval of switch removal programs to ensure they are effective, and reporting and recordkeeping requirements (including progress reports). The Administrator can evaluate the success of an approved switch removal program based on progress reports that provide the number of mercury switches removed, the estimated number of vehicles processed, and the percent of switches removed. Based on this evaluation, the Administrator may subsequently disapprove a previously approved switch removal program or a site-specific plan. An example of an existing switch recovery program that has been documented as successful is the one implemented by the State of Maine, which was one of the first such programs and was in place in advance of the NVMSRP. The Maine program is now fully operational and reported a recovery rate of over 90 percent for mercury switches in 2006.

The commenters provided no new information or additional facts with respect to ACI that were not considered and addressed at proposal when we evaluated it as a beyond-the-floor option (72 FR 53824, 53825) and concluded that:

> Based on the fact that activated carbon injection is not a demonstrated mercury control technology for EAF facilities, the uncertainty in design and performance of the add-on controls and hence of the actual mercury emission reductions for EAF facilities, the cost impacts per ton of emission reduction, and the adverse energy and solid waste impacts, we determined that control beyond the floor is not warranted for mercury. Therefore, we are proposing that the removal of mercury switches from the scrap before it is melted in the EAF represents MACT for mercury for new and existing EAF facilities.

We emphasize again that ACI was not rejected as a beyond-the-floor option solely on the basis of cost effectiveness. We concluded that ACI has not been demonstrated for EAFs and that there is a great deal of uncertainty in design (e.g., the carbon capacity that would be needed to treat a highly variable inlet loading of mercury) and potential performance (i.e., how much mercury would actually be removed), and hence of the actual mercury emission reductions that might be achieved. We also considered and discussed the adverse energy and solid waste impacts.

2. Monitoring for Mercury

Comment: Several commenters stated that stack monitoring for mercury emissions from EAFs was needed to assess the effectiveness of the NVMSRP and other programs. These commenters believe it is important to have information on the actual emissions, the emissions impact of pollution prevention measures, and an indication of need for additional actions that may be needed to further reduce mercury emissions. One commenter stated that CEMS are essential to establish that the voluntary switch removal program reduces emissions. Another commenter requested that the monitoring program include a requirement to test emissions within 6 months of publication of the final rule to establish a baseline for each facility.

One commenter stated that although the proposal states that no feasible methods of emissions testing exist for any EAF facility (e.g., continuous emissions monitoring), there are monitoring technologies that are adaptable for use by any facility in this industry. The commenter noted that batch process emissions are tested and monitored in many industrial sectors, and EPA has established emission standards for many batch processes without requiring the use of continuous monitors, including Pesticide Active Ingredient Manufacturing and Miscellaneous Organic Chemical Manufacturing. The commenter also noted that EPA has recently promulgated the "sorbent tube" method for sampling stack gases at coal-fired power plants (40 CFR part 75, appendix K). The commenter believes that because this method of monitoring mercury is capable of sampling flue gases over any period of time (hours or even days), there appears to be little impediment to using this method to sample "batch" processes like those at an EAF. Another commenter also noted that CEMS are available and in use at other types of mercury-emitting facilities.

One commenter stated that data from frequent monitoring will be essential to determine if actual reductions in mercury emissions have been achieved in order to determine whether the "sunset" of the pollution prevention standard in 2017 should be allowed to occur. One commenter was concerned that if there are no mercury emission standards, it may be very difficult for EPA to conduct its residual risk determination. The commenter wonders how EPA will calculate residual risk when there has been no attempt to establish a baseline of mercury emissions, determine the effectiveness of the switch removal program, or measure emissions after controls are implemented. One commenter stated that at least one steel mill of which they are aware has reported higher levels of mercury emissions since starting to participate in the NVMSRP. The commenter notes that frequent monitoring is needed to determine whether the program is effective.

One commenter suggested that EPA require facilities to keep records of the sources of scrap metal entering the facility in a manner that allows correlation of scrap sources with elevated mercury emissions and that these records be available to the Agency and accessible for public review.

Response: At proposal, we considered the use of CEMS for mercury (72 FR 53817):

> We therefore examined the technological and economic feasibility of continuous monitoring for mercury from these sources. We note first that mercury CEMS are not demonstrated for EAF, raising a threshold question of their technical feasibility for all EAF. Furthermore, most EAF discharge emissions from positive pressure baghouses without stacks. Continuous mercury monitoring would not be technically feasible for these EAF (i.e., stackless EAF), even assuming that mercury CEMS were otherwise

demonstrated for EAF. This is because volumetric flow rate and concentration would need to be determined by CEMS to measure the mass emission rate of mercury, and without a stack, it is nearly impossible to obtain an accurate measurement of volumetric flow rate or to obtain representative measurements of mercury concentration in the discharged emissions. Indeed, EPA has previously determined that the use of continuous opacity monitoring systems (COMS) was not feasible for positive pressure baghouses without stacks for this reason.

