

BP OIL -- TOLEDO REFINERY

	Area: Refinery Wide	Procedure No.: SAF 092
Effective Date: January 31, 2011	Exclusion of Non Essential Personnel During Planned Startup & Shutdown	Rev. No.: 5 MOC#: M20102903-001
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SCOPE	This procedure defines the requirement for removal of non-essential personnel during planned startups and shutdowns.
HEALTH Special PPE & Special Hazards	N/A
SAFETY	Unit Startup and Shutdowns are periods of increased risk.
REFERENCE DOCUMENTS	BP Refining Defined Practice for Exclusion of Non Essential Personnel During Planned Startup & Shutdown RDP 3.0-0101 OSHA Process Safety Management Regulation (29 CFR 1910.119) Definition of Essential Personnel from 2007 OSHA abatement agreement
SPECIAL MATERIALS & EQUIPMENT	N/A
QUALITY	N/A
ENVIRONMENTAL	N/A

OVERVIEW

It is not the intent of this policy to restrict the normal function of operations (e.g., routine rounds, operational adjustments, sampling) on running units. Nor is it the intent to restrict critical maintenance activities or the response of security and emergency response personnel.

General

1. This procedure governs the exclusion of non-essential personnel during the planned startup or planned shutdown of process units, process unit trains, and sections of process units.
2. This procedure does not apply to startup or shutdown of individual pieces of process equipment such as pumps, compressors or exchangers, or to hot starts following an equipment trip. Operations retain the right and the responsibility to limit access to the unit based upon potential hazards and unit-specific conditions.
3. This procedure is not applicable to a unit that has a defined mode of operation that does not have all the feed streams in service or to operations like coke drum switching, and catalyst regeneration of continuous or semi-regenerative reformers or units such as the WWTU, Blender, and tankage.
4. This procedure does not apply to emergency shutdowns or hot restarts. The exclusion (evacuation) of personnel during unplanned or emergency shutdowns is governed by emergency procedures.
5. During a planned unit startup or a planned unit shutdown, only essential personnel will be allowed in the applicable exclusion zone. The exclusion zone may include the process unit, occupied buildings and parts of adjacent units.
6. The appropriate management is responsible for developing contingency plans for evacuated non-essential personnel.
7. The exclusion zone boundary for personnel outside buildings should be the 4.4 psig (300 mbarg) vapor cloud explosion overpressure contour. Boundaries may be adjusted by no more than +/- 10% of the calculated distance to accommodate natural boundaries. (300 mbar is the 0% vulnerability threshold for people outside as defined in GP 48-50)
8. Buildings shall only remain occupied by Non-Essential Personnel if the risk to personnel is no greater than for personnel outside at the exclusion zone boundary. The exclusion zone applies to buildings with a vapor cloud explosion Building Damage Level (BDL) of 2b, 3 or 4. Buildings with a BDL less than 2b do not require evacuation.
9. Affected buildings are evacuated while the Level 2 exclusion zone is active.

10. During a planned unit startup or a controlled unit shutdown, high risk work activities on adjacent units should be reviewed for continuation, suspension or implementation of additional controls to reduce risk consistent with Control of Work requirements. Examples of high risk work activities include but are not limited to: hot work, confined space entry, lift operations, and working on elevated structures.
 11. There are two different levels of exclusion in this procedure. Level 2 is more restrictive than Level 1 and applies to the higher risk periods of startup or shutdown. The step in the shutdown or startup procedure that coincides with the transition points from Level 1 to Level 2, or visa-versa, is identified during the Operations Readiness Review (ORR).
 12. The Refinery Coordinator is responsible for ensuring that the exclusion zone is barricade taped, appropriate roads are coned off, and buildings are marked.
 13. The Refinery Coordinator is responsible for declaring the beginning and end of each exclusion zone period based on the ORR.
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- 1.0 Definitions
 - ___1.1 Essential Personnel – are personnel performing functions that are necessary to achieve a safe startup or shutdown, or continuing operations. This includes Operators, Asset (operations) Shift Supervisors, Asset Coordinators, Asset Superintendents, Process Engineers, and personnel performing critical maintenance.
 - ___1.2 Critical Maintenance – personnel performing work required to directly support the startup or shutdown under asset direction or who are required to support on-going operations.
 - ___1.3 Shutdown: Level 2 Begins - The point in time that the process unit involved in shutdown decreases feed rate, temperature, or pressure as part of a planned shutdown as defined in the ORR.
 - ___1.4 Shutdown: Level 2 Ends - The point in time where significant identified hazards, due to high-energy, transient operations, have been removed from the process unit involved in shutdown. This point in time marks the transition to a Level 1 exclusion zone.
 - ___1.5 Shutdown: Level 1 Ends - The point where the unit shutdown is essentially complete and most energy has been removed from the process. This point will be declared by the Refinery Coordinator. Additional shutdown steps and hydrocarbon removal from equipment

will continue after this point. Personnel access to the unit during these additional steps will be controlled by Asset and the Control of Work Permit process.

