

Marathon Petroleum Company LP			
Demolition Procedure	Document No.: RSW-SAF-046-DT	Approval Date: 3-25-20	Page 1 of 8
	Revision No.: 9	Next Revision Date: 03-25-25	
	Document Custodian: Environmental, Safety and Security		

1.0 PURPOSE

- 1.1 The purpose of this procedure is to prevent the inadvertent disruption of operations and potential safety hazards associated with the demolition of Michigan Refining Division (MRD) equipment and/or structures. This procedure identifies the responsibilities, coordination, and construction activities associated with safe demolition.

2.0 SCOPE

- 2.1 This procedure applies to all Contractors, Subcontractors, and Employees working on MRD owned, controlled, or permitted locations, as well as work performed under a contract to Marathon Petroleum Company, LP (MPC) MRD while conducting demolition.

3.0 DEFINITIONS

- 3.1 Demolition – All removal of process equipment, buildings, instrumentation, piping and electrical equipment. Excluded items from demolition is removal and immediate replacement of equipment. Equipment that is removed and immediately replaced, such as a valve, piping spool or instrumentation, would be excluded from the definition of demolition.

4.0 PROCEDURE

4.1 Demolition Requirements

- 4.1.1 Engineering will develop work packages detailing the demolition scope of work. Minimum work identification will include marked up P&ID's, design drawings, and a written scope of work. Salvage items will be specified.
- 4.1.1.1 Revisions to the demolition scope will be treated as a design change with appropriate documentation and approvals.
- 4.1.1.1.1 As-built drawings will be provided to Engineering by the Construction Coordinator for updating records.
- 4.1.2 A pre-construction field review by project stakeholders, including but not limited to, Engineering Representative, Area Operations Supervisor, Tech Service, Construction Coordinator or Maintenance Foreman and Safety Representative will be performed to examine the demolition scope and determine the planning requirements for executing the work.
- 4.1.2.1 Access, egress, and obstructions will be reviewed during the field review to verify the accuracy and completeness of design information and to determine if equipment can be safely demolished.
- 4.1.2.2 A logistics and execution plan will be discussed during the field review with the Owning Department. Disruption to operations, road closures, sequence of work, critical scheduling, ability to

isolate or shut down operating systems, and environmental impact will be considered.

- 4.1.2.3 Energy isolation for equipment being removed will be reviewed during the pre-construction field review and Operations will develop a Master Isolation list prior to the Pre-Demolition Site Meeting.
- 4.1.2.4 Hazardous substances such as lead, asbestos, silica, PCB's, mercury, radiation, metals fumes, and pyrophoric materials will be identified during the field review. Abatement and disposal plans will be identified by the Maintenance Foreman or Contractor Coordinator along with Safety, and may include the following:
 - 4.1.2.4.1 Hazardous materials shall be removed, or otherwise contained, prior to the start of demolition.
 - 4.1.2.4.2 The potential for equipment to contain frozen, plugged, or pocketed process materials shall be considered.
 - 4.1.2.4.3 The potential for employee / contractor exposure to chemicals, lead, hexavalent chromium, asbestos, respirable crystalline silica, and other toxic materials must be considered.
- 4.1.3 Requirements for permitting, inspection, or approvals by local, state, or outside authorities will be defined. A "Notification of Intent to Renovate/Demolish" will be submitted to the MDEQ for the removal of asbestos, buildings, or structures.
 - 4.1.3.1 Consult with the Environmental Department for appropriate sampling methods and disposal requirements.
- 4.1.4 A Management of Change (MOC) will be generated to cover the demolition work. Like equipment within the same Unit/Complex can be grouped in one MOC.
- 4.1.5 Existing procedures and work practices will be evaluated for adequacy for the demolition scope of work.
 - 4.1.5.1 Arc Flash requirements shall be reviewed for energized electrical work.
- 4.1.6 A Master Isolation list will be developed by the Owning Department.
- 4.1.7 A pre-demolition site meeting with Operations / Product Control, Engineering Representative and the Construction Coordinator or Maintenance Foreman will review the issued for construction (IFC) package and all proposed piping cuts, electrical disconnections and process disconnections.
 - 4.1.7.1 [RSW-SAF-046-Form1-DT Demolition Check List](#) shall be completed during the pre-construction site meeting. Section A, B and C of Form01 will be completed during the pre-demolition site

meeting and must include equipment numbers and identify piping, equipment and electrical raceways to be removed.

