United States Steel Corporation
Law Department
600 Grant Street, Room 1500
Pittsburgh, PA 15219-2800
412 433 2919
Fax: 412 433 2964
email: dwhacker@uss.com

David W. Hacker
General Attorney - Environmental

August 19, 2011

VIA EMAIL AND OVERNIGHT MAIL

Robert Thompson, Esquire
Associate Regional Counsel, C-14J
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604

RE: United States Steel Corporation – Gary Works
Notice and Finding of Violation

Dear Mr. Thompson:

On or about June 23, 2011, United States Steel Corporation – Gary Works (U. S. Steel), received a Notice of Violation and Finding of Violation (NOV) alleging that U. S. Steel "failed to properly control emissions while dumping iron to the ground [beaching], while opening blast furnace relief valves, and while operating its blast furnace." In that correspondence, U. S. EPA (EPA) asserted that this alleged improper operation resulted in excessive levels of "particulate matter opacity." In that correspondence, EPA also alleged that U.S. Steel violated the National Emission Standards for Hazardous Air Pollutants, the Indiana State Implementation Plan (SIP), and Gary Works' Title V Permit No. T089-7663-00121.

On July 21, 2011, U. S. Steel met with EPA at EPA's Region V offices in Chicago to discuss the allegations and blast furnace operations and processes. Mr. David Sampias of the Indiana Department of Environmental Management (IDEM) participated via teleconference. We appreciated the opportunity to discuss the operations and processes of blast furnaces during that meeting. We believe the meeting was productive and trust that it will lead to a better understanding of our responses provided herein. To facilitate an easier review of our responses, we have provided the numbered paragraph from the NOV along with the corresponding allegation, as provided in the NOV, followed by our response. U. S. Steel appreciates the opportunity to provide this response and would be pleased to address any questions that the United States Environmental Protection Agency (USEPA) may have after it reviews the response.

Paragraph No. 8: EPA Allegation Regarding Beaching Emissions:

On December 14, 2009, U.S. Steel placed iron on the ground, or beached iron, which

resulted in opacity of 30% as a three-minute average. This opacity is in excess of the 20% standard in violation of the Indiana SIP at 326 IAC 6.8-10-3(9), and U.S. Steel's Title V permit at C.5(a)(12). Because U.S. Steel has demonstrated the ability to beach iron while generating little to no opacity, this instance indicates a failure to use good air pollution control practices for minimizing emissions, in violation of 40 C.F.R. Part 63.7800(a), Subpart FFFFF.

U. S. Steel Response:

In the event that the iron is unusable at the Basic Oxygen Furnace (BOF), the iron is "beached" (poured out of the sub ladles onto the ground.) The molten metal would otherwise cool and solidify in the subcar. The iron may be unusable because of chemistry or it may not be able to be used at the BOF because of problems at the BOF. Such incidents result in the iron being beached. Iron beaching is not a preferred practice at Gary Works, and the practice is rarely utilized.

At U. S. Steel Gary Works, beaching is conducted within the confines of a designated iron beaching facility, as explained in the attached procedure (Attachment A). The objective is to slowly pour the unusable iron from the subcar to minimize emissions. Once beached, the iron and/or slag is allowed to solidify, and then removed from the area with the assistance of front-end loaders. The beached material is then loaded into dump trucks, taken to the process or plant currently operated by a contractor, broken up, sent to a hammer mill, and based upon size of material reclaimed as scrap by either the BOF or the Blast Furnace.

U. S. Steel has determined the opacity from the December 14, 2009 beaching event was 27% - 3 minute average, not 30% as cited by EPA. While U. S. Steel questions how EPA determined that the opacity was 30%, it recognizes that the incident was in excess of the applicable 20% 3-minute average standard.

As discussed during our meeting on July 19th, U. S. Steel has retrained its employees on the proper beaching procedures to prevent reoccurrence. While U. S. Steel questions the Agency's reference to and applicability of 40 C.F.R. Part 63.7800(a), Subpart FFFFF to the beaching operation (as the beaching does not occur at any of the affected sources subject to the MACT), U. S. Steel is confident that with the proper training and by following the attached procedure, it can consistently comply with the applicable permit limit and standard.

As a note the correct rule citation for beaching and recycling practices is 326 IAC 6.8-8-5(3)(F)(i). This rule is not included the current Title V permit but U. S. Steel will clarify this in the renewal permit.

