



Managing Safe Work at Chevron Mining

Chevron Mining Inc.

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Managing Safe Work Handbook

The Chevron Mining Managing Safe Work Handbook is provided to assist you in safely performing your daily work assignments in support of our journey to an Incident and Injury Free (IIF) workplace where all employees go home safely to their families at the end of every shift.

This handbook provides an overview of the tools available to safely manage your work; Tenets of Operation, Stop Work Authority, Safety Programs, Safe Work Practices, Job Safety Analysis, Standard Operating Procedures, Workplace Inspections, Management of Change and Workplace Observations.

It is up to all personnel to make an assessment of the inherent risks in their work assignments using the Think Incident Free - Self Performed Safety Assessment (TIF/SPSA) procedure to determine what other tools and safeguards should be applied to safely perform the task.

Performing "***Every Task - The Right Way - Every Time***" is a personal choice requiring your commitment along with the desire and discipline to use these tools to ensure your safety and the safety of those around you.

The tools listed in this handbook are supported by OE processes, programs, practices and procedures that contain additional detail. These are available from your supervisor or OE/safety department. If you determine one of the tools in this handbook should be used, and you are not familiar with or feel comfortable applying the tool, please contact your supervisor, OE/safety department or site subject matter expert for assistance.

Thanks for performing "***Every Task - The Right Way - Every Time***",

Dave Partridge - VP, OE & Technical Services

Mark Premo - Senior VP - Operations

Fred Nelson - President

Tenets of Operation

A graphic titled "Tenets of Operation" featuring a blue header with the title in white serif font. To the right is a photograph of a white flag with the Chevron logo (a red and blue chevron) flying against a blue sky with white clouds. Below the header is a white box containing a list of 10 numbered items in a black sans-serif font. To the right of the list are two quotes in a black serif font, each enclosed in quotation marks.

Tenets of Operation

1. Always operate within design and environmental limits
2. Always operate in a safe and controlled condition
3. Always ensure safety devices are in place and functioning
4. Always follow safe work practices and procedures
5. Always meet or exceed customers' requirements
6. Always maintain integrity of dedicated systems
7. Always comply with all applicable rules and regulations
8. Always address abnormal conditions
9. Always follow written procedures for high-risk or unusual situations
10. Always involve the right people in decisions that affect procedures and equipment

"DO IT SAFELY OR NOT AT ALL"

"THERE IS ALWAYS TIME TO DO IT RIGHT"

What are the Tenets of Operation:

- The original Tenets of Operation were identified from a root cause study of Chevron's refining operations
- They are a behavioral Top Ten list of lessons learned
- Tenets emphasize high risk areas of our business. When we are not operating (behaving) in accordance with these, the probability of an event is increased
- Tenets have now been adopted as a fundamental **"Code of Conduct"** for our daily behaviors, not only for refining but for the entire company
- The Tenets have two underlying principles:
 - *"DO IT SAFELY OR NOT AT ALL"*
 - *"THERE IS ALWAYS TIME TO DO IT RIGHT"*

Requirements:

All personnel apply the Tenets of Operation as a part of their daily decision making process.

Stop Work Authority


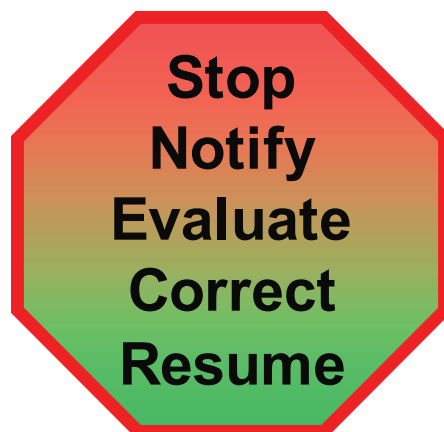
The purpose of Stop Work Authority (SWA) is to immediately stop all unsafe activities that threaten the safety and health of the workforce, put the environment in peril or create an operational incident. Stop Work Authority establishes the “authority and obligation” of any individual to stop work when an unsafe condition or unsafe act could result in an undesirable event.

