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Burner Management

Purpose

To establish and implement a system which proactively reviews, approves and documents all changes for Burner Management Systems. This system is a method of requesting, documenting, approving, and communicating changes that are to be made to a BMS System.

Extent

The Burner Management System (BMS) Management of Change Policy must be applied whenever any changes are to be made to BMS system. Changes are defined as modifications to equipment, piping, instrumentation, software, process technology, operating procedures, design or others as identified.

Definitions

- **Originator** is the person responsible for initiating the Burner Management System (BMS) Request for Change (RFC) form. The **Originator** will follow the entire process to ensure the intent and approval is implemented properly. An originator is an area superintendent, production supervisor, engineer, or maintenance supervisor.
- **Emergency Situation** is one in which there is an unreasonable risk to the employees, the environment, the community or the facility. When an emergency situation exists, the Production Supervision is to be notified at once. If the emergency is on holiday or weekend or not during normal business hours, then the on duty Production Supervisor will handle the emergency.
- **Catastrophic release** is a major uncontrolled emission, fire or explosion involving that presents serious danger.
- **Change** is operation outside of previously approved operating limits, process technology changes (flow rate, raw materials, chemicals, etc.), equipment changes (materials of construction, equipment, settings, calibrations, etc.), specifications, piping arrangements, computer program changes, etc. or using procedures that deviate from the normal operating procedures.
- **Emergency Change** is immediate action required to avoid any one of the following:
 - Injury to plant personnel
 - Adverse impact on the environment or operation
 - Damage to equipment or facilities
- A **Permanent Change** (planned or emergency) that has been approved per MOC guidelines—posing no threat or undue risk to: personnel, community, environment, equipment, facility, etc.
- **Procedures** are all written instructions that affect the plant processes—Operations, Maintenance (Mechanical, Electrical, and Instrumentation) Fire & Safety, Environmental, Engineering and Management.

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- **Process** is a series of actions or operations directed toward a particular result.
- **Process Chemicals** are raw materials, additives, catalysts, intermediate products, by-products and end products.
- A **Reviewer/Approver** is a person assigned to evaluate, approve or reject a MOC request.
- **Regulated Process** is any activity involving a high hazardous chemical that includes use, storage, manufacturing, handling, on-site movement of such chemicals or any combination of these activities.
- **Replacement-in-kind** is a direct substitution of process chemicals, technology, equipment, or facility that satisfies the design specifications and does not alter the process condition in any way. A replacement-in-kind does not require a Request of Change Form to be submitted/completed.
- **Burner Management System (BMS) Management of Change** is identifying changes before they are implemented, thoroughly reviewing proposed changes (other than “replacement in kind”) to ensure that additional risk is not being introduced, documenting the approved or denied change for future reference, updating existing documentation (training materials, procedures, etc.) and training employees that are affected by the change.
- **Replacement-not-in-kind** is any substitution of process chemicals, technology, equipment, procedures or facilities that is not a direct substitution. A replacement-not-in-kind does require a Request for Change Form to be submitted/completed.
- **Target Date** is the estimate of the startup or implementation date for the proposed change stated by the originator on the “Request for Change” form.
- **Technical Basis** is an explanation of the proposed modification to a process or operation including the reason(s) for performing the work, desired results, benefits, technical design and appropriate implementation instructions.
- **Technology** is the technical basis for design and operation of the plant (e.g., the design/actual capacities, process chemistry, mechanical design, process control hardware/software and instrumentation).
- **Temporary Change** is a non-permanent change (planned or emergency) that has an expiration or removal date. A temporary change must be approved per MOC guidelines—posing no threat or undue risk to personnel, community, environment, equipment or the facility.