Paragraph No. 9: EPA Allegations Regarding Bleeder Valve Emissions:

On December 15, 2009, U.S. Steel's #14 Blast Furnace relief valves emitted opacity at 22% as a three-minute average. This opacity is in excess of the 20% standard in violation of the Indiana SIP at 326 IAC 6.8-10-3(9), and U.S. Steel's Title V permit at C.5(a)(12). Furthermore, U.S. Steel has demonstrated the ability to open relief valves for planned activities while generating little to no opacity, U.S. Steel has also demonstrated the ability to avoid unplanned relief valve openings or to emit little to no opacity during unplanned relief valve openings. Because of this, the excessive opacity on December 15, 2009, indicates a failure to use good air pollution control practices for minimizing emissions, in violation of 40 C.F.R. Part 63.7800(a), Subpart FFFFF.

U. S. Steel Response:

As we discussed during the meeting and as provided in previous correspondence dated September 5, 2008, bleeders are considered an integral part of the blast furnace and serve the safety function of relieving the pressure inside the furnace during times of start-up, shutdown, and malfunction. The bleeders are used when there is dangerous, excess pressure in the blast furnace. For these reasons, U. S. Steel has not separately addressed the bleeders in its Title V permit application materials; nor has the Indiana Department of Environmental Management (IDEM) identified or regulated the bleeders separately from the blast furnaces.

Reporting of Emissions from Bleeder Valves

In addition, as stated in our correspondence dated September 5, 2008, U. S. Steel reports the emissions from the bleeder valves as part of its annual emission reports. U. S. Steel uses emission factors from FIRE (EF-45) when completing the emission reports. These reports are provided to IDEM as required by Rule 6 of Article 2 of IDEM's Air Permit Review rules (326 IAC 2-6). As noted above, U. S. Steel has not separately identified the bleeder valves in its Title V application because the bleeder valves are an integral part of the blast furnace proper. Even if the emissions were to be segregated from the blast furnace, such emissions would be considered insignificant according to 326 IAC 2-7-1(21).

Corrective Actions/Procedures for Controlling Bleeder Openings

Bleeder occurrences are controlled and limited by following established written operating procedures that govern the operational aspects of the furnace. (As we discussed, bleeder openings are generally undesirable operating conditions.)

To better respond to your questions regarding the bleeder valve opening occurrences, we reviewed the history of the bleeder openings and determined that a few, isolated incidents have skewed the data which EPA stated are not representative of the industry. Our review of the bleeder valve occurrences indicates that most of these bleeder valve openings

occurred on the same day or within a two or three-day time period, as a result of the same malfunction or furnace issue. Such occurrences are not typical and result in showing an unusually high occurrence of bleeder openings. During an upset condition, the valves can open and close several times during the same hour. However, each time the valve is opened; it is recorded separately although a single incident could be attributed to several, individually recorded measurements.

December 15, 2009 Bleeder Incident

U. S. Steel questions EPA's reference to citation 326 IAC 6.8-10-3(9) as this citation applies to fugitive dust sources in Lake County which do not apply to a bleeder stack. "Fugitive particulate matter" is defined at 326 IAC 6.8-10(9), as it applies throughout Rule 10, as "any particulate matter emitted into the atmosphere other than through a stack," and 326 IAC 6.8-10(12) defines "stack emissions" as "the particulate matter that is released to the atmosphere from a confined opening like the exit of a control device or chimney." Emissions from bleeders are not fugitive emissions by definition. EPA recognizes that emissions from bleeders are stack emissions, where in its document, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Plants – Background Information for Proposed Standards, on page 3-18, EPA states, "[t]o prevent damage to the furnace, the pressure is relieved through bleeder *stacks* [emphasis added] *on top of the furnace* [i.e., indicating that the stack is part of the furnace] that discharge the particle-laden gas directly to the atmosphere.

Since the bleeder stacks are "stacks" by definition, and the emissions emitted from the bleeder stacks are "stack emisions" by definition, 326 IAC 6.8-10-3(9) [Lake County *Fugitive* Particulate Matter regulations] does not apply to the bleeder stacks or the emissions cited in the NOV. Since the emissions from the bleeder stack are "stack emissions," the general opacity standard for Lake County, codified at 326 IAC 5-1-2(2) applies which applies a 20% *six-minute* average limitation to the bleeder stacks. The six minute average from the above-cited bleeder emissions was 12%, well within the applicable limitation.