Stop Work Authority uses a **Stop, Notify, Evaluate, Correct and Resume** approach to prevent incidents and establish an Incident and Injury Free (IIF) culture.

Stop Work Authority is an expression of the care and concern for and by the workforce. Stop Work Authority must be supported by everyone.

Requirements:

All personnel will apply Stop Work Authority where appropriate.



Stop Work Authority

It Is Your RESPONSIBILITY and You Have The AUTHORITY

Your Ideas and Concerns are Important

We Always comply with the Tenets of Operation shown on the reverse side of this card.

As an employee or contractor, you are Responsible and Authorized to stop any work that does not comply with the Tenets and there will be no repercussions to you.

That is our commitment to you.

Chevron Mining Inc.
Fred Nelson, President

Types of Work – Definitions

Routine Work is a work activity that takes place on a regular frequency: the employee *is always* familiar with the job steps, PPE required, potential hazards and critical actions necessary to work safely.

Non-Routine Work is a work activity that takes place infrequently: the employee *has not* performed the work often enough to be completely familiar with the job steps, PPE required, potential hazards or critical actions necessary to work safely.

Low Risk Work is a work activity that *does not* pose any unusual hazards, require special PPE, require special tools or equipment or involve activities identified as Safe Work Practices (SWPs). The employee can safely perform Low Risk Work without using special hazard assessment tools and risk management controls.

High Risk Work is a work activity that involves one or more of the following SWPs or *has inherent risks* that supervisors or workers consider high risk:

- Lockout/Tagout/Tryout - LOTO - (when not part of routine work)
- Working at Heights
- Lifting and Rigging
- Excavation and Trenching
- Confined Space Entry
- Hot Work
- Electrical Safe Work (when not part of routine work)
- Permit to Work (for work involving multiple SWPs and permits)
- Simultaneous Operations - SIMOPS (where multiple work groups interface)
- Other high risk work as identified by each business unit (BU)

Requirements:

Regardless of the work classifications described above, TIF/SPSA will be applied to all work to ensure all tasks are assessed and performed safely.

SWP / JSA / SOP - Definitions

A **Safe Work Practice (SWP)** is a single-focus procedure that describes how a specific work activity shall be managed and completed to ensure safe work. Work involving SWP activities is typically considered High Risk Work. Use of SWPs should be applied on a fit for purpose basis to manage the hazards of the work.

SWPs can be used immediately before performing High Risk Work, reviewed routinely to maintain familiarization with job hazards or used as a task training aid for new and refresher training.

A **Job Safety Analysis (JSA)** is a structured approach to identify and address the potential hazards of a specific job. A JSA considers all job steps, special PPE required to safely perform each step, the potential hazards of the work and the critical actions necessary to eliminate, reduce and manage hazards to safely do the work.

Formal JSAs are developed for Non-Routine Work or High Risk Work, on a fit for purpose basis, where a JSA will provide value in keeping employees, facilities and the environment safe.

JSAs can be used immediately before performing Non-Routine Work or High Risk Work, reviewed routinely to maintain familiarization with job hazards or used as a task training aid for new and refresher training.

Field JSAs may be developed on the spot to address Non-Routine Work or High Risk Work where a Formal JSA is not available. Once the work is completed a Field JSA may be converted to a Formal JSA if it is likely that the same job will take place again.

A **Standard Operating Procedure (SOP)** is a written step-by-step procedure for completing a given task, whether low or high risk. SOPs may include instructions related to operations, maintenance or other types of work. An SOP is used to provide a consistent approach to performing a specific task. SOPs should be referenced to identify job steps and potential job hazards when developing JSAs.

SOPs can be reviewed immediately before performing the work, reviewed routinely to maintain familiarization with job procedures or used as a task training aid for new and refresher training.

