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Via E-Mail and First Class Mail

June 17, 2015

Ms. Katie Koster
Michigan Department of Environmental Quality- Air Quality Division
Detroit Field Office
3058 West Grand Blvd, Suite 2-300
Detroit, MI 48202

Re: Response to Violation Notice dated May 27, 2015
United States Steel Corporation
SRN: A7809, Wayne County

Dear Ms. Koster:

As we have previously communicated, United States Steel Corporation (U. S. Steel) finds the Michigan Department of Environmental Quality's (MDEQ's) inquiry and subsequent issuance of a Violation Notice (VN) regarding the Vessel 26 replacement particularly troubling, especially when the written inquiry and VN were received several months after the vessel replacement was discussed with U. S. EPA and the State of Michigan, including the Attorney General - Environment, Natural Resources, and Agriculture Division. As you may recall, U. S. Steel determined that during the Basic Oxygen Process Furnace (BOPF) Shop maintenance project that involved replacing Vessel 26, it would be appropriate to replace the vessel with a vessel with more freeboard. While production and heat size would not increase, the additional freeboard would serve to reduce the frequency of and emissions related to slopping events. The issue of permitting was previously discussed with counsel for the Department. U. S. Steel answered the questions and indicated that no permit was required. We advised the Government, including the State of Michigan, when the project was to be completed. We never heard anything from the Department or its counsel after those discussions. The replacement was completed in November 2014. To our surprise, we received inquiries about the vessel replacement in March 2015, several months after the project was already discussed and implemented. And now, two months after responding to the Department's inquiry, the Department falsely asserts that replacing the vessel was subject to permitting, despite the open communications prior to, during and after the vessel replacement.

U. S. Steel respectfully disagrees with the allegations raised in the VN. We are hopeful that we can communicate openly and avoid further misunderstandings. We believe that we have established open lines of communication with the Department; and if the Department were to use those lines of communication constructively and more regularly, issuance of the VN would have been properly avoided. The issuance of improper VNs can be damaging to U. S. Steel's reputation. Thus, U. S. Steel does not take the receipt of VNs lightly and would prefer that the Department discuss the matter openly with U. S. Steel and get all of the requisite information before making a decision on whether or not to issue a VN. While in this instance, the Department did send an inquiry to which U. S. Steel responded, the Department never followed up with U. S. Steel for any additional information or explanation. This is disappointing.

In any case, the Department's assertions as provided in the VN are not substantiated with any policy, guidance or other information. This makes it difficult to respond to the VN. The Department, instead, recklessly asserts that replacing Vessel No. 26 at U. S. Steel's Great Lakes Works was subject to permitting. The Department also asserts that the vessel replacement does not qualify for the exemption provided by Rule 285(a) – "routine maintenance;" and the Department asserts that it does not qualify for the exemption provided at Rule 285(b) – "Changes in a process or process equipment which do not involve installing, constructing, or reconstructing an emission unit and which do not involve any meaningful change in the quality and nature or any meaningful increase in the quantity of the emission of an air contaminant therefrom." U. S. Steel respectfully disagrees with the Department's assertions as explained below. In summary, no violation occurred as the vessel replacement was not subject to the Rule 201 permit to install requirements. While we are providing supporting information regarding the applicability and appropriateness for both exemptions, only one of the exemptions is necessary for the vessel replacement to be exempt from the Rule 201 permit to install requirement.

Rule 285(a) – "Routine Maintenance" Exemption

> R 336.1285 Permit to install exemptions; miscellaneous.
> ***Rule 285. The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the following:***
> ***a) Routine maintenance, parts replacement, or other repairs that are considered by the department to be minor***, or relocation of process equipment within the same geographical site ***not involving any appreciable change in the quality, nature, quantity, or impact of the emission of an air contaminant therefrom***. Examples of parts replacement or repairs considered by the department to be minor include the following:
> (i) Replacing bags in a baghouse.
> (ii) Replacing wires, plates, rappers, controls, or electric circuitry in an electrostatic precipitator which does not measurably decrease the design efficiency of the unit.
> (iii) Replacement of fans, pumps, or motors which does not alter the operation of a source or performance of air pollution control equipment.
> (iv) Boiler tubes.
> (v) Piping, hoods, and ductwork.
> (vi) Replacement of engines, compressors, or turbines as part of a normal maintenance program.