U. S. Steel questions U. S. EPA's assertion that, "[b]ecause of this, the *excessive* opacity on December 15, 2009, indicates a failure to use good air pollution control practices for minimizing emissions, in violation of 40 C.F.R. Part 63.7800(a), Subpart FFFFF." First, as stated above, U. S. Steel notes that while it minimizes the number of bleeder events and emissions from bleeder events, the December 15, 2009 bleeder event did not result in "excessive" opacity. Second, on a more general note, U. S. Steel notes that while it has implemented practices to minimize the occurrence of and emissions from bleeder events, and appreciates EPA's recognition of U. S. Steel's proactive practices, because of the safety nature of the bleeders, EPA cannot generally conclude that bleeder emissions or bleeder emissions in excess of an applicable standard indicates that the source failed to use good air pollution control practices for minimizing emissions.

Paragraph No. 10: EPA Allegations Regarding Blast Furnace Top Emissions:

On December 15, 2009, U.S. Steel's Blast Furnace #4 top emitted opacity at 23.9% over the period of emissions. This opacity is in excess of the 20% standard in violation of the Indiana SIP at 326 IAC 6.8-10-3(9), and U.S. Steel's Title V permit at C.5(a)(12).

U. S. Steel Response:

U. S. Steel agrees that the opacity standard of 20% 3-minute average provided at 326 IAC 6.8-10-3(9) applies to the blast furnace tops, including the blast furnace top emissions that occurred on December 15, 2009. However, U. S. Steel disagrees with EPA's determination of compliance with the standard. U. S. Steel agrees that if an operation lasts less three minutes, the averaging period is shortened to the length of the operation per 326 IAC 6.8-10-3(9). It is significant to note that the IDEM rule applies the standard to 3-minute averaging or the *duration of the operation*, not the duration of visible emissions. In EPA's determination, EPA appears to assert that the *operation* occurred for a 2-minute, 15-second duration, and the opacity from the top for the shortened duration, i.e., period of time in which visible emissions occurred was 22%. When the opacity is correctly averaged for 3 minutes, as the furnace was operating for the entire averaging period, the opacity is correctly determined to be 18% and emissions from the furnace top were in compliance with the applicable standard codified at 326 IAC 6.8-10-3(9).

Blast furnace top operations are continuous while iron is being produced. Observation of emissions from the top of the blast furnace should not be limited to simply the period when visible emissions are occurring. In short, observations were made for more than three minutes and therefore the three minute average can and should be used.

We appreciate the opportunity to respond to the NOV and we look forward to resolving any outstanding issues expeditiously. We appreciate your continued attention and cooperation. Should you have any questions regarding this correspondence, please contact me.

Sincerely,

David W. Hacker

Attachment

cc: Sabrina Argentieri, Esq. (EPA) (via email) (w/attachment)
Brian Dickens, PE (EPA) (via email and express mail) (w/attachment)
David Sampias (IDEM) (via email) (w/attachment)

EPA-R5-2012-0005960000146

David Smiga, Esq. (USS) (via email) (w/attachment)
Fred Harnack (USS) (via email) (w/attachment)
Tishie Woodwell (USS) (via email) (w/attachment)
Michael Dzurinko (USS) (via email) (w/attachment)
Joseph Hanning (USS) (via email) (w/attachment)
Robert Lange (USS) (via email) (w/attachment)
James Alexander (USS) (via email) (w/attachment)
Alexis Piscetelli (USS) (via email) (w/attachment)
Mark Gornick (USS) (via email) (w/attachment)

ATTACHMENT A

U. S. STEEL GARY WORKS
IRON BEACHING PROCEDURE

Doc#: 2710IBF5SJP
Title: DUMPING IRON AT IRON BEACHING FACILITY
Issue Dt: 01/05/1996
Revision Date: 08/12/2011 Review Interval: 12
Cat: Safety Doc Type: SJP
Auth: MANAGER SO. FCE. REFRACTORIES, LADLES & LIQUID FUE
Desc: DUMPING IRON AT IRON BEACHING FACILITY
Loc: Auxiliaries-South Furnaces-Iron Producing-Gary Works

DUMPING IRON AT THE IRON BEACHING FACILITY:

PROTECTIVE APPAREL AND EQUIPMENT:
HARD HAT, SAFETY GLASSES W/SIDE SHIELDS, SAFETY SHOES W/METATARSAL PROTECTION, FLAME RETARDANT COAT AND PANTS, 100% COTTON CLOTHING, GLOVES IN GOOD COND. FACE SHIELD, HEARING PROTECTION, RESPIRATORS, SELF CONTAINED BREATHING APPARATUS AND HAND HELD CO&SO2 MONITORS AS REQUIRED.