Requirements:

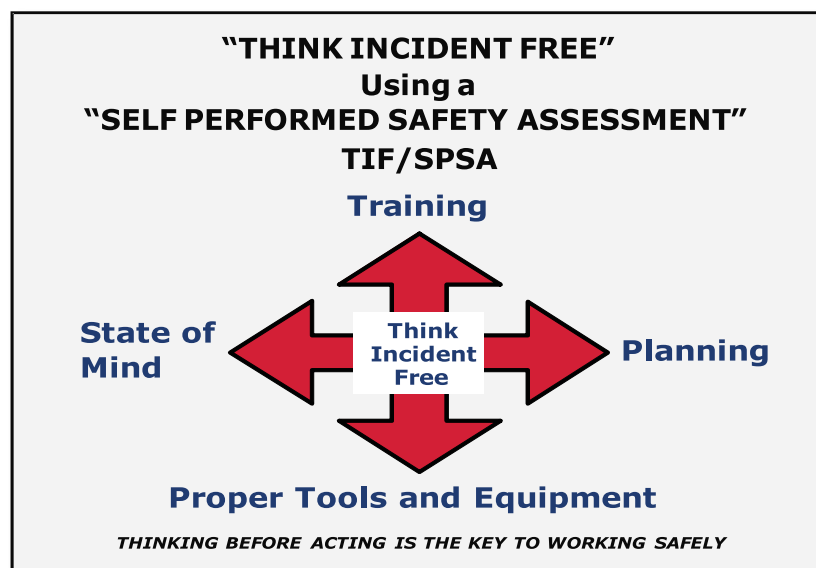
All personnel will apply the tools defined above as needed for each work activity.

Think Incident Free / Self Performed Safety Assessment

The purpose of the Think Incident Free / Self Performed Safety Assessment (TIF/SPSA) Safe Work Practice is to provide a tool to “size up the task” and ensure the work can be completed safely. It is also a re-assessment tool if there are changes to the original task.

Requirements:

1. Evaluate all tasks before starting work by reviewing and taking action on the four steps of TIF/SPSA:
 - Planning
 - Proper Tools and Equipment
 - Training
 - State of Mind
2. Use TIF/SPSA to foster an Incident & Injury Free (IIF) culture where:
 - Safety is a core value for the entire workforce
 - Our belief is “No one gets hurt”
 - Everyone goes home safely, every day
 - Everyone shows “Care and Concern” for each other




Hazard Identification Tool


The Hazard Identification Tool provides a method to identify energy sources in your work environment, their potential risks and options to eliminate the risks before work commences.





Requirements:


1. Before starting work evaluate all potential energy sources.
2. Remove the energy source if at all possible.
3. Prevent the release of energy through control of work activities.
4. Protect against the release of energy using appropriate lockout/tagout/tryout procedures.


 **Gravity** - falling object, collapsing roof, and a body tripping or falling


 **Motion** - vehicle, vessel, or equipment movement; flowing water; wind; and body positioning when lifting, straining, or bending


 **Mechanical** - rotating equipment, compressed springs, drive belts, conveyors, and motors


 **Electrical** - power lines, transformers, static charges, lightning, energized equipment, wiring, and batteries


 **Pressure** - pressure piping, compressed cylinders, control lines, vessels, tanks, hoses, and pneumatic and hydraulic equipment

 **Temperature** - open flame; ignition sources; hot or cold surfaces, liquids, or gases; steam; friction; and general environmental and weather conditions

 **Chemical** - flammable vapors, reactive hazards, carcinogens or other toxic compounds, corrosives, pyrophorics, combustibles, oxygen-deficient atmospheres, welding fumes, and dusts

 **Biological** - animals, bacteria, viruses, insects, blood-borne pathogens, improperly handled food, and contaminated water

 **Radiation** - lighting issues, welding arcs, solar rays, microwaves, lasers, X-rays, and NORM scale

 **Sound** - equipment noise, impact noise, vibration, high-pressure release, and the impact of noise to communication

Pre-Shift, Pre-Use and Planned General Inspections



The purpose of Pre-Shift, Pre-Use and Planned General Inspections is to ensure the work environment and equipment to be used is safe and in proper operating condition prior to starting work.