First, with no explanation, the Department simply asserts that, "[a]n activity that occurs once every 35 years is not routine." U. S. Steel respectfully disagrees with the Department's analysis that simply involves a subjective evaluation of the frequency to determine whether or not something is "routine." In fact, many of the projects listed in 285(a) do not occur "frequently," but are considered routine. For example, many boiler tubes, piping, hoods, ductwork, etc., are replaced at a similar frequency that the vessel replacement occurred. While these projects may not be done on what MDEQ views as a "frequent" basis at any single source, they are *routinely completed* in their various industries just as vessel replacements are completed routinely in steel shops. (U. S. Steel has completed such vessel replacements.) Thus, just as an appendectomy patient may not feel that an appendectomy is "routine," as it would only occur once for that patient, a surgeon that has completed hundreds throughout her career could surely identify the procedure as "routine." U. S. Steel was unable to locate any additional guidance from MDEQ on its scope of the exemption provided in Rule 285(a). However, we strongly believe that the assertions provided in the VN are not supported by a plain reading of the rule. MDEQ simply asserts that the vessel replacement is "not comparable to these examples." We respectfully disagree as some of the items listed in Rule 285(a) are similar in nature and are done on a frequency similar to vessel replacements.

There is a significant amount of information, including U. S. EPA guidance and court opinions, sometimes conflicting, regarding the scope of "routine maintenance" on a Federal level. We are not aware of any MDEQ guidance on the subject, and, therefore, have relied on Federal policy and guidance for clarification. In some instances, the frequency is but one factor to consider. In other instances, the issue of frequency is not even considered. However, because the exemption provided in Rule 285(b) applies, as noted below, we do not believe that a detailed evaluation of these guidance materials regarding what constitutes "routine maintenance" and whether the vessel replacement qualifies as routine maintenance is necessary to determine the scope of the state exemption. The vessel shell replacement is routine because it must be replaced at some point as the characteristics of the metal of the shell change. The frequency is determined on a case-by case basis – as is frequency to replace boiler tubes is determined on a case by case basis. This is normal and common. That being said, based upon a plain reading of the state rule and the examples provided therein, we stand by our previous correspondence that the vessel replacement is routine and minor in that it is done at various intervals at steel shops throughout the country and it does not "involve any appreciable change in the quality, nature, quantity, or impact of the emission of an air contaminant." On the contrary, the vessel replacement is a sound environmental project.

Rule 285(b) – "Changes that do not involve installing, constructing or reconstructing an emission unit" Exemption

Background

Rule 285(b) provides:

> **R 336.1285 Permit to install exemptions; miscellaneous.**
> Rule 285. The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the following:
> (b) Changes in a process or process equipment which do not involve installing, constructing, or reconstructing an emission unit and which do not involve any meaningful change in the quality and nature or any meaningful increase in the quantity of the emission of an air contaminant therefrom.

In its VN, the Department alleges that the exemption is not applicable and asserts that the "BOPF vessel is an emission unit." The Department provides no explanation or substantiation on how it came to the conclusion that the "BOPF vessel" is an "emission unit" and how the exemption is inapplicable. U. S. Steel strongly disagrees with these assertions. To be properly considered, a determination must be made as to whether an "emission unit" was installed, constructed or reconstructed; or whether components of an emission unit were replaced. As noted herein, components of an emissions unit were replaced.

First, to determine the applicability of the exemption, the "emission unit" must be identified. This step must not be simply glossed over, as MDEQ has previously acknowledged that, "[t]here has been a considerable amount of confusion and uncertainty among the regulated community and Air Quality Division staff in determining what constitutes an emission unit."[1] U. S. Steel agrees that the determination of what constitutes an "emission unit" is fact sensitive and must be made on a case by case basis. Second, after the "emission unit" is identified, a

[1] See, AQD-006, Procedure for Determining Emissions Units, February 20, 1996, Reformatted January 29, 2014 (attached).

determination must be made as to whether the change involved "installing, constructing, or reconstructing" that emission unit. The third and final step in determining whether the exemption applies is determining whether the change involves "any meaningful change in the quality and nature or any meaningful increase in the quantity of the emission of air contaminant therefrom."

Step 1: Determining the "Emission Unit"

At Rule 105, the Department's regulations define "emission unit" as:

> (b) "Emission unit" means any part of a stationary source that emits or has the potential to emit an air contaminant. Examples of emission units include the following:
> (i) A fossil fuel-fired, steam-generating unit.
> (ii) A topcoat painting line.
> (iii) A solid waste incinerator.
> (iv) A clinker cooler at a Portland cement plant.
> (v) A process unit at a chemical plant.

