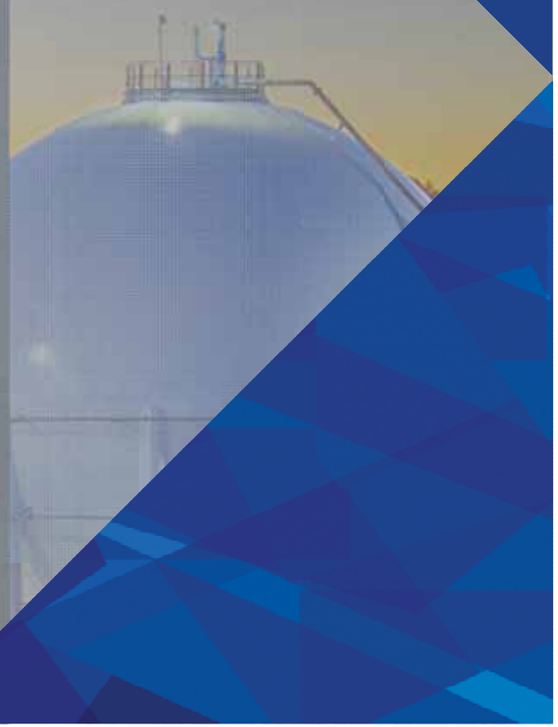
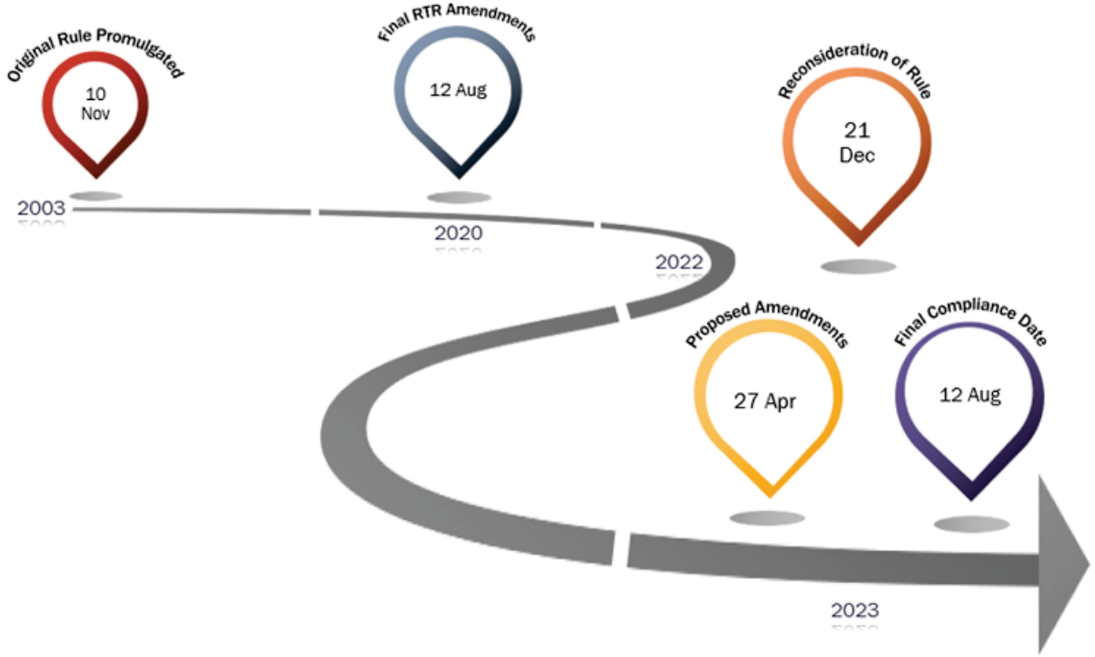
MON RTR: Lessons Learned & Looking Ahead to HON RTR

Ashton Singletary, LyondellBasell

Jill Martin, Alliance Technical Group





MON History

- MON was originally promulgated in November 2003.
- In August 2020, the provisions of MON were broadly expanded through the MON RTR:
  - EPA is required to perform a residual risk review within 8 years of establishing the standard and a Technology review every 8 years
  - August 12, 2020 – Final Rule
  - Reconsideration of Final Rule – December 21, 2022
    - Regarding the risk value EPA used in assessing cancer risk (EPA's IRIS value vs. TCEQ risk value)
    - Resulted in no change (EPA's IRIS value maintained)
  - April 27, 2023 – Proposed Amendments (comments closed June 12, 2023)
    - Miscellaneous clarifications
    - Removal of the definition of "force majeure"

What's Coming Ahead?

