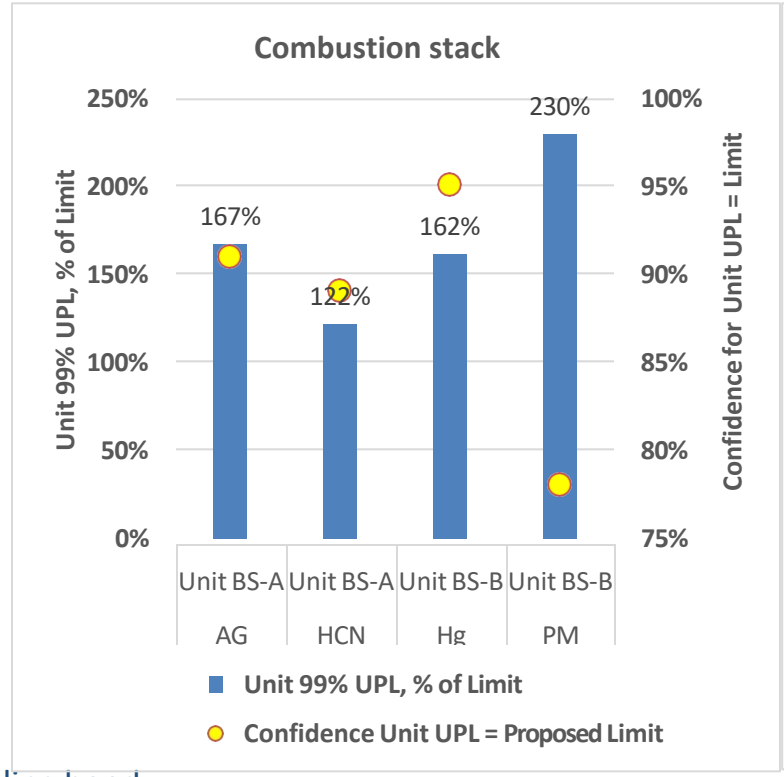
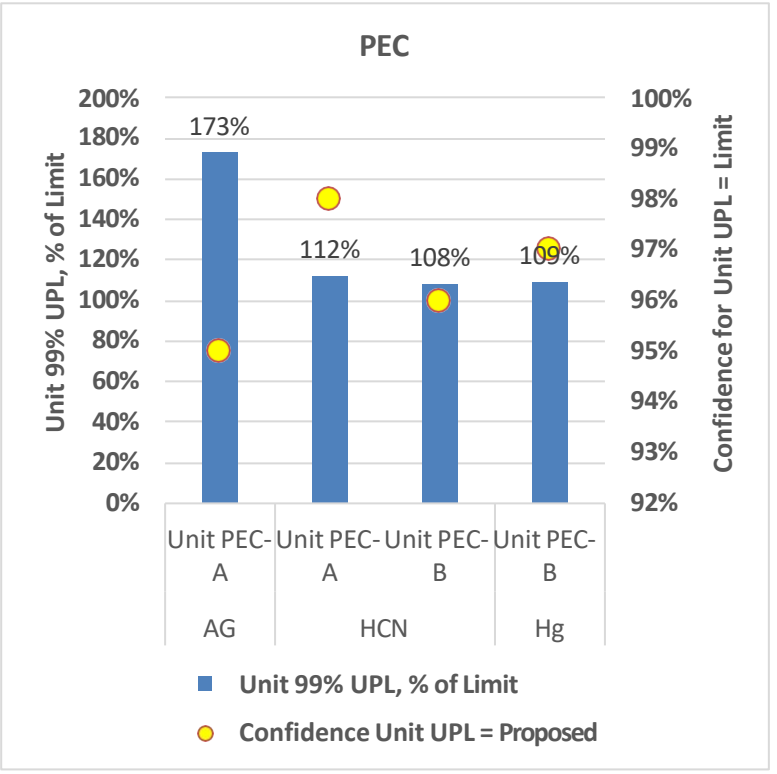
Compliance Schedule Concerns for Combustion Stacks and Pushing Emissions

- COETF member companies have very little test data regarding the proposed standards for combustion stacks (AGs, HCN, Hg, and PM) and pushing emission control devices (PECs) (AGs, HCN, Hg, and PAH). Only 25% of combustion stacks and PECs were tested as part of the Section 114 ICRs.
- Available data exhibit substantial variability and show that the proposed standards are not consistently achievable for all pollutants without additional controls, operational changes, or both. The figures below show the 99% UPL for individual units (for units with 99% UPL exceeding the proposed standards). The confidence level lower than 99% at which the unit UPL equals the proposed standards also is shown. This analysis shows that additional controls and/or operational changes would be needed for these pollutants/sources:
  - Combustion stacks –
    - PM – New baghouse + fans (depending on PM size fraction)
    - Acid Gases – Dry sorbent injection and new baghouse + fans
    - HCN – No practical controls
    - Hg – Activated carbon injection and new baghouse + fans
  - Pushing –
    - Hg – Activated carbon injection + existing baghouse
    - Acid Gases – Dry sorbent injection + existing baghouse
    - HCN – No practical controls
    - Replacement of existing mobile traveling controls with new fixed controls (baghouse or scrubber) and traveling hood





Compliance Schedule Concerns for Combustion Stacks and Pushing Emissions (cont.)