In the VN, MDEQ asserts, incorrectly, that, "a *BOPF vessel* [emphasis added] is an emission unit." U. S. Steel has not found any rule, policy or guidance from MDEQ to support this claim, as Rule 105 (above) is ambiguous in this respect and, to be frank, a plain reading of the rule provides no clarification. However because the rule is ambiguous, U. S. Steel reviewed Department policy, permits, and prior determinations to assist in evaluating the definition of "emission unit." U. S. Steel has found several sources that indicate that the BOPF Shop and not an individual BOP vessel is the "emission unit." Each of these sources that clarify "emission unit" as it applies to BOPF Shop is briefly discussed below.

Air Quality Division Policy and Procedure AQD-006 – Procedure for Determining Emission Units (Attached)

MDEQ recognizes that confusion exists over the term "emission unit" as it can be defined differently in various air regulations. MDEQ developed this policy to provide guidance as to what constitutes an emission unit for ROP and permit to install programs.

As you are aware, "emission unit" is often referred to and considered to be synonymous with process, process equipment, process group, emission group, facility, source, plant, building, structure, installation, activity, etc., by various air pollution regulators and permit applicants. In the policy, the Department explains that the "definitions are purposely vague to allow considerable flexibility in determining what constitutes an emission unit." MDEQ explains that the process is needed to determine the appropriate air pollution control strategy for the wide variety of processes that have the potential to emit air contaminants.

In the policy, MDEQ explains that, "[t]he emission unit should be the smallest part of a stationary source which utilizes an air pollution control strategy....maximizes the production flexibility for the source." MDEQ further explains that, "[a]n emission unit may be a single emission point (a piece of equipment or device) *for which there exists an air pollution emission standard*, or *consist of a grouping of emission points that have a common air pollution control device or are functionally related in their operation* [emphasis added.]"

While the applicability of Rule 201 and permit to install requirements may be determined separately from a Federal permit determination as the Department has suggested, the

applicability of the state permit to install requirement depends and refers to Federal definitions in Federal NSPS and NESHAP/MACT rules.[2] MDEQ policy provides that *the emission unit should normally be an emission point when the point source category has been regulated as an "affected facility" by NSPS, NESHAP, PSD, or Michigan rules.*

New Source Performance Standards

MDEQ refers to Appendix A of the policy which lists "[a] basic oxygen process furnace, (40 CFR, Part 60, Subpart N and Na and Rule 331.)" As discussed above, while replacement of BOP vessels in the steel industry may be considered relatively "infrequent" by MDEQ, it is routine in the industry, as U. S. Steel has made prior vessel replacements and received EPA concurrence on what an "affected facility" is pursuant to New Source Performance Standards. EPA has previously determined that a vessel replacement is not "reconstruction." Such determinations include other vessel replacement projects implemented by U. S. Steel. Since MDEQ refers to the Federal guidelines for what constitutes an affected facility which is critical to the reconstruction determination, and EPA has determined that vessel replacement is not reconstruction of an affected facility per NSPS (and NESHAP), it is not clear to U. S. Steel on how the Department has made a different determination. The NSPS regulations for an "affected facility" are much broader than the vessel. Specifically, in 40 CFR 60, Subparts N and Na, the term includes the BOPF furnace (and not just the vessel). This is similar to the MACT/NESHAP definition of "affected source" and how the emission unit is defined in the ROP, as both are explained below.

Renewable Operating Permit (ROP) No. 199600132d

U. S. Steel Great Lakes Works ROP identifies the BOPF shop and combined vessel operations as the "emission unit" (EU2BOF-VESSELS-S1). The Department's treatment of the BOPF shop operations as an emission unit is consistent with the Federal determination of "affected facility." The ROP does not list the Vessel 26 individually as an emission unit. Please see attached excerpts from the ROP.

U. S. Steel also notes that the reference to "FG2BOP-SHOP" in the VN does not support that Vessel 26 is an emission unit as alleged. In the flexible grouping, FG2BOP-SHOP in the ROP where the description in the VN was taken, the "emission units" are identified as EG2BOP-HMT, *EG2BOF-VESSELS*, EG2BOF-CHARGING, EG2BOF-TAPPING, and EG2BOF-FLUX-SYS. Nowhere is an individual BOPF vessel identified as an emission unit. And, as noted above, MDEQ has otherwise determined that *there is one emission unit at U. S. Steel that is controlled by an ESP.* Both BOPF vessels with other equipment that make up the BOPF are controlled by an ESP. This is consistent with how MDEQ has identified the BOPF shop in the ROP.

