Revision Number	Revision Description	Revised By	Revision Date
New	*Considered as starting document for revision change table*		02/14
001	*Verbiage change Operations Coordinator to Production Execution Manager (PEM) and title change for easier access.*	C. Coon	04/04/2018
002	Lock color Orange and Black or Silver	R. Guy	05/02/2018
003	Removed the inspection portion of the procedure and relocated to BMEHS-002.050, updated the purpose statement, added all definitions, changed the valve position change form, updated requirements expectations to meet the requirements of an organizational protective measure: added 4-eyes requirement, review requirement, and the audit requirement.	C. Wilding	09/28/2021
004	Added guidance on manual valves being added to the LO/LC Program	D. Sons	9/20/2022
005	Revised requirement for when a MOC is required for temporarily changing the valve position	D. Sons	7/12/2023

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1. PURPOSE

To establish standard work practices within BASF Beaumont that will ensure the proper use of securing devices on manual valves where proper valve position is critical to maintaining a safe operation. A proper secured valve program can ensure the availability of plant protective devices and our emergency response systems and can be used to address high-risk scenarios identified in a PHA.

2. DEFINITIONS

2.1. **Locking Device**
A mechanism that requires the use of a tool (e.g., cutting tool or key) and special administrative approval to be removed. This device is used to prevent unauthorized operation of a safety critical valve.
Examples: metal lock, metal car seal, plastic car seal, plastic chain, etc.

2.2. **Locking**
The securing in either the OPEN (LO) or the CLOSED (LC) position, as identified on a piping and instrumentation diagram, by attaching lock so that the valve cannot be operated without removing the locking device.

2.3. **Organizational Protective Measure**
With respect to secured valves, an administrative procedure that can be used to provide primary or supplemental risk reduction for the scenarios below:
- As a safeguard for mitigating hazardous scenarios identified in a BASF Hazard Assessment Review (i.e., PHA, HAZOP, MOC, or Step Review).
- To ensure the availability and reliability of a mechanical Protective Device (e.g., Pressure Relief Valve (PRV) or rupture disc) and/or I&E Protective Device (i.e., Safety Instrumented Function (SIF))

2.4. **Management of Change (MOC)**
Process for the identification, assessment, communication, and implementation of changes to a chemical process. An MOC must be initiated when a locking device alteration is not covered by a normal operating procedure.

2.5. **Master Secured Valve List**
A detailed list to document and track all secured valves in the unit.

2.6. **Master Secured Valve Tracking System**
A readily available tracking system utilized to record information relative to the change in status of a locking device and the current position of the secured valve.

2.7. **P&ID**
The latest approved version of a piping and instrumentation diagram.

2.8. **Production Technician**
Qualified technician that has proven a basic level of proficiency in the affected system through testing.

2.9. **Protective Device**
A highly reliable device used to prevent a Risk Class B or C scenarios as per the BASF Risk Matrix. This applies equally to Safety Instrumented Systems and pressure relief devices.

2.10. **Risk Class**
With regard to the BASF Risk Matrix, Risk Class indicates the risk of an incident as a function of the severity and likelihood of that incident occurring. Risk Classes range from A (extreme/unacceptable) to F (very small risk). Risk class is determined during a PHA or other process safety related evaluation of a chemical process.

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2.11. **Root Isolation Valves**
First isolation valve between a chemical process and instrumentation associated with a safety instrumented function (SIF).

2.12. **Special administrative approval**
An administrative protocol requiring management approval and an actionable checklist outlining explicitly the steps or actions that must be taken. Example: Performing an MOC or filling out the Locking Device Removal Form, Attachment 2.

2.13. **3.15 Safety Instrumented Function (SIF)**
Safety function with a specified safety integrity level which is necessary to achieve functional safety. A SIF can be either a safety instrumented protection function or a safety instrumented control function or both.

3. SCOPE

This procedure will be used when a safety system valve position is changed from its normal position (from OPEN → CLOSED or CLOSED → OPEN) which is not covered by the Beaumont Lock, Tag, and Try Procedure.

It also describes the type of lock device that can be used to secure the valve position.

4. NORMAL OPERATING PROCEDURE

NOTE: This policy is established to identify and warn personnel of critical valves by which inadvertent movement could create situations that endanger personnel safety, process equipment or the environment. In Addition, the extended isolation of PSVs from the systems they are designed to protect may be contrary to insurance requirements, local or state laws or sound operating practices.

CAUTION

Operating a *safety system valve* protected by a lock in a position other than how it is designated, could result in a life-threatening situation for personnel, equipment, or the environment.

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NOTE: This procedure sets the requirements for locking, unlocking, and manipulating valves within the plant which are integrated with plant safety systems.

Guidance on Secured Valve Use

The following items are always considered safety critical and system Locks shall be placed on the following:

- **Valves upstream of PSVs**
- **Valves downstream of PSVs**
- **Valves upstream or downstream of exchangers on Cooling Water side that do not have PSVs on the process**
- **Bypass valves around (SIS) Z function automatic valves**
- **Isolation valves for the SIF systems (e.g., devices, equipment, instruments)**
- **Any valves deemed to be Safety Critical by a Hazard Review Team (e.g., PHA) with a Raw Risk Rank of B/C/D as designated on the BASF Risk Matrix.**

These valves shall be documented on their representative P&IDs with the LO/LC designation.

