



Shell Chemical Appalachia LLC
300 Frankfort Rd
Monaca, PA 15061

November 30, 2022

Mark Gorog P.E., Regional Manager Air Quality
Program Pennsylvania Department of Environmental
Protection Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222

**RE: PA-04-00740C Source ID 034 Ethane Cracking Furnace #4 NOx Emissions
Malfunction Report, October 31, 2022**

Dear Mr. Gorog,

Shell Chemical Appalachia LLC (“Shell”) is submitting this incident report to the Pennsylvania Department of Environmental Protection (PADEP).

- **Name and location of the facility**

Shell Polymers Monaca
300 Frankfort Road, Monaca PA, 15061

- **Nature and cause of the incident**

On October 31 at ~4:47AM Operations received a sudden low temperature reading and alarm on ammonia dilution air temperature. Low temperature automatically closed the ammonia flow valve per design of the control system. Duration of the low temperature reading was approximately 5 minutes, however the ammonia system needed to be restored. Operations attempted to troubleshoot and reestablish ammonia flow for NOx control. Ammonia injection was reestablished at ~9:41AM however this resulted in a second sudden temperature drop and trip of the ammonia system. This combination of events resulted in loss of ammonia injection and increasing NOx emissions (above 6.2 lb/hr) for Furnace #4 which was operating in Hot Steam Standby mode.

Operations restored and continued to stabilize ammonia injection at ~11:00AM. Corrective action includes the slow controlled introduction of ammonia to avoid sudden temperature drops. Corrective action also includes updates to ammonia control system alarms and development and distribution of additional Operator guidance for controlling NOx emissions in different operating modes.

- **Time when the incident was first observed, and duration of excess emissions**

October 31, 2022 at ~ 4:47 AM 5 hours (Furnace #4)

- **Estimated rate of excess emissions^{a,b}**

Source ID	Name	NOx (lbs)	NOx (tons)
034	Ethane Cracking Furnace #4	139	0.07

a Emissions in excess of 6.2 lb/hr applicable limit

b As determined by uncertified CEMS analyzer data

If you have any questions regarding this matter, please contact me at (724) 709-2467 or kimberly.kaal@shell.com.

Sincerely,

Kimberly Kaal

Kimberly Kaal
Environmental Manager, Attorney-in-Fact

CC:
Scott Beaudway, Air Quality Specialist
Anna Hensel, District Supervisor