[2] U. S. Steel notes that the Federal Government has determined that the project did not trigger permitting. It is not clear how MDEQ has made a different determination; as by agreeing that the project did not trigger Federal permitting, the Federal Government has already acknowledged that U. S. Steel did not construct, install, or reconstruct a source regulated by NSPS/NESHAP. U. S. Steel notes that the determination of reconstruction pursuant to the Federal regulations appears to be consistent with those in the State regulations.

National Emissions Standards for Hazardous Air Pollutants/Maximum Achievable Control Technology (NESHAP/MACT)

As noted above, MDEQ's procedure for determining an emission unit requires permit applicants and reviewers to determine an emission unit so that it is an emission point when the point source category has been regulated as an "affected facility" by Federal regulations, including NESHAP/MACT standards.[3] Again, this procedure and its reference to the Federal NESHAP/MACT rules is consistent with U. S. Steel's interpretation that the emission unit includes more than just Vessel 26. At 40 CFR 63.7782, with regards to steel making, EPA defines "affected source" as the "BOPF shop." At 40 CFR 63.7852, EPA defines "BOPF shop" as "the place where steelmaking operations that begin with the transfer of molten iron (hot metal) from the torpedo car and end prior to casting the molten steel, including hot metal transfer, desulfurization, slag skimming, refining in a basic oxygen process furnace, and ladle metallurgy occur." This definition also clarifies that the affected source is more than a BOPF vessel. In addition, in the Iron and Steel NESHAP Background Document, EPA-453/R-01-005, January 2001, EPA explains that, *Each BOPF shop contains at least two BOPF vessels* [emphasis added] that may be operated alternately; in some shops, both vessels may be in use at different stages of the cycle."

March 13, 2015 Letter From Lynn Fiedler, MDEQ to George Czerniak, USEPA Region V, Regarding Supplement to the 2013 Michigan State Implementation Plan (SIP) Submittal of Revisions to Part 3 Rules

The above-referenced correspondence between MDEQ and U. S. EPA is attached for your reference. In the letter, MDEQ explains that, "[b]elow is a table containing what we believe to be all facilities/emission units utilizing an ESP in Michigan and those units subject to Rule 330 prior to rule rescission." In the table, MDEQ identifies that *U. S. Steel has one emission unit with ESPs – namely EU2BOF-VESSELS-S1*. In addition, in the table, the Department identifies Severstal Dearborn LLC (now AK Steel Corporation) as having one emission unit – EUBOFSHOP. Similar to U. S. Steel, AK Steel Corporation's facility in Dearborn is also a two vessel operation according to proposed Renewable Operating Permit (ROP) MI-ROP-A8640-200X, March 2012.[4]

Step 2: Does the change result in installing, constructing or reconstructing an emission unit?

In the VN, the Department, without any explanation or analysis, asserts that, "a BOPF vessel is an emission unit," and, therefore, the exemption from "Rule 285(b) is not applicable as it pertains to changes that do not involve installing or reconstructing an emission unit. A BOPF vessel is an emission unit." As explained above, contrary to the VN, in other communications

[3] In the VN, the Department asserts that, "the BOPF vessel is an emission unit, as defined in the Integrated Iron and Steel Manufacturing Facilities MACT (40 CFR Part 63 Subpart FFFFF)." However, U. S. Steel is unable to find any such reference in the rule, preambles to the final and proposed rule, and the Background Information Document. To the contrary, U. S. EPA defines an affected source as the BOPF Shop which includes much more than the BOPF vessel. .

[4] See also, Integrated Iron and Steel MACT Plan for the Basic Oxygen Furnace, April 15, 2011, provided at http://www.deq.state.mi.us/aps/downloads/ROP/pub_ntce/A8640/A8640%20MACT%20PLAN%20for%20BOF%203-2-12.pdf, that further documents that the emissions unit, EUBOFSHOP, is a two vessel unit.

and in ROPs, the Department has previously determined that the "emission unit" is more than the BOPF vessel - consistent with U. S. Steel's analysis provided herein – which is also consistent with the referenced NSPS and MACT standards. Therefore, a determination must be made as to whether the project entailed "installing, constructing or reconstructing" a BOPF or BOPF Shop. Since the BOPF and BOPF Shop have existed for decades and most of the BOPF and BOPF Shop were not changed – and only portions of equipment were replaced, it is apparent that U. S. Steel did not "install a BOPF or BOPF Shop." The majority of the emission unit was unchanged and was outside of the scope of the vessel replacement project. Because the BOPF and BOPF Shop existed prior to, during, and after the project, U. S. Steel did not install or construct an emission unit.