4.1.7.1.1 Piping and equipment will be identified via pink spray paint. Electrical equipment shall be tagged to be air gapped or disconnected. Operations Representative and Construction Coordinator or Maintenance Foreman must be present for spray painting and tagging.

4.1.7.2 After completion of section A, B and C, Form01 will be given to the Servicing Group performing the air gapping of the piping, equipment or electrical raceway.

4.1.7.2.1 Sections D and E will be completed during the Joint Jobsite Visit with the Owing Department. After completion of the work scope Form01 will be returned to the Construction Coordinator or Maintenance Foreman.

4.1.7.2.2 If electrical equipment is part of the demolition scope, Section F and G will be completed. This section involves painting the electrical equipment pink.

4.1.7.3 After completion of air gapping the Service Group performing the demolition will complete Sections H and I during a Joint Jobsite Visit with the Owing Department.

Note: If the air gapping and demolition will be performed by the same Servicing Group, section D, E, H and I can be completed at the same time.

4.1.7.4 Separate forms will need to be completed for large demolition projects involving numerous pieces of equipment.

4.1.8 If changes occur to the demolition IFC packages/scope of work after the demolition begins, refer back and complete section 4.1.7.

4.1.9 .

4.1.10 Any demolition activities that have the potential of respirable crystalline silica exposure will need to have a Written Exposure Control Plan for Silica. Refer to [RSW-SAF-090-DT Silica Handling Plan](#).

4.1.11 Contractor Company performing demolition work will need to submit a Site Specific Safety Plan (SSSP), refer to RSW-SAF-060-Form05-DT, [Projects and TAR Site Specific Safety Plan Template](#). A SSSP will emphasize how the contractor will adequately protect the contract employees from hazards for a specific job from start to finish. SSSP's shall be submitted via a hard copy or an electronic copy to the contractor's MPC Coordinator and the MRD Safety Group.

4.2 Above Ground Piping Demolition

- 4.2.1 Isolation will be provided as close to as possible to active process equipment. Dead legs will be eliminated wherever possible or added to the master dead leg list and winterized as required. Operations and Inspection must be notified of remaining dead legs. Shutdown work orders will be generated by area Inspector to remove dead legs at the next unit outage.
- 4.2.2 Piping to be removed will be properly cleared of all process media.
- 4.2.3 Positive isolation of steam and electric tracing will be verified.
- 4.2.4 All proposed piping cuts or disconnections and demolition scope will be reviewed by Operations/Product Control, Engineering Representative, Tech Service and the Maintenance Foreman or Construction Coordinator during the pre-demolition site meeting. RSW-SAF-046-Form01-DT Demolition Check List shall be completed.
- 4.2.5 All cuts or disconnections will be performed at locations agreed upon and identified via pink spray paint during the pre-demolition site meeting.
- 4.2.5.1 Operations shall perform a gas check on the piping via bleeder or other means nearest to the cut points. If no means to verify the piping is cleared of process product, cold cutting methods shall be used. Using a non-sparking drill to create a 1/4" hole in the line for isolation verification can be used as an alternative method to cold cutting. The drill hole location can be determined by Operations based on hazard (liquid vs. vapor). Operations shall immediately test at the hole for LEL and toxic levels.
- 4.2.6 Insulation at the cut point must be removed to safely perform the air gap of the piping. This will include the removal of enough insulation to attach rigging equipment for safe lifting of piping or equipment.
- NOTE:** All insulation containing asbestos must be abated by a licensed abatement contractor. For easier abatement of asbestos containing insulation, the insulation may be abated at the cut points, encapsulated on the ends, lowered to the ground and abatement completed at grade level. Refer to [RSW-SAF-017-DT Asbestos Handling and Health Plan](#) for more information.
- 4.2.7 VOC monitoring tags, steam trap tags, and blind tags (red, gold, blue) will be salvaged and returned to the Environmental and Operations Departments.
- 4.2.8 Abandoned lines shall be air gapped from other lines and equipment and the ends sealed with caps or plates.
- 4.2.9 All abandoned equipment, piping and electrical raceways shall be supported.
- 4.3 Underground Piping Demolition
- 4.3.1 Refer to 4.2.1-4.2.7 above.

