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# Safety Review Checklist MOC-

(To be used for routine MOCs)

If the NA Box is checked for that section or sub-section, then no other box needs to be checked. Action If NA Box is not checked, then every box in that section (Yes or No) must be checked. YES NO NA If Yes Box is checked, then action item # must be assigned, with details listed in the "Explanations and Action Item" section. Item A. Operation and Design: Review startup, normal operation, shutdown and decontamination W/N/A Introduce new or alter existing process hardware? V Introduce process materials (feedstock) with different trace levels of chemical material different than 4 currently used or from a source which FMC has no direct experience? Require any new facilities for isolation and decontamination? Deviate from any current Standards and Specifications? U Require any new materials of construction adequate for the process service? U Affect the process or equipment upstream or downstream of the change? 4 Affect safe access for personnel and equipment, safe places of work and safe layout? Affect the reaction stability or controllability of the process? 4 4 Introduce new ignition sources such as static electricity, pyrophoric material, etc? 10. Introduce Hoists, Trolleys and/or Monorails that require inspection and must be added to inspection files? W Are utility systems (heating and cooling media, etc.) compatible with process if leakage occurs? V 12. Is freeze protection (e.g., steam or electrical tracing) required? Has new freeze protection equipment been 4 added to the unit freeze protection checklist? Will this result in a change in Operations personnel workload? Will this result in new Visual Display Screens? (Ensure they are free from glare and legible) 4 Require the demolition of any equipment, area, process, etc.? (Demolition SOP must be followed) W Will this change affect utilities (directly connected to the process)? 2 Will this require the addition of new communications equipment (e.g., siren, intercoms, phones, etc.)? 18. Can emergency automatic isolation valves be activated without exposing personnel to hazardous 4 atmospheres in an emergency involving the equipment they are installed to isolate? Has the need to lift, carry, push or pull heavy loads or parts been minimized? 4 20. Will this addition be constructed so that need for stooping, bending, stretching, over reaching and work П 1 overhead during operation will have been eliminated or reduced to a minimum? 21. Will this addition be constructed so that all floor drainage, curbs, gutters and dikes are installed correctly? 22. Will this addition be constructed so that all Operating, I&E and Maintenance access is adequate? 2 B. Relief and Blow down N/A Introduce or alter any potential cause of over pressure or vacuum (or raise/lower temperature) in any part of П  $\Box$ П system? Install any block valves which could isolate equipment from existing relief devices? Has the relief device sizing basis for existing equipments been affected? Will this require new relief devices? Can oxidized work solution be trapped between 2 valves without adequate relief? Can aqueous hydrogen peroxide be trapped between 2 valves without adequate relief? Is a Relief Header being tied into? If so, is current header design adequate for additional capacity? 7. C. Electrical Area Classification N/A Introduce or alter the location of potential leaks of flammable material? Alter the chemical composition or physical properties of the process material? Introduce new or alter existing electrical equipment? Does the electrical equipment meet the requirements of the area classification? Will this require demolition of electrical equipment that is obsolete or being replaced? (Must be properly disconnected/de-energized and demolished/removed - i.e., underground/overhead cable, conduits, tray Ф systems, pole lines, old switches and labels removed, overhead bare wire, etc) Will this alter existing or create any new electrical area classifications? T Will this require a new or revised equipment arc flash hazard assessment(s)?