Amendment	MACT CC	EMACT	MON	HON
New Standards for Equipment "In Ethylene Oxide Service"	---	---	X	X
Removal of SSM Exemption	X	X	X	X
Enhanced Flare Monitoring Requirements	X	X	X	X
Atmospheric PRD Release Management Provisions	X	X	X	X
Maintenance Venting Work Practice Standards	X	X	X	X
Heat Exchange Systems Updates	X	X	X	X
Storage Tank Degassing Requirements	---	X	X	X
Fenceline Monitoring Requirements	X	---	---	X

MON Compliance Dates

- Removal of alternative leak definition for pumps in Light Liquid service

- Enhanced control device provisions for process vents, surge control vessels, bottoms receivers, and storage tanks in ethylene oxide service
- Storage tank provisions amendments for storage tanks in ethylene oxide service
- Enhanced equipment leak provisions for equipment in ethylene oxide service

- General requirements amendments, including removal of the startup, shutdown, and malfunction (SSM) exemption
- Enhanced flare control device provisions for flares that control ethylene oxide emissions and flares used to control emissions from MCPUs that produce olefins or polyolefins
- New maintenance venting provisions
- New storage tank degassing provisions
- Enhanced pressure release requirements and management provisions
- Wastewater streams and liquid streams in open systems amendments
- Heat exchanger monitoring requirements amendments

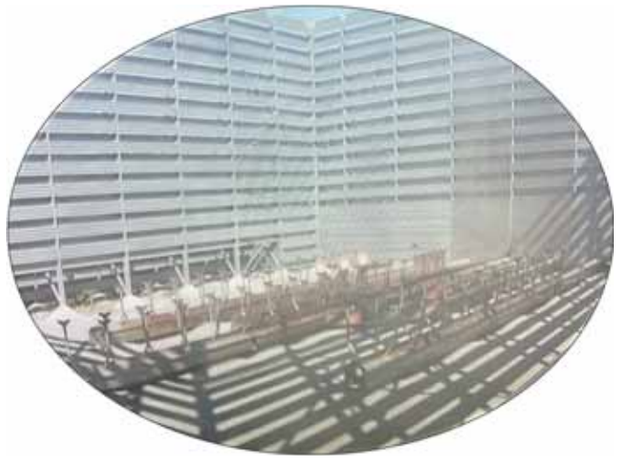
Implementation Strategies

Conduct a comprehensive gap analysis to determine:

- What type (if any) of new equipment will be needed?
- Will capital authorization and funding need to be obtained?
- What is the lead time for purchasing any new equipment needed?
- What are the engineering, construction, and installation timeframes associated with any new equipment?
- What administrative (i.e., training, recordkeeping, etc.) changes are needed?

Lessons Learned - Flares

- Lead times on new analyzers were longer than expected, which shortened time available for troubleshooting.
- For existing analyzers that meet all regulatory specifications:
  - Is the unit of measure output correct?
  - Should specific gravity measurement requirements be addressed?
- Get your Analyzer/Instrumentation and Controls personnel involved as early as possible!



What's Coming Ahead?

Amendment	MACT CC	EMACT	MON	HON
Enhanced Flare Monitoring Requirements	X	X	X	X

- The enhanced monitoring provisions included in the proposed HON RTR amendments are similar to those promulgated for MON.
- Inclusion of a new Ethylene Oxide limit: the maximum amount of Ethylene Oxide that can be sent to all flares combined from an affected source in 20 tons in any consecutive 12-month period.