NOTE: Any deficiencies noted require an AIM report to be completed. This will maintain the safety intent of the SIL instrumentation.

4.1. APPROVED LOCKING DEVICE:

4.1.1. Only Orange and Black or Silver Locks shall be used. Chain or cable can be used to lock valves in required position.



NOTE:

The goal is to eventually phase the Orange and Black lock out. So anytime a new lock is applied or replace do so with silver locks.

4.1.2. Each of the operating areas will have sets of locks that are commonly keyed within the set, but keyed differently from the lock set for the other operating areas.

4.1.3. Each lock shall be tagged in the field to identify the lock position. LO locks shall be green tagged, and LC tags shall be red tagged.

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5. CHANGING THE VALVE POSITION IN THE FIELD

Z- BEGIN ORGANIZATIONAL PROTECTIVE MEASURE

NOTE: Changing the position of a safety system valve without following this procedure will result in disciplinary action.

Initials	
	1. Prior to temporarily removing the lock from the safety system valve, a *Safety Valve Position Change Form* must be filled out.
	2. An MOC must be generated prior to temporarily changing the valve position unless it's part of a Control of Hazardous Energy Procedure, the Safety Valve Position Change Form (Attachment A this procedure) must be attached to the Lockout/Tagout Sheet for Energy Isolation (Attachment C). The Position Change Form will not have signatures or dates, it's simply a reminder to operations for when they put the system back in service. In the event of a TAR refer to BMEHS 002.050 Z-Lock Open/Closed Valve Inspection Procedure to verify valves are in correct position prior to startup. 3. If an Emergency MOC needs to be utilized due to a process upset, the Emergency MOC must be entered into the MOC Database once the upset is brought back under control.
NOTE: The maximum duration of the Temporary MOC is 72 hours – the valve must be returned to its normal position before 72 hours has expired.	
	4. Once all required signatures are retrieved and the *Removal* section of the form is complete, the *Safety System Valve Position Change Form* will be retained in the *Locked Valve Book* in the control room until the valve is restored to its original position.
	5. Physical removal of the lock can now occur.
	6. Safely change the original valve position to the new required valve position.

Z- END ORGANIZATIONAL PROTECTIVE MEASURE

5.1. Notifications to Affected Personnel

5.1.1. A copy of the Safety System Valve Position Change Documentation Form shall be posted in a designated area in the control room.

5.1.2. The Shift Supervisor will determine which Operations and Maintenance personnel must be notified of the valve position change.

5.1.3. It is the responsibility of each Shift Supervisor to ensure that their shift personnel, as necessary, review the information.

6. PROCEDURE REVIEW AND AUDIT REQUIREMENTS

This procedure meets the requirement of an organizational protective measures and must be reviewed once annually by EHS Personnel and compliance with the requirement shall be audited at least once annually by each area Production Execution Manager.

7. FINAL CHECK

1. If you find changes to this procedure are needed during performance or review, prepare a marked-up copy of the procedure showing how you would like it changed.
2. Submit the marked-up procedure to the learning and development coordinator (LDC).
3. If the requested changes are approved, the LDC will notify the requestor and arrange for a writer to begin a revision.

8. RESPONSIBILITIES

8.1. Beaumont Site Leadership Team

Has primary responsibility for implementation of this procedure.

8.2. Area Operations Manager

Has primary responsibility for the initiation, re-issuance, administration, and/or interpretation of this procedure.

8.3. Area Production Execution Manager

Has primary responsibility for ensuring that compliance to the requirements of this procedure are audited at least once annually.

8.4. Beaumont Site Employees and Contractors

Have primary responsibility for adherence to procedure including identifying deficiencies in the procedure, and identifying, reporting and correcting activities not in compliance with the procedure.

9. RELATED DOCUMENTS

ATTACHMENT A - Safety System Valve Position Change Form
BMEHS-002.005 Control of Hazardous Energy – Lock, Tag, and Try

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ATTACHMENT A BMEHS-002.040 – Safety System Valve Position Change Form

*This section must be filled out by the operator **removing the lock** to change valve position:*

Name of Person Removing Lock:					
Date & Time Lock Removed:					
Area:		Related Equipment:		Normal Position:	Open / Closed
Description of Lock to be Removed:					
□ Crosscheck P&ID to verify proper valve identification and position when returning to service					
Continue if this form is NOT used strictly for LOTO					
Reason & Duration for Valve Position Change (max 24 hours):					
Checklist:					
□ Temporary MOC #_____ □ Additional precautions considered and implemented if found.					
Signatures (“4” Eyes)					
Qualified Operator:			Qualified Operator:		
Approval to Remove:			Manager Signature:		

*This section must be filled out by the operator **re-installing** the lock on the valve when returning it to its normal position:*

Name of Person Re-installing Lock	
Date & Time Lock Re-installed	
Checklist:	
□ Reason for position change completed. □ Locked valve returned to Normal Position. Crosscheck P&ID to verify proper valve identification and position. □ Root valves have been restored - or - □ NA I&E Technician signature required if root valves on transmitters involved: I&E Tech Signature: _____	
Signatures (“4” Eyes)	
Qualified Operator:	Qualified Operator:
Work Completed:	Ops Manager:
Valves Restored:	I&E Supervisor Signature:
Operations Returned to Normal:	EHS Manager Signature:

**Approvals may be made by the person specified or their designee*

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