



United States Steel Corporation
Mon Valley Works – Clairton Plant
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Michael S. Rhoads
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Clairton Plant

January 9, 2019

Ms. Jayme Graham
Air Quality Program Manager
Allegheny County Health Department
301 39th Street, Bldg. No. 7
Pittsburgh, PA 15201-1891

Via email

Dear Ms. Graham:

RE: United States Steel Corporation – Mon Valley Works – Clairton Plant
Additional Information Regarding Breakdown Reports #21256, 2157, and 2158
No. 2 Control Room, No. 5 Control Room, and Battery Stacks

United States Steel is following up to our Tuesday, January 8th teleconference with the Allegheny County Health Department (ACHD) with a supplemental report regarding the Mitigation Plan to reduce any potential environmental impact regarding the above-referenced breakdowns.

As we discussed yesterday and as described in our report that we provided to ACHD on Monday, while we immediately implemented mitigation measures that we knew could be done in a safe and environmentally protective manner, we continue to evaluate other potential measures and implement such measures only after it is determined that they can be implemented in a safe and environmentally beneficial manner. As we discussed during yesterday's teleconference, we implemented additional measures yesterday and this correspondence is being provided to you to describe those additional measures. As explained below, on Monday, January 7th, we reconfigured a natural gas supply system to allow us to introduce additional natural gas to the Clairton No. 1 and No. 2 boilers and the No. 1 Boiler and Hot Strip Mill at the Irvin facility to further displace coke oven gas. In addition, yesterday, after careful evaluation of environmental impacts related to prior coking time adjustments, we further extended coking times on Batteries 13-15 and 19-20. We are evaluating these adjustments to ensure that any unintended environmental impacts at the battery stacks are also minimized from these adjustments. Yesterday, we also began a project that, when completed, would allow us to introduce more natural gas to the battery underfire system to further displace coke oven gas from the underfire system. We believe these efforts will further mitigate any potential environmental impacts from the breakdowns.

As we previously reported, on December 24, 2018, at approximately 4:30 AM, U. S. Steel's Clairton plant experienced a significant fire which required the immediate shutdown of the No. 2 Control Room and No. 5 Control Room for the safety of employees and equipment. While the fire was successfully extinguished, as we discussed, the cause of the fire and damage it caused to processes and equipment remains under investigation. The emergency shutdown of the Nos. 2 and 5 control rooms requires the by-pass of coke oven gas to the downriver system. The affected buildings and related infrastructure are being evaluated for structural safety. Once the evaluation

is complete; and any necessary measures employed based upon the evaluation, the buildings can be accessed to determine impacts and damage to the systems; and what actions will be needed to bring the facility back to normal operation.

U. S. Steel is employing significant resources around the clock to investigate the incident. While the investigation is being completed, we have expended and continue to expend substantial resources and costs to employ mitigation efforts to reduce any potential impacts from the incident. We remain committed to employing actions only when such actions can be done in a manner that is safe for our employees, contractors, and public and potential impacts to the environment are minimized. As we discussed, we would be pleased to have the ACHD visit the site to observe the area damaged by the fire and our mitigation efforts.

To date, among other efforts, we have utilized natural gas (displacing coke oven gas) to the extent practicable.

Previous Mitigation Methods Implemented and Reported for SO2 Control:

1. We are currently operating 6 stabilized natural gas jets to offset 39 MMSCFD of coke oven gas equivalent to Clairton underfire system. This is maximum make up with existing installed equipment.
2. We are currently flaring as much coke oven gas as possible, given current system demands at the peach tree and Irvin ground flares – and making this gas up with purchased natural gas.
3. We extended coking times on 13-15, 19-20, and B/C Batteries due to gas quality.
4. On Friday 1/4/2019, we re-configured the Clairton boiler fuel supply – to operate both high pressure boilers on A line supply. A line is mixed gas (natural gas + coke oven gas) from the Mixing Station, prior configuration, one boiler was on A line mixed gas, the other was on B line - 100% coke oven gas. This is the normal practice, in the event of a fuel supply line disruption, so you don't risk tripping both high pressure boilers.