- ___1.6 Startup: Level 1 Begins - Level 1 exclusion shall begin no later than the point where hydrocarbons or toxics have been introduced into the process unit, process unit train, or section of the process unit involved in startup, and temperature or pressure begins to rise as part of startup.
- ___1.7 Startup: Level 2 Begins - The point in time where significant identified hazards, due to high-energy, transient operations, are introduced into the process unit (e.g. commencement of once-through operation, etc.) as defined in the ORR.
- ___1.8 Startup: Level 2 Ends - The point that all parts of the unit are stable at minimum operating conditions as declared by the Refinery Coordinator.

2.0 Exceptions

- ___2.1 The Refinery Process Safety Committee (RPSC) can grant an exception to this policy through the formal variance process. Variances must be documented and filed with the PSM Department.

3.0 Requirements

- ___3.1 The unit's Level 1 exclusion zone shall coincide with the process unit battery limits.
- ___3.2 The unit's Level 2 exclusion zone shall be the standoff distance defined above. Refer any questions regarding this to the PSM department.
- ___3.3 Contours for each unit are in Documentum. The link is:

[documentum\Docbases\TOL_DCTM_EE\TOL\Asset Unit Info\Refinery Maps_49\Drawings\General Engineering Drawings\Site Plans \(General Arrangement; Project Plan\)](#)

- ___3.4 Non essential personnel and vehicles cannot enter affected areas of both Level 1 and Level 2 exclusion zones. This will be accomplished by:
 - Within the process block, the roads leading into any process unit exclusion zone will be barricaded at the direction of the asset team. No vehicles will be allowed to enter roads or process units within active exclusion zones unless written permission is granted through issuance of a Vehicle Entry Permit or Hot Work Spark Potential

WCC-Permit.

- Outside of the process block, additional roads designated to be within the exclusion zone will be barricaded with cones by security at the direction of the Refinery Coordinator. Access is limited to vehicles and equipment necessary for ongoing operations, critical maintenance, or emergency vehicles. (OM&S operators can continue to use these roads to access their areas to perform routine tasks.)
- Buildings that must be evacuated will be barricaded at each entrance “Do Not Enter without Operations Permission”.

- ___3.5 Operators will barricade off the immediate vicinity around the base of the flare to prevent pedestrian traffic or work from being performed in that area during all Level 2 exclusion periods for process units tied to that flare. In addition, all non-essential personnel shall be removed from buildings within 330’ of a flare. This is due to the potential for liquid carryover and thermal radiation effects from the flare. The PODS are exempt from this requirement.
- ___3.6 Notification of the establishment of an exclusion zone will be communicated to all personnel (BP and contractor) prior to all planned shutdowns or startups.
- ___3.7 Exclusion of non-essential personnel will continue until the unit has reached stable operations. The Refinery Coordinator will decide when the unit has reached stable operations.

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TABLE 1 BUILDINGS THAT MUST BE EVACUATED

	Blender	E&I Shop	Maint. Planning	Machine Shop	Warehouse (Brick section only)	WGI Electricians	WGI Pipe shop	Analyzer Shop	Old Section of Admin Bldg	WGI Insulator 2 story section	WGI Offices	Water Treating	Old Lab ¹
Coker 2						X							All Units
Coker 3	X					X						X	
Crude Vac 2						X							
DHT A						X	X	X	X				
BGOT		X				X	X						
FCC	X					X						X	
ISO 2		X	X	X	X	X	X		X	X	X		
Boilers	X					X						X	
Ref 1	X					X			X				
Ref 2						X							
H2 Plant						X	X						
SRU 1	X												
UnSat Gas	X					X						X	
Crude 1, Vac 1, NHT, Sat Gas	X				X	X	X	X	X			X	

¹ Evacuate for all unit start ups and shutdowns due to proximity to the East Flare.