Pre-Shift Inspection: Inspect the work area prior to the start of the work shift or prior to the start of a job assignment. These inspections focus on identifying unsafe conditions in the work area.

Pre-Use Inspections: Personnel (typically equipment operators) perform inspections of mobile or major stationary equipment using a formal checklist to identify unsafe conditions or functional deficiencies. Other pre-use inspections should be made on all tools and equipment with a focus on unsafe conditions or functional deficiencies. This can be accomplished as a part of the TIF/SPSA procedure - Proper Tools and Equipment section.

Planned General Inspections: A routine inspection is conducted by supervision and/or union safety committees. These inspections focus on identifying unsafe conditions and less safe behaviors in the workplace.

Requirements:

1. Perform the inspections defined above per regulatory requirements and company guidelines.
2. Correct substandard conditions, functional deficiencies or less safe behaviors found during any inspection in a timely manner based on the risk identified.

Lockout / Tagout / Tryout

The purpose of the Lockout /Tagout/Tryout (LOTO) Safe Work Practice is to establish a procedure to lockout, tagout and tryout all energy sources. This isolation prevents unexpected start-up, energizing or release of stored energy.



Requirements:

1. Before personnel perform maintenance on equipment where the unexpected start-up, energizing or release of stored energy could occur and cause injury, the equipment shall be isolated, rendered inoperative and the isolation tested.
2. Locks, accompanied by a tag, are the preferred method of isolating electrical energy sources. Mechanical lockout of equipment can be achieved by locking valves, installing blind flanges, removing couplings, physically blocking out energy sources including air, hydraulic, gear drives, or suspended parts.
3. Lockout of electrical equipment must be at the main power supply because lockout of control switches may leave other portions of the equipment energized.
4. When personnel need to simultaneously perform work on equipment, each person shall be protected by a separate, individual lock.
5. Designated lockout devices shall be identified as lockout devices and shall not be used for other purposes.
6. All lockout equipment must be tagged to identify the person, date and reason for the lockout.
7. All locked out equipment shall be tried-out (tested) for start-up or release of energy before beginning work to ensure the energy source is properly isolated.
8. Each lockout device shall be removed by the person who applied the device.
9. Before lockout devices are removed, the person who applied the lockout device shall inspect the work area to ensure equipment is operational, housekeeping is in order, and all affected personnel are notified and safely positioned.

Manual Material Handling



The purpose of the Manual Material Handling (MMH) Safe Work Practice is to eliminate, reduce, avoid and/or control potential risks and exposures associated with the manual handling of materials.

Requirements:

1. Train personnel so they understand Manual Material Handling exposures and proper material handling techniques and have the ability to make safe decisions when faced with these exposures.
2. Whenever possible address Manual Material Handling exposures in the following order:
 - Eliminate the need to manually handle materials
 - Avoid the need to manually handle materials
 - Reduce the exposure with proper tools and equipment
 - Control the exposure with proper material handling techniques
3. Reduce repetitive motion Manual Material Handling exposures by rotating job assignments.
4. Perform workplace observations to ensure that efforts are being made to eliminate, avoid, reduce and control Manual Material Handling exposures.

Hand Safety Program

The purpose of the Hand Safety Program is to promote awareness of hand injury risks and hand safety. Historically, hands are the most frequently injured body part in Chevron Mining.



The program:

- Provides tools to promote awareness of hand safety and hand protection
- Provides special glove types for various high risk activities
- Provides alternate cutting devices to replace folding and straight blade knives
- Encourages sharing of best practices across the company to reduce the frequency and severity of hand injuries

Requirements:

1. Train personnel so they understand Hand Safety exposures and have the ability to make safe decisions when faced with these exposures.
2. Use special glove types for high risk cutting activities.
3. Use alternative cutting devices instead of straight blade knives.

Detailed information on the Hand Safety Program can be found on the Chevron Mining Web Site or obtained from your local OE/safety department.