Lessons Learned – Pressure Relief Devices

- Understand the time associated with identifying subject PRDs:
  - Full facility P&ID review necessary in some cases.
  - Data collection needs for stream speciations
    - For example, heat and material balances do not always have the resolution needed for HAP content determinations.
- There are not just administrative changes associated with PRD amendments (i.e., funding may be needed for installation of a continuous monitoring system or for tie-ins to the CVS).
- There are specific recordkeeping requirements associated with PRDs vented to a flare.
- Be aware of re-spanning needs if leveraging existing upstream pressure transmitters.

What's Coming Ahead?

Amendment	MACT CC	EMACT	MON	HON
Atmospheric PRD Release Management Provisions	X	X	X	X

- The proposed work practice standards are similar to those found in MON.
- Any release of a PRD in Ethylene Oxide service is a violation of the work practice standards.

Lessons Learned – Process Vents

- If there is no equipment in Ethylene Oxide service, your pain point is the new maintenance venting requirements.
  - Generally, no funding is needed to implement a maintenance vent program; however, implementation can be very tedious and time consuming.
  - There are multiple stakeholders to consider when implementing a program – Environmental, Operations, and Maintenance.
  - Engage stakeholders as early as feasible to understand which work practice standard option disrupts current processes as minimally as possible.
  - However…the new work practice standards drive a culture change for startup, shutdown, and maintenance activities.

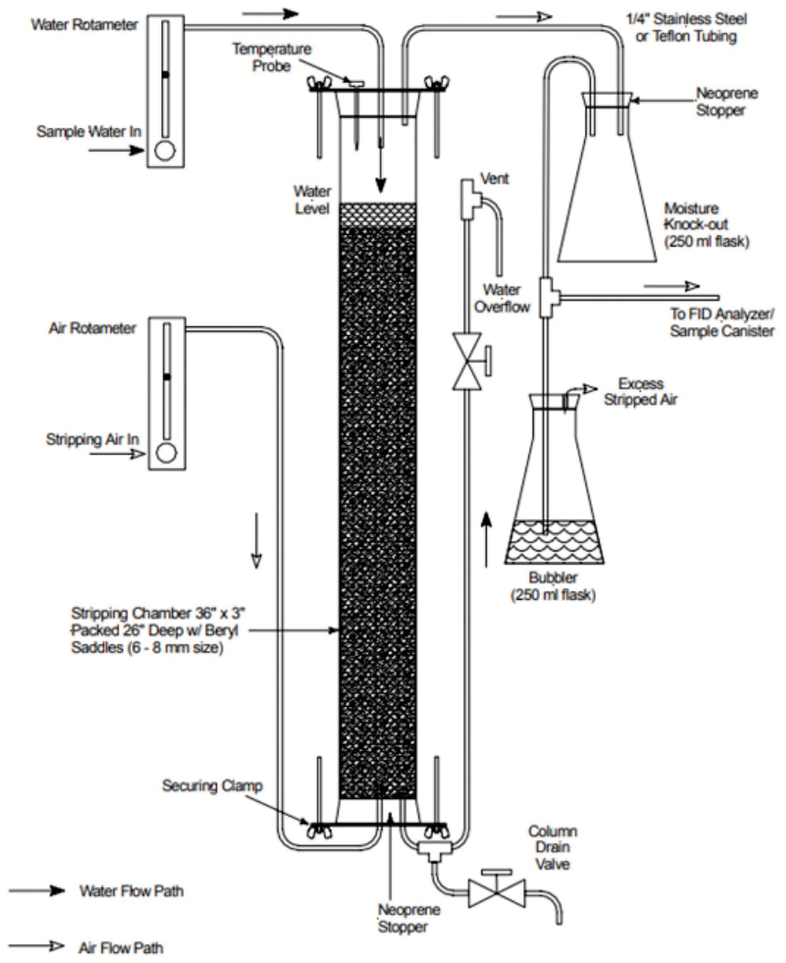
What's Coming Ahead?

Amendment	MACT CC	EMACT	MON	HON
Maintenance Venting Work Practice Standards	X	X	X	X

- Maintenance Venting:
  - The proposed work practice standards are similar to those found in MON.
  - Owners and operators may not release more than 1.0 tons of Ethylene Oxide from all maintenance vents combined per any consecutive 12-month period.
- Process Vents:
  - Removal of TRE.
  - Threshold for Group 1 Process Vents is proposed to be 1.0 pound per hour of total OHAP.