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Execution

All modifications to BMS equipment, procedures, raw materials and processing conditions other than “Replacement-In-Kind” by shall be reviewed and approved prior to implementing a change. Minimum requirements for BMS management of change include:

- Addressing the technical basis,
- Addressing the impact on safety
- Updating operating procedures and process safety information according to the modifications,
- Indicating the necessary time period for change,
- Approving change under the authority of designated personnel,
- Informing and training affected employees.
- Obtaining review & direction by Consultants who are recognized experts.
- Obtaining approvals by our Insurance Carrier
- Updating documentation

To complete a Management of Change Form, take the following steps:

Step	Who Does It	Action
1	Originator (Area Superintendent/ Manager, Engineer, or Maintenance Supervisor)	Person who identifies the change <ul style="list-style-type: none"> • Check Purpose of the change • Describe the change. • Technical basis for change • Describe the impact for change
2	Originator	Obtain a Request For Change (RFC) form.
3	Originator	Ensure each required element of the form is completed.
NOTE: An Area Supervisor, General Superintendent, Engineer, or Maintenance Supervisor must originate a RFC form.		
4	Originator	Determine that the proposed modification is a change (see definitions at the end of this document) and not a “replacement in-kind.”
5	Originator	IF.....it is a replacement-in-kind THEN...the change can be made without any further action.

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6	Originator	IF.... the proposed modification is not-in-kind . THEN.... complete a “Request for Change” form and route the form to the appropriate reviewers/approvers
7	Originator	Determine if the change is permanent or a temporary change. For Emergency, see appropriate section later in this document.
8	Originator	IF.... the change is temporary THEN.... after 30 days, determine if the change: 1. Should be made permanent 2. Should remain temporary 3. Has been closed
9	INITIAL REVIEW AND APPROVAL TO PROCEED	Review the “Request for Change” and approve or deny the change; make recommendations. Both Approver and originator must sign before proceeding.

10	Reviewers/ Approvers	IF.... the Request for Change is approved THEN.... the reviewers/approvers will sign the form as appropriate contacts and approvals have been completed. <ul style="list-style-type: none"> • Insurance Approval Completed • Engineering Consultant (BMS expert) approval completed. • Pre-Startup safety review completed. • Design drawings updated (red lined) • Software logic reviewed and red lined. • Work order scope written
11	Reviewers/ Approvers	The last reviewer/approver forwards the original Request for Change Form to the Originator.
12	Originator	Reviews for accuracy, completeness and proper approvals, then distribute a copy of this form to the affected personnel who will make the change.
15	Originator, Process Supervision, Affected Personnel,	If the approved change has taken place, determine if there is any training, documentation, safety, health or environmental concerns that must be addressed before startup. Conduct Pre-Startup Safety Review (if required)

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16	Originator	IFthe completion date for the temporary change expires, and the change is still in effect THENthe change needs to be reissued to the reviewers/approvers for re-evaluation.
17	Originator	Update all documentation with the change involved.
18	Originator	File change in Engineering files and operations files.

In an emergency situation, the normal MOC procedure may not be adequate to allow changes quickly enough to prevent hazardous conditions from occurring. In emergency situations, this emergency procedure must be followed.

Responsibilities

- Completion of each BMS Request for Change will require the participation of various personnel depending on the type and location of the change. This section details individual responsibilities throughout the stages of the BMS Request for Change process.
- It is the responsibility of each approver to review each request with regard to the potential safety, operational, maintenance and economic justifications and impacts of the change.
- **IF**....all reviewer/approvers agree that the change is feasible and justifiable, safe and within recognized Standards requirements; **THEN**....the change can be processed according to the proper procedure.
- The **Originator** is responsible for:
 - Initiate the Notification of Change form to communicate the change to affected personnel.
 - Progressing the RFC form through assessment to approval and completion, and for updating all documentation. If the RFC is temporary, the originator is responsible for reviewing the change every 30 days to determine whether the change should be permanent, remain temporary, or closed.
 - Tracking documentation—location /progress of the Request For Change Form.
 - Ensuring that all necessary reviews and preliminary estimates are completed before detailed design or funding procedures are started.
 - Coordinating communication/retraining efforts to ensure that all personnel affected by an approved change are trained to the change and their responsibilities.
- Once a change has been approved/implemented, the originator must complete other duties that may include (but are not limited to):
 - Updating any/all drawings (P&ID's) that are affected by an approved change.
 - Contacting the Insurance Representative to ensure compliance.