Working at Heights



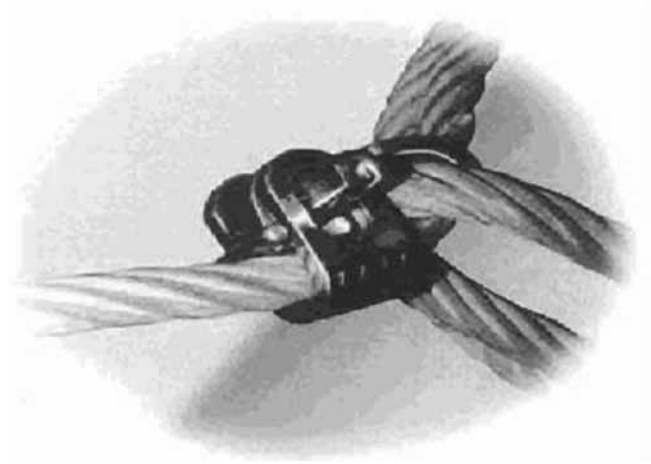
The purpose of the Working at Heights Safe Work Practice is to ensure that work at heights is performed in a safe and controlled manner by establishing safeguards to remove fall potential and prevent falls.

Requirements:

1. Exhaust all work-at-grade alternatives before beginning working at heights.
2. Hazards associated with working at heights shall be identified and mitigated prior to beginning work.
3. Fall hazards must be identified and personnel must be protected by fall prevention or fall protection systems.
4. Working at heights equipment must be inspected periodically to ensure that it is in good condition and safe to use.
5. Persons wearing fall-arrest systems must use 100 percent tie off and must not work alone.
6. Scaffolding must be designed, erected, inspected, labeled and dismantled by competent persons.
7. Rescue personnel must be trained and competent at high-access rescue techniques, have the ability to perform their responsibilities, have the correct rescue equipment at the work location and have a rescue plan in place before any Work at Heights begins.

Lifting and Rigging

The purpose of the Lifting and Rigging Safe Work Practice is to ensure that lifting and rigging work (either horizontally or vertically) is performed in a safe and controlled manner.



Requirements:

1. Hazards associated with horizontal or vertical lifting and rigging shall be identified and mitigated prior to beginning work.
2. Personnel must complete the steps necessary to properly and safely prepare the job site and equipment before the start of work. (i.e. develop lift plan if required for non-routine or heavy lifts)
3. Ensure lifting and rigging equipment is certified for use and in good working order through pre-use inspections.
4. Confirm the weight of the object and ensure all the equipment can safely handle the load.
5. Establish the loads center of gravity and appropriate balance point for lifting and placement.
6. Rig loads appropriately and ensure loads are free of possible restraints prior to the beginning of the lift.
7. Use tag lines to control loads when appropriate.

Excavation and Trenching



The purpose of the Excavation and Trenching Safe Work Practice is to ensure that excavation and trenching work is performed in a safe and controlled manner.

Requirements:

1. An excavation and trenching permit is required whenever work is conducted that may adversely affect the health, environment, safety, efficiency, or reliability of personnel or assets.
2. Hazards associated with excavations shall be identified and mitigated prior to beginning work using the TIF/SPSA procedure or an excavation and trenching permit.
3. Complete the steps necessary to properly and safely prepare the jobsite and equipment for the start of work.
4. Protect personnel who enter excavations by using support systems (e.g., shoring, bracing, sloping, benching, or shields). Only qualified persons may design and construct excavation support systems.
5. Inspect excavation shoring or bracing systems daily, prior to the start of each shift and after any significant hazard-increasing event such as rainstorm, snowstorm, earthquake, etc.
6. Cease all work in the excavation if conditions change until the situation is evaluated and any necessary precautions have been taken to safeguard personnel.
7. Guard, barricade and label excavation sites to avoid inadvertent access.

Confined Space Entry

The purpose of the Confined Space Entry Safe Work Practice is to ensure the safety of personnel entering the two types of confined spaces: **"Confined Space"** and **"Permit Required Confined Space"** (PRCS). The difference between the two types of confined spaces is the degree of hazard and requirements for entry.



