

Manual Section 7	Issue Date 06/02/13	Revision Date 06/15/21	Policy Number LLCP-089
	<b>Line Breaking &amp; Cutting</b>		

**Purpose**

To prevent injury and establish safe work practices when, breaking, cutting, connecting fittings or drilling lines of any kind while working for the Company.

**Scope**

All LLC Companies including, Blanchard Industrial, LLC, GIS Engineering, LLC, Grand Isle Shipyard, Inc., and GWIS, Mack Steel, NuWave, Sun Industries; hereafter identified as “Company”.

**Policy**

No line breaks/cuts will be performed until all requirements set forth in this document have been validated and approved by the appropriate authority, with a written and properly executed work authorization permit.

This policy applies to all Company employees and Subcontractors working for our Company, when breaking or working on any line, connected fittings, valve, pump or vessel which may contain product. The requirements of this policy are intended as mandatory minimum conditions that must be met prior to line breaking. Employees and contractors are not relieved of the responsibility for initiating higher standards when necessary for the safety of personnel and property.

**Definitions**

**Line breaking/opening** - Any activity during which normally closed systems such as pipelines, pumping systems, sight/gauge glasses, etc. which may contain process materials, are opened to atmospheric pressure by unbolting/separating flanges, removing valves, cutting pipe, opening pump covers, removing instruments or gauges, or performing hot taps.

**Hot Tap** - Penetrating a process line or vessel while in service.

**Hazardous Materials** - Any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

**Process Materials** - Process materials include, but are not limited to, corrosive liquids, slurries and gases, liquids and gases including steam, water and condensate, toxic liquids and gases, combustible, flammable or explosive liquids and gases, and hot slurries including pulp and paper stock.

**Undrained lines** - Any line or equipment system that has not been drained or flushed clear through existing drains, vents, or bleed valves.

**Cleared lines** — Lines or equipment that are drained, vented, flushed and that have been demonstrated to be clear of any hazardous residue, plugs, blockage, or pressure.

**PSM** - Process Safety Management is an analytical tool focused on preventing releases of any substance defined as a "highly hazardous chemical" by the EPA or OSHA.

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**Line Breaking Permit** - The permit that operations/maintenance (Customers or Operator in control of the property) must fill out before work begins on any line that may contain any of the process materials. This permit will be displayed in plain view, on or close to the actual line being broken.

**Authorized Representative** — The Plant Operator, or unit supervisor, with operating and safety responsibility for the area where first line breaks are to be made.

**Lockout** - Physically de-energizing and locking out a potential safety hazard in accordance with the Lockout Policy (See IHE Policy).

**Hot Work** - Any burning, welding, or cutting as defined in the Hot Work Policy.

**Cut-line tape** – The cut-line tape is a colored tape that will be installed at the immediate vicinity of tie-in points on the line during the pre-down activities. Before the cut can be made, this tag will be signed off and dated by Customer/Operator or Customer designee. The cut-line tape shall be resigned/dated for each shift cuts are to be performed.

**Line break** — Opening lines or equipment by disconnecting flanges, opening valves, breaking pipe joints, removing blanks, or opening ports and making any penetration into a line by mechanical or other means.

**Initial Tie-in Cut(s)** – The initial cut(s) on the perimeter connections of the line to be replaced or demolished, where the signed tag is placed.

**LAW** - The L.I.F.E, Analysis Worksheet is a component of the L.I.F.E. (*Behavior Based Safety Management*) process. The L.A.W. (Hazard Identification) tool is utilized to identify hazards in the work place, and should be used in the initial planning phase. This Hazard Identification Tool is Essential to identifying potential hazards and enables the development of actions and strategies to prevent incidents from occurring.

**JSEA Forms** – The Work Planning Safety Environmental Analysis (JSEA) is a component of the L.I.F.E. (*Behavior Based Safety Management*) process. The basic first step of the JSEA process is the development of sequential job steps. Work Planning is Essential to this process after which a Safety Environmental Analysis is conducted. The JSEA allows workers to identify potential hazards and risks, and remove them or plan how to mitigate them to an acceptable level.

**Stop Work Authority** – Authorization and responsibility of each and every Employee to stop any work, job, or task should he/she have any questions or concerns related to safety or risk associated with the work.

**Personal Protective Equipment (PPE)** - Any equipment or clothing which gives the wearer added protection from potential hazards. (See PPE Policy)

**Task Supervisor** — The Supervisor responsible for the crew doing the work and who is qualified by experience and training.

**Qualified Employee** – An Employee who has received training on first line break procedures has been qualified by training and experience.