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D.	Controls, Interlocks and Alarms N/A			,	
1.	Affect any existing interlock or alarm system, or require additional interlock or alarm protection?		W		
2.	Create new or revision to critical alarm limits/priorities?		U		A
3.	Has interlock function and intent been reviewed?				(1)
4.	Are interlock systems independent from process controls?			V	
5.	Have mechanical devices (e.g., Restriction orifices) required for proper operation of interlocks been clearly				
	identified and their function documented?			19	
6.	Will this change affect the failure mode (e.g., open/close, hi/lo, etc.)?		U		
7.	Are control strategies or tuning parameters being altered?		W		
E.	Procedures, Guidelines and/or Checklists N/A	13/8-1		Tin (a)	
	es this process change impact any of these published standard Operating procedures, guideline	s or che	cklists:	, 🗆	N/A
1.	Initial startup			n	
2.	Normal Operations			di	
3.	Temporary Operations		Ē	Th	
4.	Emergency Procedures		Ħ	T	
5.	Normal Shutdown	T T	Ħ	T	
6.	Startup following a turnaround or emergency	H	Fi.	Ħ	2
7.	Interlock Documentation	H	10	Ħ	
	es this process change impact any of these published standard Maintenance procedures, guidel	ines or c	hecklis	ts?	N/A
8.	Affect existing Maintenance procedures or require new procedures, guidelines or checklists?	ПП		N	
1700000	es this process change impact any of these published standard Distribution procedures, guidelin	nes or ch	ecklist	62 N	J/Δ
9.	Affect existing Distribution procedures or require new procedures, guidelines or checklists?			H	JA.
150.00					
house	Process Safety Information (PSI) N/A				
Do	es this process change affect any of the following PSI data? N/A				2.4716
٠	Operating limits				-
•	Operations Reading Sheets or Checklists			Ф	
•	Consequences of deviations			Ф	
•	Steps to correct/avoid deviations			Ф	
•	Safety and health considerations				
•	Properties, hazards of chemicals				
•	Precautions to prevent exposure				
•	Control measures taken if physical contact				
•	Quality control of raw materials and control of HHCs inventory				
•	Any special hazards				
	Safety systems and their functions				
	Process Flow Diagrams (PFDs)		n	F	
	P&IDs		n	a	
	Equipment code certifications	H	Ħ	Ħ	
Do	es this process change affect any of the following PSI data? N/A				
1.	Does this MOC require that Loop Sheets be updated?		П		THE CONTRACTOR
2.	Does this MOC require that the Design Basis and/or Design Standards are updated for Critical Equipment List			7	
-	(safety, production and PSM)?			甲目	
3.	Does this MOC require that SAP be updated for new equipment or that new inspections/PMs be created?	П			
4.	Does this MOC require new Analyzer Checks?	H	H	#	
5.	Does this MOC require new Instrument Calibration Procedures or Analyzer Calibration Procedures?		Ħ	Ħ	
6.	Does this MOC require that the site Plot Plan (5-F-0001.dwg) be revised?	H	H	Ħ	
7.	Does MOC create a <u>new confined space</u> ? (Revise PS-HW-03-1176 & a new Rescue Pre-Plan must be				
	created <u>prior</u> to commissioning.)				
8.	Does MOC create a <b>new stationary vessel</b> requiring NFPA 704 diamonds? (Revise PS-ER-03-1401)			П	
9.	Does MOC create a <b>new administrative lock</b> ? (Revise SH-XX-03-1410)	Ħ	H	Ħ	-
11-0-24	Affect industrial hygiene concerns? (If respiratory affected - Revise SH-XX-01-3511 & -3514) (If hearing			A	
	affected - Revise SH-XX-01-3501) (Notify OSS&ESS)			4	
11.	Create new areas that must be added to SWARM, Housekeeping, or other area audits?				



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G,	Environmental \( \sqrt{N}/A \)			Najz	N. J. Company
	Control Devices N/A				7
1.	Require modifications to flare or vent systems which increase loading, change compositions or change smokeless burning capacity? (H <sub>2</sub> Vent, SRS Vents/Scrubbers, Sewer, etc.)			P	
2.	Require any physical or process control changes to hazardous waste handling facilities such as storage tanks?			ф	
3.	Require temporary loading/unloading facilities or new additives?				
4.	Require modifications to instruments or analyzers monitoring water usage, fuel usage, wastewater or SRS?				
5.	If the environmental control device should fail, will it cause a reportable/recordable environmental event?				
	Permits N/A		110		
6.	Increases in the hourly or annual production rate?				
7.	Increase in the hourly throughput of a pump, storage tank (filling or withdrawal rate), or other equipment?				
8.	Addition/modification of new piping components such as flanges, valves, relief devices, or pumps?				
9.	Change the service of storage tanks, tank compositions, temperature or vapor pressure?			1	
10.				4	
11.	The state of the s				
	Require modifications of wastewater handling or treatment systems?				
	Require tie-ins or modification of the potable water system?				
	Require New Fugitive Emission Components be added to List?				
15.	Require revisions to the  Contingency Plan,  Spill Prevention, Control & Countermeasure Plan (SPCC), and/or  Storm Water Pollution Prevention Plan (SWP³)?			中	
	Chemical Hazards N/A				
	Requires new SDSs or revision to existing SDSs?			Ф	
Joseph	Are there <u>any</u> new chemicals? (If so – pre-approval <u>must</u> be obtained from Environmental Engineer, OSS&ESS, and Process Safety Engineer)			ф	
9575 OT 1	Will there be an effect or change in the "Maximum Intended Inventory of Chemicals"?			ф.	
19.				Ф	
	Runoff, Spill Containment & Control N/A		A Charles		
	Add chemical Inventory in an area with no secondary containment?			Ш	
21.	Loading or unloading of product or raw material with loading lines and disconnects over an uncontained area?			Ф	
	Impairs or impacts surface water drainage.			4	
	Are measures required to prevent or limit spills during operations?			Щ	
	Is transfer capability available if an emergency situation should occur?			4	
25.	If containment should fail, could an offsite release potentially occur?				
	Operations N/A		The plant		0.016 015
750000000000000000000000000000000000000	Are there specific environmental restrictions that will limit operations?				
	Could releases from the process area travel off site?			Ф	
28.	Have off site effects been considered in locating process equipment and release points (i.e., flare, PSVs, vents, etc.)?			中	
	Area Detection N/A				
29.	Is area toxic or flagamable gas monitors/detection required?				
	Security N/A	RE WAY	10000	1 80	
1.	Will this introduce a new Chemical of Interest (COI) from a DHS perspective? (If so, #2-7 must be "Yes") (Notify OSS&ESS)			P	
2.	Will this require revisions to the site DHS Top Screen? (e.g., new COI, increase in existing inventories, etc.)			<b>b</b>	
3.	Will this require revisions to or require a new Security Vulnerability Assessment (SVA)?	H	H	<b>H</b>	
4,	Will this require revisions to the site DHS Site Security Plan (SSP)?	H	H	H	
5.	Will this require revisions to any security procedures or protocols, or to Security Post Orders?	H	H	H	
6.	Will this require new or revised "secure" or "access restricted" areas?	H	Ħ	F	
7.	Require installation of any new - or modification to - <u>security</u> equipment (fencing, cameras, lighting, bollards/barriers, etc.)?			6	



