

Reactor Alignment Meeting Discussion Points (RSP-1121-020-FORM02)

Tech Service

1. Explain the hazards of handling spent media to all personnel.
2. Have SDS's been provided to Catalyst Contractors?
3. Has the type of catalyst been changed to a different type since the last time this catalyst contractor worked in this reactor? If so, is there any impact to the catalyst contractor due to this different type of catalyst?

Operations

4. Has the Shutdown/Decontamination procedure been provided to the catalyst contractor?

Coordinator

5. Has the catalyst contractor walked down the placement of all equipment including the connection points for the Nitrogen Truck and Back Pressure manifold with Maintenance?

Environmental

6. Disposal of contaminated PPE, catalyst and other material?
7. Fuel containers must have a secondary containment.

Safety

8. Nitrogen Contractor will need to contact the Catalyst Contractor and Operations prior to adjusting their equipment if a loss or reduction in nitrogen flow will result. The N2 Contractor have radio contact during this process.
9. All workers must be evacuated from inside the vessel if percent of oxygen, percent of LEL, or if inert atmosphere ambient temperatures change such that they fall outside of safe working conditions. The vessel will also be evacuated if other hazardous conditions occur such as any loss of the primary or secondary nitrogen supply or loss of communication.

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| Oxygen \leq 4% (\leq 2% for initial entry) | Carbon Monoxide < 10ppm |
| LEL < 20% (CW) / LEL < 10% (HW) | Temperature \leq 100° F (+/- 5°F within 15 min) |

10. Inert Confined Space Entrants must not be solely supported by standing on the catalyst bed. Inert Entrants must be supported by a ladder stand or a taut lifeline attached to their harness D-ring.
11. What type of ladders will be used (hard or cable ladders)?
12. What % of LEL will be required to dump catalyst per the contractor?
13. The Catalyst Contractor must perform atmospheric monitoring in the reactor using monitors compatible with inert atmospheres. The monitor must be capable of measuring for LEL, O2, CO. The Catalyst Contractor must also monitor the internal ambient atmospheric temperature.
14. Reactor Posters (diagram showing internal configuration of reactor vessel)
15. Rescue equipment must be on site, set up and serviceable. Will the tripod or A-frame fit over the reactor manway?
16. Who will provide the lighting? Will it remain in the vessel for everyone else to use?

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17. Explain the safety meeting schedule.
18. Explain audits, near misses, BBS and other safety programs.
19. A Back-Pressure Test (Grubb's Test) is required before reactor entry. Discuss the following:
 - The Catalyst Contractor must provide equipment for a Back-Pressure Test.
 - Are we checking the back pressure with the nitrogen truck or with plant nitrogen?
 - If we are using the Nitrogen Truck, ensure there is a plan for relieving pressure when the back-pressure manifold is blocked in to avoid setting off the PSV
 - Ensure backup pressure gauges are on-site
 - Does the Contractor have the proper fittings for the Back Pressure (when needing to reduce to a smaller size, the fitting needs to be stainless steel) and/or who is providing?
20. Catalyst Hopper must not block egress / rescue from the reactor. Fall Protection is required while accessing the hopper (e.g., small top decks going above the guardrail to access the hopper).
21. The effluent area delineated at the top deck of the reactor will require 100% fresh air while purging with nitrogen.
22. The duct through which removed catalyst is vacuumed into the hopper must be confirmed to be in good condition (no significant cracks or holes that could allow oxygen to enter the system). Also ensure an adequate nitrogen supply is provided to the duct and hopper holding the spent catalyst.
23. The Catalyst Contractor must vacuum up as much catalyst dust as possible and not sweep/shovel.
24. All equipment must be inspected and tested as required.
25. A pre-entry checklist will be complete prior to each reactor entry.

Industrial Hygiene

26. The Catalyst Contractor will submit a written housekeeping plan to MPC Personnel.
27. Contractor must have adequate dust capture during the flow-bin dumping of catalyst.
28. Contractor must be mindful to make sure to vacuum off the flow-bins before they leave the arsenic regulated area. What type of equipment will be used to vacuum the catalyst? All catalyst dust must be contained.
29. Has the Location of monitor "hooch" with supplied power been determined?
30. Sampling Plan.
31. The Catalyst Contractor must have a decontamination trailer / sink located on-site. Where will it be located? MPC Personnel to verify once it has arrived onsite.

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Meeting Notes / Deliverables:

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Date: _____

Units: _____

MPC Safety Representative

Catalyst Contractor Representative

MPC Industrial Hygiene Representative

Catalyst Contractor Representative

MPC Environmental Representative

Nitrogen Truck Company Representative

MPC Tech Service Engineer

Nitrogen Truck Company Representative

MPC Tech Service Engineer

MPC Maintenance Coordinator

MPC Maintenance Coordinator

MPC Operations Representative

MPC Operations Representative