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## Responsibilities

### *Operations*

- Identifying and preparing the line for breaking or cutting.
- Job pre-planning to include consulting with the appropriate Company personnel (i.e. Project Manager, Supervisor, etc.) to ensure that all special safety requirements have been addressed (i.e. >0 LEL, proper isolation, lines under pressure, etc.), and full understanding of the job task is understood.
- Issuing of the Line Breaking Permit.

### *Company Supervision*

- Ensuring that employees involved in line breaking activities have been trained as specified in Section K of this policy.
- Walk down the job with Operations to assure that all involved have a clear understanding of the line to be cut, isolation methods, and permit responsibilities
- Ensure that the cut tape and tag (if tag is required) has been applied to the proper line and it is dated and initialed prior to the start of the task (must be the same day).
- Ensuring that all employees involved have a clear understanding of the job task.
- Ensure that all employees are wearing the proper personal protective equipment for the particular job.

### *Company Employees*

- Assume the responsibilities of safeguarding the job site from operations.
- Know, understand, and follow the requirements of this policy.
- Obtain and wear the proper personal protective equipment necessary for the particular job.
- Ensure that prior to cutting any line, the appropriate cut tape is applied and has been signed and dated.
  - Cut tape is to be legibly signed and dated along with cutting performed during the same shift/permit period. All relevant permit documents must be completed and approved before cutting begins.
- Clean up work site, sign Line Breaking Permit, and notify operations when the job is complete.

### *Safety Department*

- Audit the line breaking program and review this policy annually or more frequently if needed.
- Assist departments in identifying hazards including consulting with the appropriate departments/personnel to ensure that any special safety requirements have been met. (i.e. >0 LEL, etc.)

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## Process

- A. A signed, authorized work permit will be completed before any work in the field can begin. All PPE requirements specified on the permit will be strictly adhered to.
- B. Operations personnel will confirm the correct line requiring attention by painting or marking the line. Colored tags attached (may not be required for all Customers) with wire and cut-line tape will be installed at the “initial cut points” and along the entire line that is accessible in order to identify the line to be cut. The actual contents (service) of the line prior to "breaking" will be verified.
- C. The line will be isolated, prepared, pressure relieved and drained, and locked out for personnel by operations. The line should be purged as applicable.
- D. All lines carrying hazardous materials are to be closed and locked out by the following method, whenever possible:
  1. Close and lock out the valve upstream and downstream of the work. When possible, lines are to be bled/drained between the locked out valve and pump, the bleed/drain valve left open. The supply pump should be locked out when applicable.
  2. If double valves are present, both should be closed and locked out. When possible, lines are to be bled between the double valves and the bleed valve left open and locked. When dealing with hazardous chemicals where double valves do not exist, it may be necessary to roll a spool piece out of line.
  3. Drain and pressure relieve lines as completely as possible, assuring that the drained material itself does not become a safety or environmental hazard. Prior to line breaking, precautions must be taken to assure that no adverse impact upon safety and the environment will occur from material that may discharge from the line when it is broken.
  4. Neutralize and clean up any drained or flushed fluid before proceeding. Line breaking can be dangerous and requires a clean working environment.
  5. Lines in corrosive, flammable, or hazardous material service are to be flushed or purged, prior to breaking.
  6. Obtain a Line Breaking Permit. Evaluate the conditions and locations of pipe supports and hangers. If line breaking would result in the need for some additional support, the permit should so note.
    - a. A Line Breaking Permit is to be filled out and signed by Operations before disconnecting any lines that may present a potential hazard to personnel.
    - b. The completed permit will be displayed at the job site.
- E. The operator and qualified Employees assigned to execute the task must walk the job in order to verify that the line is either blocked or isolated by physical means and completely drained, and only then complete the work permit, verifying the details with the P&IDs or ISOs.
- F. The Supervisor shall review the scope of work in detail with the employees assigned to perform the task prior to the start of any work in the field. The employees will complete the JSEA, relative to the work to be performed. Employees will have reviewed all applicable SDSs. All personnel involved must understand all chemical and physical hazards and be comfortable with the procedure to be implemented. Every effort must be used to prevent Employee exposure to chemicals.