- 4.3.2 Abandoned piping and sewers shall be cleared, flushed and air gapped from other lines and equipment. They shall be filled to prevent future hazards and the ends sealed with caps or plates.
- 4.3.3 A thorough search of Refinery underground documentation will be performed, and findings incorporated into the demolition work package.
- 4.3.4 A Pre-Analysis Excavation Checklist shall be completed. Refer to [RSW-SAF-021-DT Excavation and Ground Penetration Procedure](#).
- 4.3.5 Excavations will be performed using exploratory methods consistent with the quality of documentation and associated risk.
- 4.3.6 When making cuts in areas that cannot be effectively gas checked (i.e. low points without bleeders, vents, flanges, etc. in close proximity);
 - 4.3.6.1 Completely clean the outside of a three foot section of pipe of all scale.
 - 4.3.6.2 Provide a pipe clamp of suitable design and loosely clamp on pipe adjacent to area to be pilot drilled.
 - 4.3.6.3 With Operations present, use an intrinsically safe drill to drill a ¼” hole in the line. Operations will immediately test at the hole for LEL and toxic levels.
 - 4.3.6.3.1 Consideration for supplied breathing air shall be made if there is a possibility for toxics such as H₂S/SO₂.
 - 4.3.6.3.2 Consideration to water flood the piping should be made where possible.
 - 4.3.6.4 If levels of LEL are at or above 10%, H₂S/SO₂ or other toxics are detected, quickly slide the clamp over the hole and secure.
 - 4.3.6.5 Operations, Servicing Group and Maintenance or Contractor Coordinator shall develop a job-specific plan to reduce or manage the LEL, H₂S/SO₂ or other toxics to acceptable levels prior to proceeding with further demolition.
- 4.3.7 Encountering Unidentified Underground Piping
 - 4.3.7.1 Attempt to identify the service through visual inspection and Refinery documentation. Techniques such as sonic flow meter flow indication, Biddle testing, or voltage testing may be used to trace lines or test for energized or live process conditions.
 - 4.3.7.2 Excavate the pipe as required to facilitate positive identification of its service.
 - 4.3.7.3 If demolition of an additional line(s) is required, this procedure should be reviewed in its entirety for the added scope.

4.4 Electrical Demolition

- 4.4.1 Electrical equipment will physically be disconnected from all energy sources.
 - 4.4.2 Cables shall be air gapped / leads removed from the switch rack, bus, or breaker and equipment from which they are fed. Cables shall be air gapped / leads removed from the equipment that they are feeding.
 - 4.4.3 All proposed electrical cuts or disconnection and cut points will be reviewed by Operations, Engineering Representative and/or Representative of the Electrical Department and the Maintenance Foreman or Construction Coordinator during a pre-demolition site meeting. [RSW-SAF-046-Form1-DT Demolition Check List](#) shall be completed.
 - 4.4.4 All cuts or disconnections will be performed at locations agreed upon and identified by tag during the joint field review. The equipment or wiring will be verified to be in a de-energized state prior to each disconnection or cut.
 - 4.4.5 Conduit from the equipment shall be air gapped. Cover plates shall be installed and enclosure penetrations properly sealed.
 - 4.4.5.1 Once an air gap / disconnect has been performed, the cut or disconnection tag can be removed and the equipment to be demo'd shall be painted pink.
 - 4.4.5.2 Electrical cables shall be painted pink if being demo'd.
 - 4.4.5.3 The equipment must be tagged with information stating it has been air gapped and the location of the air gap.
 - 4.4.6 When a motor control center bucket is being abandoned, the bucket shall be removed, and a suitable blank cover plate installed.
 - 4.4.7 If equipment must be abandoned-in-place for energized work considerations, a shutdown work order shall be written to completely disconnect it from the energy source and remove it. Abandoned equipment shall be labeled "Abandoned in Place".
 - 4.4.8 Cables remaining in place shall be disconnected / cut and the ends spray painted pink.
- 4.5 Instrumentation Demolition
- 4.5.1 All instrumentation will be isolated from process piping and equipment. Root valves to remain shall be capped or plugged.
 - 4.5.2 All instrumentation shall be verified to be in a de-energized state before removal. Wiring at the DCS, SIS, or other control system hardware shall be physically disconnected.
 - 4.5.3 Wiring shall be removed from the instrument to the first junction box. Remaining wiring shall be relabeled (ex: "spare") at junction boxes and control systems.