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I.	Emergency Response N/A				
1.	Do emergency response plan or fire procedures (Fire SOPs, Fire Brigade Pre-plans, Fire-Related Inspection Forms, and/or Rescue Pre-Plans) require revision? (Notify OSS&ESS)			中	
2.	Is there any special emergency response equipment required? (Notify OSS&ESS)			ф	
3.	Is there a need for any new, specialized protective equipment or clean up supplies? (Notify OSS&ESS)				



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J.	Safety Equipment V N/A				
1.	Affect existing, or require the provision of additional safety equipment? ( Safety showers, Eyewashes, Other)			中	
2.	Require the provision of additional fire mitigation equipment? ( fire hydrant monitors, fire extinguishers, foam drums/totes, sprinkler/deluge systems, dry chemical systems, hydrocarbon detectors, the Other)			ф	
3.	Require additional personal protective equipment or changes to existing approved PPE? (If PPE is affected, then SH-XX-01-3503 and/or SH-XX-01-3504 must be revised)			ф	
4.	Require additional safety signage?				
5.	Require use of valve shields?			Ф	
6.	Require use of restraining cables on chain operated valves?				
7.	Require use of new Fire Doors and/or Fire Walls?			Ф	
8,	Introduce new Doors, Roll-up Doors and/or Ramps that may/will require no-slip entrances/surfaces?				
9.	Introduce new Emergency Exits that may require emergency lighting/signage, marking, etc.?				
10.	Introduce new Handrails, Guardrails and/or Safety Chains that must be up to proper standards?				
11.	OSHA standards)				
12.	Require use of new fixed ladders that are ≥20 feet in travel height, or that are ≥20 feet from ground level?  (If so, they must be equipped with ladder cages that meet OSHA standards)			ф	
13.					
14.		Ī	n	J	
K.	Demolition or Removal of Equipment WN/A				
1.	Will this require use of the demolition process/procedure and will it be reviewed and followed?		П		
2.	Have all hazards related to removal of equipment been evaluated?	n	F	T	
3.	Will this require equipment to be removed to be placed in a zero state of energy?	П	$\Box$		
4.	Will this affect the environmental permit or require modification?				
5.	Will this require safety updates due to removal of this equipment?			đ	
6.	Will this affect any procedures and will procedures be updated and personnel informed prior to removal?			T I	
7.	Will this require P&ID and affected P&ID's being updated be done prior to removal?			T	
8.	Will this require affected block diagram(s)/block flow diagrams be updated?			Ф	-
9.	Will this require a plan for disposal of this equipment?			Ф	
10.	Will this affect existing interlock(s) or alarm system(s)?				
11.	Will any control strategies be altered?				
12.	Will this affect any existing electrical equipment?				
13.	Will this affect electrical classification?				
14.	Will this affect the process or equipment ☐ upstream or ☐ downstream?				
15.	Will area communications or detection monitors need modification?				
16.	Will this result in a change in Operations personnel work load?				
L.	Other Safety Considerations N/A				
1.	Will the impact of this change require communication to upstream/downstream operations personnel (Gulf			фΙ	
	Coast Waste Disposal Authority, Air Liquide, customers, or suppliers)?	ш,			
2.	Does impact of change affect product quality or new materials under ISO?			Ф	
3.	Any potential to expose personnel to Asbestos?			Ф	
4.	Are there ANY OTHER safety concerns not previously addressed?			Ф	



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#	EXPLANATIONS AND ACTION ITEMS	RESPONSIBILITY	Date Completed
1.	D.3-Reviewed PS-MI-11-INTIZSOP/1251P	/Cd/2A	10/2/17
4.	and Faind to match MOC.		
2.	Add DCS Graphic stan Indication, When	A-G-	
4.	Permissive is OFF.		
3	After Logic Blocks are implementation	AG-	
6.	do a chechout on permissie parameters		
7.	,		
8.			3
9.			
10.			

**SAFETY REVIEW PARTICIPANTS** Leader of the Review: Job Title:

Date(s) of Review: | | 0 / 2 / 17