Mitigation Method Implemented on January 7, 2019

1. Reconfiguration of the natural gas supply system to add additional natural gas supply to No. 1 and No. 2 Boilers at the Clairton facility and No. 1 Boiler and the Hot Strip Mill at the Irvin facility. These facilities are now operating on approximately 80% to 90% natural gas (see table 2 for updated fuel supply)

Mitigation Methods Implemented on January 8, 2019

1. Extended coking times on B, C, 13-15, 19, and 20 Batteries (see table1 below).
2. Began hot tap and piping work to prepare for the installation of an additional jet to supply natural gas, which will displace approximately 20 MMCF of coke oven gas, to the underfire system. The underfire gas system supplies all 10 batteries at the Clairton facility. The installation of the jet is estimated to be complete in approximately one to two weeks.

Consideration of Possible Additional Mitigation Steps:

As we discussed, we understand ACHD's expectation that U. S. Steel consider additional mitigation steps in the event data indicate that such measures are warranted.

We are investigating other mitigation steps to be taken including:

1. Continue to evaluate processes and operations to identify ways to minimize environmental impact and ensure battery integrity and stack compliance.

Operating Data Summary

Table 1. Summary of coking times, normal vs. current operations.

Battery	Normal Coking Time (hrs)	Previously Reported Coking Times	Current Coking Times
1	22	22	22
2	22	22	22
3	22	22	22
13	18	21	21.5
14	18	21	21.5
15	18	21	21.5
19	18	22	22.5
20	18	22	22.5
B	18	18.5	20
C	18	18.5	20

Table 2. Summary of fuel percentages, normal vs. current operations.

Emission Units	Normal Operating Fuel Usage				Current Operating Fuel Usage			
	Natural Gas	Coke Oven Gas	Blast Furnace Gas	Flow (MMCFD)	Natural Gas	Coke Oven Gas	Blast Furnace Gas	Flow (MMCFD)
Clairton Underfire Gas		100%	--	90	40%	60%	--	90
Clairton No. 1 Boiler	13%	87%	--	25	80-90%	10-20%	--	25
Clairton No. 2 Boiler		100%	--	11	80-90%	10-20%	--	11
ET Boilers		4%	96%	270	2-3%	2-3%	90-95%	270
ET Blast Furnaces	50%	50%		25	100%	--		25
ET No. 1 Stove		1-2%	98-100%	38	1%	1%	98-100%	38
ET No. 3 Stove		1-2%	98-100%	35	1%	1%	98-100%	35
Irvin No. 1 Boiler	5-10%	90-95%	--	1.3	90-95%	5-10%	--	1.3
Irvin Hot Strip Mill	25%	75%	--	21	40-50%	50-60%	--	21
Irvin No. 2 Boiler	5-10%	90-95%	--	1.4	90-95%	5-10%	--	1.4
Irvin No. 3 Boiler	5-10%	90-95%	--	0.5	90-95%	5-10%	--	0.5
Irvin No. 4 Boiler	5-10%	90-95%	--	0.5	90-95%	5-10%	--	0.5
Irvin HPH Annealing	5-10%	90-95%	--	1	90-95%	5-10%	--	1
Irvin OCA Annealing	5-10%	90-95%	--	1	90-95%	5-10%	--	1
Irvin Continuous Annealing	5-10%	90-95%	--	0.5	90-95%	5-10%	--	0.5
Irvin No. 1 Galvanize	100%		--	0.25	100%		--	0.25
Irvin No. 2 Galvanize	100%		--	0.14	100%		--	0.14

While we are expediting our efforts to bring the facility back to normal operation, we remain committed to employing actions only when such actions can be done in a manner that is safe for our employees, contractors, and public; and potential impacts to the environment are minimized.

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Also, as has been discussed previously, we remain committed in openly communicating with the ACHD regarding this matter; and we welcome ACHD to visit the Clairton plant to observe the area impacted by the fire and mitigation efforts to date. Please contact Mike Dzurinko at (412) 233-1467 to schedule a meeting. In the interim, if you have any questions regarding this correspondence, please contact Mike Dzurinko or me.

Sincerely,



Michael S. Rhoads

cc: Jim Kelly (ACHD)
Jason Willis, Esq. (ACHD)
Mike Dzurinko (USS)
Chip Babst, Esq. (Babst Calland)
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