The commenters did not address any of these points that we made at proposal. After further consideration of CEMS, we continue to believe that CEMS are not feasible for monitoring baghouses without stacks.

One commenter stated that batch processes such as EAF steelmaking could be monitored for mercury emissions using the sorbent tube method. We agree that there are monitoring methods for mercury that can be used for batch processes; however, the problem with applying CEMS or the sorbent tube method is because of baghouses without stacks, not because steelmaking is a batch process. We received no other comments that addressed, much less refuted, EPA's view of the fundamental shortcomings of applying mercury CEMS to EAFs without stacks that were discussed at proposal.

We discuss in much greater detail in section IV.B.3 of this preamble the monitoring requirements of the rule and how they are used to determine the effectiveness of the standard. We have developed monitoring requirements that are appropriate for the pollution prevention standard, and since we have concluded it is not necessary or appropriate to establish a mercury stack emission limit, it is not appropriate and in most cases it is infeasible to require monitoring for mercury emissions.

The lack of a mercury emission standard will not affect our ability to conduct a residual risk assessment in the future. We will by that time have historical data on the effectiveness of the MACT standard, and mass balance approaches as well as innovative methods for sampling and analysis of sources or ambient air concentrations may provide additional data.

We cannot directly address the commenter who claimed that one plant's mercury emissions had increased since joining the NVMSRP because the commenter provided no details to substantiate the claim. However, there is no doubt that removal of mercury switches before motor vehicle scrap is melted will reduce mercury emissions, whether the removal takes place under the NVMSRP or under other switch removal programs.

3. Effectiveness of the Pollution Prevention Standard for Mercury

Comment: Several commenters stated that requirements to verify the effectiveness of the NVMSRP and other switch removal programs are needed and that accountability is not adequately addressed. The commenters claimed that there are no enforceable mechanisms to ensure effective participation in or compliance with the switch removal programs and identified the need for increased recordkeeping and reporting beyond just participation in a switch removal program. One commenter requested that EPA include enforceable measures of accountability that include consequences if the programs do not meet their goals. Two commenters requested that quantifiable performance measures be included to verify the effectiveness of mercury reduction programs. One commenter requested written documentation and audits of program participation of suppliers, evaluation of switch recovery rates, and mercury emissions testing and monitoring requirements. Another commenter suggested incorporating verifiable measurement and accountability systems and using some of the specific language from the MOU to make the scrap plans accountable and enforceable. This commenter also requested that EPA revise the rule to include enforceable scrap specification requirements and binding contracts with scrap suppliers (rather than a "means of communicating") and require recordkeeping, reporting, and certification to assure that scrap meets specifications, as well as contract termination in the event of deviations. This commenter also states that the switch removal requirements must be more than a "goal"; they must be achieved through binding contracts establishing removal requirements and effective tracking, recordkeeping, and reporting requirements. Two commenters noted that since there are no effective performance measures, goals, or consequences for failure to remove switches, there is no strong incentive for the NVMSRP to continue after the initial funding has been expended.

Two commenters requested achievement of specific switch recovery percentages as the rule is implemented. They suggest a ramped capture rate of 30 percent for year one, 50 percent for year two, and 80 percent in year three. The commenters believe it is essential that the rule require increasing mercury switch capture rates so that a rate of 80 percent or more is achieved within two to three years.

One commenter stated that two studies of switch removal and mercury emission reductions do not constitute evidence of a cause and effect relationship between removal of switches and mercury reductions. The commenter believes that documentation based on a large number of studies can determine the cause and effect relationship. The commenter further states that because no monitoring or testing of mercury emissions are required by the proposed rule, no evidence of correlation between amounts of mercury emitted and the quality of scrap can be demonstrated, and there would be no evidence that the switch removal program is working to reduce mercury emissions.

Several commenters noted that the proposed rule is silent on what happens if the 80 percent switch removal goal is not met. One commenter believes the rule should include a final date when the goal is to be met and identify emission standards to be met as an alternative to the 80 percent removal goal.

One commenter was concerned about using an estimate of the percentage of mercury switches removed to determine whether an approved plan should continue to be approved because the estimate of the percentage of mercury switches removed is highly uncertain and dependant on many assumptions. The commenter stated that determining the effectiveness of site-specific mercury switch removal programs by comparing uncertain statistics with an aggressive removal goal (80 percent) may cause effective programs to have their approval revoked.

Response: The NVMSRP resulted from a two-year process of collaboration and negotiation among a diverse group of stakeholders to create a dedicated nationwide effort to remove mercury-containing switches from end-of-life vehicles. The stakeholders included EPA, automakers, steel manufacturers, environmental groups, automobile scrap recyclers, and State agency representatives. These stakeholders signed an MOU detailing their respective responsibilities and commitments in the national switch recovery effort. This effort will result in substantial reductions in mercury emissions from EAFs by removing the majority of mercury from metal scrap. In addition, it will have environmental benefits from reducing mercury emissions from sources other than EAFs and will reduce mercury releases to media other than air. We disagree with