- Minimum 3-year compliance schedule is needed because:
  - Controls for these pollutants/sources have not been demonstrated for the coke byproduct recovery industry, either in the US or internationally.
  - Controlling multiple pollutants and retrofitting controls into existing operations add complexity and time due to interactions of the requirements for control, including pollutant interactions, flow rates, chemistry, and temperatures.
  - There is a general lack of confidence in any feasible control technologies for HCN. Vendors contacted thus far indicate that any potential solution for control of HCN in combustion stack or pushing emissions is not technically feasible.
  - Permitting – Any additional controls would require permitting from the local permitting agency; permitting would take 6 to 12 months after engineering is completed.
  - Extensive engineering and physical modifications will be needed at each plant:
    - Battery under-firing systems are naturally drafted, with the underfire gas stream predominantly underground. Any added equipment such as heat exchangers, sorbent injection systems, etc., will add static pressure loss, necessitating installation of an induced draft fan. The impacts of added fans and equipment will need to be studied to ensure adequate heating of the batteries, as well as enough physical space to install additional equipment, which for at least one facility is not feasible. All this will pose crucial obstacles and engineering challenges for any new add-on equipment, which could include construction of a new combustion stack.
    - Changes to the under-firing system will necessitate the planning and scheduling of battery outages, during which purchased natural gas will be needed to keep the battery hot; all coke production would cease; and battery refractory brick and other equipment could suffer unanticipated damage, which will take more time and expense to address.
    - Engineering of equipment to condition flue gas streams will be needed.
    - Limited available physical space within coke oven battery areas will necessitate vertical construction, adding complexity and time to all related construction, and may be infeasible altogether.
    - Adding controls on mobile pushing control devices will involve unique engineering challenges compared to stationary sources.

Compliance Schedule Concerns for Fenceline Monitoring

- Minimum 3-year compliance schedule is needed because:
  - As the COETF has previously commented to EPA, the proposed fenceline monitoring action level is too low and not based on modeling of allowable emissions at the true facility fenceline.
  - Each plant will need to add new emission controls and new leak detection/repair programs to comply with the proposed action level. This may necessitate engineering of suitable capture and control systems at multiple locations. Identifying these sources and engineering of controls for them will take more time (beyond the 1 year currently proposed), and may necessitate permitting of emission control projects, delaying installation of controls by 6 to 12 months.
  - Additional time (beyond 1 year) will be needed to develop facility-specific monitoring plans; and, to engineer and install added controls before compliance monitoring is required under the rule:
    - Identifying specific source contributors to monitored concentrations will pose significant challenges at each coke byproduct recovery plant due to the closely located sources within the plant (e.g., coke batteries, byproduct recovery plant, storage tanks, marine barges, etc.).
    - Additional time will be needed to refine source identification and identify sources, unlike more widely spaced sources common in the petroleum refinery sector. “Root cause” investigations will add significant time and complexity, considering the many miles of piping and thousands of valves and flanges at each plant.
    - Projects to further reduce benzene emissions could include redesign, procurement, fabrication, and installation or modification of process vessels; installation of new tar decanters; installation of NESHAP byproduct gas blanketing and vapor collection systems; replacing sections of coke oven gas piping; and redesign of tar and light oil loadout systems to reduce allowable fugitive emissions or leak rates.

Compliance Schedule Concerns for Battery Leak Limits

- Minimum 3-year compliance schedule is needed because:
  - As the COETF has previously commented to EPA, the new, lower leak rates that EPA has proposed are based on "recent" annual average leak rates without considering process, raw material and meteorological variation or considering the 30-day rolling average form of the standard. Facilities cannot consistently meet the proposed revised leak rates for doors/lids/offtakes; therefore, additional investments to continuously comply would be required.
  - Doors – Research and trials on ways to reduce door leaks would be required to comply with the proposed lower door leak limits. This may include replacing door machines; rebuilding or replacing oven doors; and redesigning door-jamb cleaning mechanisms.
    - Lead time to engineer, procure, fabricate, deliver, and install 2 new door machines takes 5-6 years to complete and would cost approximately $20 million. These costs include considerable effort to fabricate, transport, and install replacement machines.
    - Lead time to rebuild or replace oven doors on a typical battery with 82 doors is up to 3 years to engineer, procure, fabricate, and install.
  - Offtakes – Research and trials on ways to reduce offtake leaks would be required to comply with the proposed lower offtake limit. This may include replacing or redesigning offtake components.
    - Lead time to engineer, procure, fabricate, and install replacement offtake components on a typical battery takes at least 2-3 years to complete.
  - Lids – Research and trials on ways to reduce leaks from lids would be required to comply with the proposed lower limit. This may include redesigning or replacing lids; and use of different sealing materials.