1. OPERATION: COMMUNICATION.
PROCEDURES:
A. Auxiliaries personnel will contact the SAM or Shift Manager before dumping at the Iron Beaching Facility. Auxiliaries personnel will also call IMS at x[redacted], x[redacted], or at [redacted] to advise that Iron will be dumped and that the area will need cleaning.

B. SHOULD DUMPING, KISHING, OR SKIMMING OF HOT METAL BE PERFORMED ANYWHERE ELSE OTHER THAN THE IRON BEACHING FACILITY THE FOLLOWING CALLS MUST BE MADE.
1. Load Dispatcher [redacted]
2. Environmental Compliance Manager (Iron) [redacted] or [redacted]
3. Safety (Iron) x[redacted].
4. JUM [redacted] or [redacted].

C. A physical inspection of dumping location must be performed first, look for water accumulation in pit or on ground areas.

HAZARDS: FAILURE OF PROPER COMMUNICATION COULD RESULT IN OPERATIONAL DELAYS AND POSSIBLY LEAD TO EQUIPMENT DAMAGE AND/OR PERSONAL INJURY. EXPLOSION COULD OCCUR FROM WATER ACCUMULATION IN PIT.

2. Operation: ADMIT RAILROAD TRAFFIC.
PROCEDURES:
A. Follow established procedure doc.#2710IBF1SJP("Admitting Railroad Traffic Into the Iron Beaching Facility on 12K Track")when transporting sub into the IBF and spotting it at the desired location of dump.

HAZARDS: THE SAME HAZARDS APPLY AS IN THE ABOVE MENTIONED PROCEDURE IF NOT PROPERLY FOLLOWED. ALSO, THERE'S AN INCREASED

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PERCENTAGE OF BEING BURNT BY SPLASHING HOT METAL WHEN FULL LADLES ARE BEING TRANSPORTED FOR INTENDED ACTIVITY.

3. OPERATION: BEACH(dump)IRON.
PROCEDURES:

A. After attaining a desired beaching position (stations 1-6),and the engine has uncoupled from the ladle, plug the ladle turning cord into the ladle plug.

HAZARD: PINCH POINTS. A LOOSE FITTING PLUG MAY NOT WORK AND/OR MALFUNCTION RESULTING IN EQUIPMENT DAMAGE AND/OR PERSONAL INJURY.

B. Exit the IBF station door where that cords power switch is located and energize the switch.(Stand to the left whenever operating the handle).

HAZARD: TRIPPING AND SLIPPING. POSSIBILITY OF MALFUNCTIONING SWITCH RESULTING IN AN INJURY AND/OR EQUIPMENT DAMAGE.

C. Make sure all doors and openings are closed and have been secured while returning to the pulpit.

HAZARD: PINCH POINTS. FAILURE OF CLOSURES TO OPENINGS COULD RESULT IN UNWANTED EMISSION ESCAPE AND/OR HIGH LEVELS OF CO&SO2 RELEASES.

D. Once in the pulpit energize the red light/warning signal to alert others of inside activity.

HAZARD: PINCH POINTS. FAILURE TO PROPERLY ALERT OTHERS COULD RESULT IN AN INJURY.

E. Select the proper station position number(1-8)on the control panel selector switch.

HAZARD: PINCH POINTS.

F. Observe the Dräger Polytron 2XP monitor readings to draw a reference from the beginning CO&SO2 levels.

HAZARD: FAILURE TO OBSERVE MONITOR COULD RESULT IN ASPHYXIATION

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CASE.

G. With the "dead-man" depressed engage the ladle tuner control handle to turn the ladle. (Make sure the ladle is turning CLOCKWISE).

HAZARD:

H. Rotate the ladle just enough to pour off approximately 1 ton of molten material onto the ground for pre-heating of the beaching area. Wait two minutes before proceeding with the dump.

HAZARD: AN EXPLOSION MAY OCCUR IF DUMPED TOO FAST ONTO COLD AND/OR WET GROUND, RESULTING IN AN INJURY AND/OR EQUIPMENT DAMAGE.

I. Continue the beaching process at a measured dumping rate insuring the metal is poured from the ladle in a slow but steady stream.