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- Completion—Filing of documentation with appropriate departments (Engineering, Maintenance, Operations, etc). Coordinating with change participants to ensure that all changes after “final design” are documented.
- Ensuring that a Pre-Startup Safety Review (PSSR), is completed.
- NOTE: Originator may assign duties to other personnel, however the intent is to have one person responsible from start to finish related to BMS changes.
- The Supervisors, (Production and Maintenance) endorsing the change are responsible for ensuring the following

Ensuring that:

- All changes made to a regulated process be in accordance with this procedure.
- The change is in line with the general plant or site strategy.
- The cost is acceptable.
- The change as proposed is expected to achieve its aim.
- Appropriate engineering and process design standards are met.
- The Burner Management System (BMS) Request For Change form has been completed and with all approvals.
- The safety of the operation, people, and the environment are protected.
- All documentation (SOP’s, P&ID’s, Drawings, etc.) have been updated and prepared.

Note: The *Supervisors, (Production and Maintenance)* may also be the Originator.

- The **area engineer** is responsible for:
Serving as a technical advisor to the Operations Superintendent.
- The responsibilities of *Operations Superintendent* are to consult with the originator, maintenance, insurance representative and production supervisors about hazards and corresponding prevention plans associated with each proposed change.

The *Operations Superintendent* will assist in designing, obtaining, directing installation and certifying the application of mitigation devices.

The *Operations Superintendent* must approve the change before it can be implemented.

- Request for Change Forms will be available in the following locations:
 - Area Production Supervisor
 - Engineering

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- On all BMS control panels
- Implementation: A change can occur only after the Burner Management System (BMS) Request for Change Form has all the approval signature of all appropriate representatives.
- Training: Employees involved in operating a process, maintenance and contract employees whose job tasks will be affected by the change will be notified of the change and trained prior to startup.

Appendixes and References

Typical References (may not be all inclusive)

- BLRBAC Recommended Good Practice Safe Firing of Black Liquor in Black Liquor Recovery Boilers
- BLRBAC Recommended Good Practice Safe Firing of Auxiliary Fuel in Black Liquor Recovery Boilers
- BLRBAC Recommended Good Practice Instrumentation checklist and Classification Guide for Instruments and Control Systems used in the Operation of Black Liquor Recovery Boilers
- NFPA 86 Standard for Ovens and Furnaces latest edition
- NFPA 85 Boiler and Combustion Systems Hazards Code latest edition
- NFPA 85C Prevention of Furnace Explosions/Implosions in Multiple Burner Boiler-Furnaces latest edition
- NFPA 8502 Standard for the Prevention of Furnace Explosions/Implosions in Multiple Burner Boilers latest edition
- NFPA 8503 Pulverized Fuel Systems latest edition
- Any other standard that is applicable to the intent of BMS systems as per this document.

Appendix A

Burner Management Systems (BMS) Management of Change Examples

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Example 1: **Changing a pump operating speed above or below the original operating limits.**

Operating
Parameters

Operators must have the flexibility to maintain an operation within the safe operating parameters (pressure limits, temperature ranges, flow rates, etc.). However, any intentional change or operation outside of the established control limits would require an approved **“Request for Change”**.

Example 2: **Changing the pipe internal diameter size from smaller to larger in order to achieve a higher flow capacity.**

Process
Technology

Yield or quality changes including: production rates, raw materials, catalysts, operating conditions, equipment availability, new equipment or new product development would require an approved **“Request for Change”**.