A determination, then, must be made as to whether or not U. S. Steel "reconstructed" an emission unit; or more precisely, whether U. S. Steel reconstructed a BOPF or BOPF Shop. Michigan DEQ defines "reconstruction" in Rule 118 as:

> Rule 118 - (b) "Reconstruction" means the replacement of components of an existing facility so that the fixed capital cost of the new components is more than 50% of the fixed capital cost that would be required to construct *a comparable entirely new emission unit* [emphasis added] and so that it is technologically and economically feasible to meet the applicable requirement. "Fixed capital cost," as used in this subdivision, means the capital needed to provide all of the depreciable components.

As U. S. Steel has previously provided the Department, by completing the November 2014 Vessel 26 replacement project, U. S. Steel incurred costs of approximately $26 million. To determine if reconstruction occurred, this value must be compared to the costs associated with the construction of the "emissions unit" or BOPF. In 1999, U. S. Steel requested and received a cost estimate of what it would cost to build a BOPF or affected facility. The cost estimate is attached. In 1999, the cost estimate was over $53 million. Even without adjusting for inflation, this is less than 50% of the cost to reconstruct an affected facility. Adjusting for inflation, the cost to reconstruct a BOPF affected facility in 2014 would have been over $78 million.[5] Thus, the replacement costs of components of the existing emission unit (affected facility or emission unit) that are part of the Vessel 26 replacement project are less than 50 percent of the fixed capital costs that would be required to construct a comparable, entirely new emission unit. Thus, U. S. Steel did not install, construct or reconstruct an emission unit.

Step 3: Determining whether the change involves "any meaningful change in the quality and nature or any meaningful increase in the quantity of the emission of air contaminant therefrom."

As noted above, the project did not result in any meaningful change in the quality and nature or any meaningful increase in the quantity of the emission of air contaminant therefrom. Slopping events, to begin with, before the project was implemented, were relatively rare – but did occur. The project was expected to reduce the already rare occurrences.

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[5] The cost adjustment from 1999 dollars to 2014 dollars is based upon ChemE's Plant Cost Index (CEPCI). U. S. Steel notes that the $78+ million dollar estimate is less than what would be expected to build a comparable two vessel unit in 2014. However, since U. S. Steel has the estimate from 1999, it was provided as even that estimate supports that U. S. Steel did not reconstruct an emissions unit. As noted elsewhere, the BOPF shop is the "emissions unit" and at Great Lakes Works, like most BOPF shops, there are two BOP vessels.

Using Figure 3-3 Reconstruction Flowchart provided on page 3-13 of MDEQ's Guidebook, "Permit to Install – Determining Applicability," October 2005 (attached), indicates that vessel replacement did not trigger permitting:

1. Will there be an appreciable change in the quality, nature, quantity, or impact of the emission of air contaminant? As explained above, the replacement of the vessel is not expected to have an appreciable change in the quality, nature, quantity, or impact of the emission of an air contaminant. The project was implemented to reduce slopping events and the emissions that occur from such events. Any changes in emissions would be expected to be decreased, but the overall emission change is not necessarily quantifiable or appreciable.

2. Is the cost of the replacement parts more than 50% of the fixed capital cost of a comparable new emission unit? As explained above, the cost of the project was well below 50% of the fixed capital cost of a comparable new emission unit.

Conclusion

As explained herein, the Vessel 26 replacement was part of a planned routine maintenance activity that did not involve construction, installation or reconstruction of an emissions unit. The exemptions provided in Rule 285(a) and Rule 285(b) exempt the vessel replacement project from the Rule 201 permit to install requirements.[6]

For reasons explained above, no violations occurred. The Department's issuance of the VN was arbitrary and capricious. The issuance of the VN and U. S. Steel's drafting of the response to the VN could have been avoided if the Department was willing to keep the lines of communication with U. S. Steel open. We encourage the Department to reconsider its position on this issue, so that both of our limited resources can be used for more meaningful purposes. We look forward to continue working collaboratively with the Department. We appreciate the Department's review and consideration of this correspondence.

Should you have any questions regarding this correspondence, please contact Alexis Piscitelli at (313) 749-3900.

Respectfully submitted,

David W. Hacker

Attachments

cc via email:

N. Gordon, Esq. (Michigan Attorney General)
L. Fiedler (MDEQ)
M. A. Dolehanty (MDEQ)

[6] None of the Rule 278 "Exclusion[s] from Exemptions" that would preclude the applicability of the Rule 285 exemptions to the project applies.

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