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- G. The Supervisor and Employees executing the assigned task shall physically verify that the correct line has been depressurized, cleaned and isolated.
- H. Line Breaking - Maintenance and/or contractor personnel will check to ensure that the line breaking permit has been completed and signed by operations. Isolation valves must be checked and personal locks must be placed on the lockbox or valve with chain, in strict compliance with the Corporate IHE policy, before beginning work on the line.
- I. All personnel will be required to wear proper personal protective equipment as is customary in all circumstances when there is potential exposure to hazardous materials.
- J. Job Site Requirements and Line Breaking Guidelines: Operations is responsible for safeguarding the job site until maintenance begins work, at which time the responsibility transfers to those individuals performing the work. These steps include:
1. Reasonable steps must be taken to ensure that other persons throughout the work area will not be exposed to potential hazards and injury during line depressurization, draining, purging and/or line breaking. This is accomplished by:
    - a. Safeguarding the job site with warning signs, barricades, barricade tape or a standby person to keep others out of the area,
    - b. Allowing only people involved in the job inside the secured area,
    - c. Requiring everyone inside the secured area to use the required personal protective equipment,
    - d. Containing drains or spills, and
    - e. Safeguarding any exposure areas on lower floors.
  2. While each specific job may necessitate different ways to open process systems, the following standard steps are suggested:
    - a. Shield flanges whenever possible and the employee should stand to the side to avoid any sprays or spillage.
    - b. When loosening the bolts of flanges or covers, loosen those bolts which are farthest from the worker first.
    - c. Breaking lines containing flammable material: If a situation arises and we are unable to fully purge a line containing flammable material, fire protection equipment must be available. If possible, the line will be tested to determine the lower explosive limit of the flammable material. If the line cannot be tested and/or purged to 0% LEL, the operations superintendent/area supervisor, maintenance supervisor, and a Division Manager must be notified prior to commencement of the job.
    - d. Whenever possible, and in any case where flange or cover bolts must be cut off, at least 50% of the old bolts should be removed, one at a time, and replaced with new bolts which can be gradually backed off. This will help prevent sudden opening of the joints particularly when the joints may be under stress.
  3. Hot Taps - This procedure does not cover the additional requirements for hot taps. Hot taps require individual review and planning.

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4. Supervision will notify operations when the job is complete.
5. Operations shall remove any warning signs or barricades after job is completed and the line has been safely returned to service.
6. Operations will discontinue the permit when the job is complete.

K. Training and documentation:

1. Anyone involved in line breaking activities must be trained and show competency in the policy, procedures, and guidelines of the Line Breaking Procedure.
2. Pre-requisite training:
  - a. Lock Out Procedure/IHE
  - b. Confined Space Entry Procedure (if performing in a Confined Space)
  - c. PPE Procedure
  - d. PSM training (for covered processes)
  - e. Hot Work Procedure (if Hot Work is expected)
  - f. Respiratory Protection Procedure
  - g. Any new policies/procedures which are pertinent to line breaking but were not in effect at the revision date of this procedure.
  - h. SDS Training

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<b>Line Cutting Checklist</b>			
<i>General Requirements</i>			
Y	N	Tasks	Notes
<input type="checkbox"/>	<input type="checkbox"/>	Operations has been notified and has approved the work plan?	
<input type="checkbox"/>	<input type="checkbox"/>	All required permits have been obtained and are present at the work site?	
<input type="checkbox"/>	<input type="checkbox"/>	Client Representative has been notified and has approved the work plan?	
<input type="checkbox"/>	<input type="checkbox"/>	Work site(s) have been barricaded and tagged appropriately?	
<input type="checkbox"/>	<input type="checkbox"/>	PPE requirements have been identified and are available for use?	
<input type="checkbox"/>	<input type="checkbox"/>	LAW & JSEA completed and signed by all crew members?	
<input type="checkbox"/>	<input type="checkbox"/>	Has Operations identified the proper locations for cuts/breaks to be made?	
<input type="checkbox"/>	<input type="checkbox"/>	If Hot Work is expected, has a properly trained & equipped fire watch been assigned?	
<input type="checkbox"/>	<input type="checkbox"/>	All crew members have verifiable training or experience in their area of responsibility?	
<i>Specific Requirements For All Line Cutting Activities</i>			
<input type="checkbox"/>	<input type="checkbox"/>	If this is a demolition task, has the entire length to be demolished been identified by paint stripe, soapstone or other means, including cut-line tape?	
<input type="checkbox"/>	<input type="checkbox"/>	Has cut-line tape been attached at all cut sites, prior to first cut?	
<input type="checkbox"/>	<input type="checkbox"/>	Has preparation been made to capture and dispose of possible spilled materials?	
<input type="checkbox"/>	<input type="checkbox"/>	Has Operations and the Company Supervisor walked the line and verified ID, LO/TO, cleaning and depressurization of the line?	
<input type="checkbox"/>	<input type="checkbox"/>	P&IDs are available at the work site for the system on which the line cut will be performed?	
<input type="checkbox"/>	<input type="checkbox"/>	Potential high and low points in the piping system to be cut have been identified and the hazards addressed?	
<input type="checkbox"/>	<input type="checkbox"/>	Insulation has been stripped from within 16" of either side of the identified cut-line?	
<input type="checkbox"/>	<input type="checkbox"/>	Paint has been identified as non-lead based or has been properly abated?	
<i>Supervisor Signature</i>			
<i>Print:</i>		<i>Date:</i>	
<i>Signature:</i>		<i>Time:</i>	