- 4.5.4 Instrument air piping or tubing to the instrument shall be removed back to a branch or header block valve and plugged.
- 4.5.5 Removal of logic, alarms, graphics, etc. shall be coordinated with the Process Controls Group.
- 4.6 Equipment
 - 4.6.1 Equipment to be removed will be properly cleared of all process media and prepared for entry.
 - 4.6.2 Care shall be taken to isolate equipment containing catalyst, filter media, iron sulfides, etc. that may adversely react with the atmosphere.
 - 4.6.3 Relief valves shall remain in service until the equipment they protect is depressured, drained, all volatiles are removed, and is permanently isolated from the process.
 - 4.6.4 Equipment will be cleaned, and material discarded per MRD waste handling procedures. Consult with the Environmental Department and Operations for appropriate sampling methods and disposal requirements.
 - 4.6.5 Abandoned equipment man ways will have a minimum of one bolt installed to prevent entry.
 - 4.6.6 Abandoned exchanger shells shall remain open and clear. Permanent "Do Not Enter" signs shall be posted.
 - 4.6.7 Abandoned equipment shall be air gapped from all piping and energy sources.
 - 4.6.8 Abandoned equipment shall be labeled "Abandoned in Place".
 - 4.6.9 Dead legs will be eliminated wherever possible or added to the master dead leg list and winterized as required. Operations and Inspection must be notified of remaining dead legs. Shutdown work orders will be generated by area Inspections to remove dead legs at the next unit outage.
- 4.7 Buildings and Structures including selective or surgical demolition of structural steel and fireproofing
 - 4.7.1 In-service process lines, tubing, cable tray, cabling, conduit or any other in-service item supported by or imbedded within the structural element to be demolished shall be relocated or re-supported as necessary prior to demolition.
 - 4.7.2 Openings in elevated workplaces shall be protected with barricades.
 - 4.7.3 Drop areas from elevated workplaces shall be barricaded.
 - 4.7.4 Temporary structures and shoring shall be designed by competent persons.

4.7.5 Building penetrations will be sealed to maintain the integrity of building environment.

4.8 Unit Demolition

4.8.1 For unit demolition projects, a written demolition plan may be developed as an alternative to completing Form 1 for each piece of equipment. The written plan shall be developed by project stakeholders, including but not limited to, Engineering Representative, Area Operations Supervisor, Tech Service, Construction Coordinator(s) or Maintenance Foreman and Safety Representative to encompass the entire scope of the unit demolition. All aspects of the Demolition Procedure must be considered in this written plan.

5.0 REFERENCES

- 5.1 MISOHA-STD-1316 Part 20. Demolition
- 5.2 MDEQ "Guidance for Submitting Notification of Renovation and/or Demolition Projects Subject to NESHAP, 40 CFR 61, Subpart M"
- 5.3 [RSW-SAF-021-DT Excavation and Ground Penetration Procedure](#)

6.0 REVISION HISTORY

Revision number	Description of change	Written by	Approved by	Effective date
5	Added 3.3.2 for filling abandoned underground piping and sewers.	B. Dibert	J. Rabideau	5/15/17
6	Added silica as a hazardous substance in sections 3.1.2.3, 3.1.2.3.3 and 3.1.10	A. Styes	J. Rabideau	10/18/17
7	Language added for demolition of structural steel and fireproofing.	Dave Parkhurst	B. Dibert / J. Rabideau	11/6/17
8	Updated language clarifying electrical demo requirements, Defined Demolition and added language for drilling holes at cut locations.	B. Dibert / Johnny Stefko	S. Steering	6/25/2019
9	Procedure review, clarified when MIL should be completed, deleted requirement to have operations present during the use of shears	T. Brown	Morales	3/25/2020