Example 3: **Substituting the original specified gasket material in a flanged connection to achieve a better seal.**

Equipment

Equipment changes including: material of construction, equipment specifications, piping pre-arrangements, valve settings and experimental equipment would require an approved **“Request for Change”**.

Example 4: **Re-routing a pipeline to allow more room for process equipment.**

Replacement-
In Kind

If materials and sizes are not changed and the new route does not affect system operation, then the **change does not require a “Request for Change”**.

Example 5: **Using an acceptable replacement pump seal as specified by the pump manufacturer.**

Replacement-
In Kind

A replacement part that meets all applicable standards and codes, is equivalent in design and function AND that is documented as acceptable by the manufacturer would be considered **“IN KIND”** and **does not require a “Request for Change”**.

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Example 6: **Constructing a mezzanine around process equipment to allow for maintenance to access the equipment.**

Replacement-
In Kind

If a new structure does not change or interfere with safe system operation, then it **does not require a “Request for Change”**.

Example 7: **Changing a timer that initiates an MFT (Main Flame Trip) if fuel supply pressure is erratic.**

Software
override due to
mechanical
issues.

If the fuel supply pressure is not within the original design parameters this is indicative of changes due to equipment malfunction or other cause. HI fuel supply pressure protection is intended to keep burners within allowable design specifications (ratings). Allowing a HI pressure for an extended period of time permits a malfunction in the fuel supply to continue operating. This is not acceptable and requires a **“Request for Change”**.

Revision History

REVISION	PAGE(S) AFFECTED	DATE	DESCRIPTION OF CHANGE
01	Pages 6 & 7 – Section VI. Flammable Atmospheres	01/08/08	1. Hot Work can only be conducted once flammable atmospheres have been eliminated. NewPage now requires air monitoring of the lower explosion limit (LEL), at a minimum, initially, for all hot work jobs conducted on site (regardless of the proximity of flammable or combustible materials). This includes contractors as well as our employees.

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Appendix B

Burner Management System (BMS) Request for Change		Department:	
Originator:	Type of Change Requested		
Date:	Permanent:	Approvals	
Description and Purpose of the Change	Temporary:	Affected Area Production Supervisor:	
	Emergency:	Date/Time:	
Affected Area E&I or Mechanical Maintenance Supervisor:			
Date/Time:			
1. Equipment/Piping		Affected Area Engineer	
2. Instrumentation/Electrical			
3. Software Programming			
4. Process Technology			

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5. Operating Procedures	<input type="checkbox"/>	Date/Time:
6.	<input type="checkbox"/>	Operations General Superintendent:
7. Project Design	<input type="checkbox"/>	
8. Other	<input type="checkbox"/>	Date/Time:
Describe the Proposed Change:		
Technical Basis for the Change:		
Describe Impact on Process or Personnel, Safety and/or Environment:		
TARGET DATE:		
INITIAL REVIEW AND APPROVAL TO PROCEED		
Name:		Date:
Originator:		Date:
Engineering Consultant Required		
Engineering Consultant Assigned To:		Date Consultant Approval Completed:
Insurance Approvals Required		
Insurance Approval Assigned To:		Date Insurance Approval Completed:
PRE-STARTUP SAFETY REVIEW		
PSSR Assigned To:		Date PSSR Completed:

DOCUMENTATION TO BE UPDATED		
Check Those That Apply:	Completion Date	Responsible for Completion
Design drawings		
Software logic		
Operating Procedures		
Emergency Procedures		
Maintenance Procedures		
Verify Design Specification		
NOTE: BMS code (BLRBAC, NFPA 86 8503 8502 85C 85		
Insurance Contact		
Contractor Employee Notification		
TRAINING/COMMUNICATION		

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Describe the Training Conducted and Date Completed:
Individual Responsible for Conducting Training:
Documentation of Training must be retained by Area Trainer
FINAL APPROVAL & Date: Originator and Area Superintendent

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