Lesson Learned – Heat Exchange Systems Monitoring

- It was found that existing sample taps for individual heat exchangers or CWT risers do not generally meet the requirements of the Modified El Paso Method. Plan ahead!
- Determine who will be conducting the monitoring (facility personnel, LDAR contractor, or other contractor) and provide any necessary training.

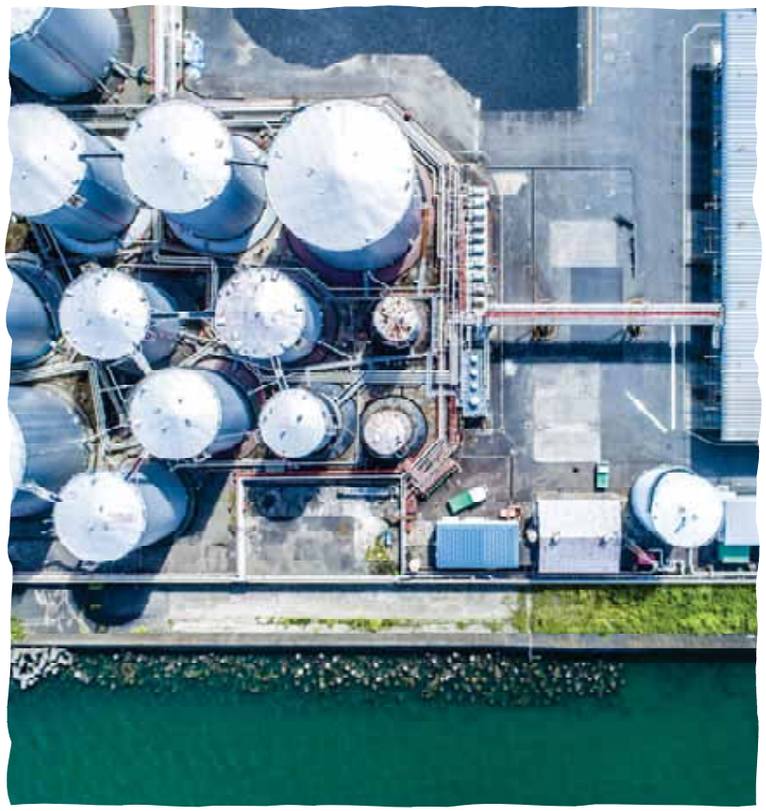


What's Coming Ahead?

Amendment	MACT CC	EMACT	MON	HON
Heat Exchange Systems Updates	X	X	X	X

- As seen in other RTRs, EPA proposed that monitoring is to be conducted using the Modified El Paso Method.
- For HX Systems in Ethylene Oxide service, the proposed provisions require:
  - Weekly monitoring
  - A 15-day repair timeline
  - No allowance for delay of repair

Lessons Learned – Storage Tank Amendments



- New storage tank degassing provisions
  - Is a temporary control device needed?
  - New consideration for turnaround planning.
- Requirements are similar to the maintenance venting provisions.

What's Coming Ahead?

Amendment	MACT CC	EMACT	MON	HON
Storage Tank Degassing Requirements	---	X	X	X

- Degassing provisions proposed mimic those found in MON.

- Other pertinent notes:
  - Proposed updates to Group 1 thresholds (capacity and vapor pressure).
  - Proposed updates for IFR controls.

What's Coming Ahead?

Amendment	MACT CC	EMACT	MON	HON
New Standards for Equipment "In Ethylene Oxide Service"	---	---	X	X
Fenceline Monitoring Requirements	X	---	---	X

- In Ethylene Oxide Service:
  - Applies to equipment leaks, process vents, storage tanks AND heat exchange systems and wastewater systems.
- Fenceline Monitoring Requirements:
  - 6 key chemicals
  - Threshold is "uses, stores, or emits"
  - Introduction of Method 327
- Miscellaneous:
  - New D/F limit for Group 1 halogenated streams

QUESTIONS?