HAZARD: FAILURE TO MAINTAIN A MEASURED DUMP RATE COULD RESULT IN EQUIPMENT DAMAGE, POSSIBLY RAISE THE EMISSION LEVELS AND/OR CAUSE AN INJURY IF POURED OUT TOO FAST.

J. Only one sub will be dumped at a time.
K. Iron will be dumped at a maximum rate of 15 tons per minute.
L. When more than one sub is dumped, wait between dumping until the mouth of the next sub is visible from the pulpit.

ENVIRONMENTAL
HAZARD: IF THE DUMPING RATE IS TOO FAST OR SUFFICIENT TIME IS NOT ALLOWED BETWEEN DUMPS, POSSIBLE EXCEEDANCE OF THE 20% OPACITY 3 MINUTE LIMIT MAY OCCUR.

M. Monitor the Dräger Polytron 2XP throughout the beaching process noting the CO and SO2 levels. If the CO levels exceed 200ppm and/or the SO2 levels exceed 10ppm in the pulpit all personnel must evacuate the area. When it becomes critically necessary to continue under these conditions Self Contained Breathing Apparatus(SCBA)will be worn and used according to the established plant procedures.

HAZARD: HIGH LEVELS OF UNDETECTED CO & SO2 COULD RESULT IN ASPHYXIATION.

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NOTE: After the sub has been successfully dumped and the engine has moved the sub from the dumping station to the kishing table, the engine will leave the building and all doors will remain closed until the kishing activity has been completed. All doors will remain in the closed position until the heavy/thick smoke has dissipated.

N. When the emissions become heavy and vision is obstructed to the point where the beaching process is no longer visible stop the dump and do not continue until the conditions improve.

O. If at any time during the dump you may suspect a problem of splash back onto the track area or trouble somewhere else stop the dump and do not proceed until the problem has been rectified.

HAZARD: FAILURE TO STOP THE PROCESS COULD RESULT IN INJURY OR EQUIPMENT DAMAGE.

P. Once the beaching process is finished and the CO&SO2 levels are within safe operating parameters turn the ladle back to the upright (12 o'clock)position and open the overhead doors on the north end of the building.

HAZARD: PINCH POINTS. FAILURE TO ENSURE SAFE LEVELS OF CO & SO2 AND PREMATURELY OPENING THE DOORS COULD RESULT IN UNSAFE AIR RELEASE.

Q. De-energize the ladle turning cord power switch.(Stand to the left of the switch when pulling the handle down).

HAZARD: (SAME AS ITEM B. ABOVE) ALSO REALIZE THE POSSIBILITY OF FALLING ICE AND SNOW FROM ABOVE DUE TO THE BUILDING BECOMING WARM DURING THE BEACHING PROCESS.

R. Remove the ladle turning cord from the ladle plug and store properly in its' designated location.

HAZARD: PINCH POINTS, SLIPPING AND TRIPPING, BODY BALANCE.

S. Observe the immediate track and beaching area just used and address any problems that may have occurred resulting from the dump, before allowing another process to take place.

HAZARD: FAILURE TO RECOGNIZE A PROBLEM COULD RESULT IN AN INJURY AND/OR EQUIPMENT DAMAGE.

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T. Return to the pulpit and de-energize the red light/warning signal.

HAZARD: SLIPPING AND TRIPPING, PINCH POINTS.

U. Instruct the remote or non-remote engine crew to transport the ladle(s) out of the building following the established procedure Doc.#2710IBF1SJP.

HAZARD: SAME HAZARDS THAT APPLY TO THE PROCEDURE # 2710IBF1SJP.

V. Call the hot metal scales and inform them that the ladle(s)are ready.

W. Inform proper departments and individuals on the contact chart of the completed and pending activities at the IBF.

HAZARD: FAILURE OF PROPER NOTIFICATION COULD RESULT IN OPERATIONAL DELAYS AND POTENTIALLY LEAD TO AN INJURY AND/OR EQUIPMENT DAMAGE.

NOTE: Currently IMS is the contractor notified when the operation dictates the dumping of hot metal. This safe job procedure applies to USS personnel as well as contractor employee's who will be responsible for the safe and proper operations of the beaching activities at the IBF.

ENVIRONMENTAL
HAZARD: EMISSION EXCEEDANCE DUE TO POSSIBLE OPACITY READING, GREATER THAN 20% FOR A 3 MINUTE PERIOD.

SHADING DENOTES LATEST REVISION(S)

THIS ENDS THIS PROCEDURE