A **"Confined Space"** is defined as a space that has limited or restricted means for entry or exit and it is not designed for continuous employee occupancy. Confined spaces include, but are not limited to, underground vaults, tanks, storage bins, manholes, pits, silos, process vessels, and pipelines.

A **"Permit Required Confined Space"** (PRCS) is defined as a confined space which could exhibit any of the following hazards:

- Contains, or has a potential to contain, a hazardous atmosphere
- Contains a material that has the potential for engulfing an entrant
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section
- Contains any other recognized serious safety or health hazard

Requirements:

1. Each BU will evaluate the workplace to determine if any spaces are Permit Required Confined Spaces and inform employees who could be exposed by posting signs and providing training.
2. PRCS entry will be controlled by a Confined Space Entry Permit.
3. For non-permit required Confined Spaces, applicable sections of the Confined Space Entry Permit will be used based on the inherent risk.

Hot Work



The purpose of the Hot Work Safe Work Practice is to enable hot work to be performed with mitigation in place to address all risks that could cause incidents (fires or explosions) or injuries.

Requirements:

1. A Hot Work Permit must be developed prior to initiating any work activity that introduces an ignition source to a job site that has the potential for ignition of flammable materials or vapors.
2. Personnel performing work shall be trained and responsible to recognize Hot Work situations, request a Hot Work Permit (HWP) when required and use Stop Work Authority should a Hot Work situation arise during work.
3. Hazards associated with Hot Work shall be identified and mitigated prior to beginning work.
4. Before Hot Work is initiated, a Hot Work Permit must be completed along with the steps necessary to properly and safely prepare the jobsite and equipment for the start of work.
5. Stop all Hot Work if a hazardous situation is identified and restart only after the necessary precautions have been taken to safeguard personnel and assets.

Electrical Safe Work



The purpose of the Electrical Safe Work Practice is to provide guidance in safely performing electrical work to ensure employees who work on or near electrical equipment identify, assess and comply with the requirements for performing electrical work.



Requirements:

1. Maintain electrical systems and electrical equipment in a safe condition.
2. Electrical work will only be performed by qualified electrical personnel.
3. All individuals performing electrical work must have clearly defined roles. When selecting personnel for electrical work, consideration should be given to their level of experience.
4. Persons who perform electrical work at coal mines are required to receive annual electrical refresher training approved by the Mine Safety and Health Administration.
5. Persons who perform electrical work at metal/non-metal mines are required to receive training as specified by the regulations in the State where the mine is located.
6. Electrical training should be site specific and attended by persons in charge of electrical workers as well as persons who perform the work.
7. Persons performing electrical work will use the appropriate specialized PPE as warranted by the risk level of the work.

Permit to Work



The purpose of the Permit to Work (PTW) Safe Work Practice is to provide a procedure that ensures work permits are used when necessary to safely manage work with mitigation in place to address all risks that could cause incidents or injuries.

Requirements:

A Permit to Work must be developed before starting any work that requires the use of multiple work permits as identified by the safe work practices listed below. This ensures that risks from individual safe work practices and permits are coordinated under an umbrella Permit to Work.

- Hot Work Permit
- Confined Space Work/Entry Permit
- Excavation Work Permit
- Working at Heights Permit
- LOTO - Stored Energy Permit (high voltage work)
- Lifting and Rigging (permit required for heavy or specialized lifts)
- Electrical Work (permit required for specialized high voltage work)
- Other BU specific permits or safe work practices considered appropriate by the work supervisor or worker

Simultaneous Operations

The purpose of the Simultaneous Operations (SIMOPS) procedure outlined in the Permit to Work Safe Work Practice is to identify situations where Simultaneous Operations are taking place and, if deemed appropriate, develop a Permit to Work to assist in coordinating activities between work groups.



Examples of potential SIMOPS situations are listed below:

- Construction work in an operating area
- Contractors working with or among employees
- Multiple contractors working on a project
- Multiple departments working on a project
- Startup of a new system within an existing operating area
- Turnover of a project from a contractor or department to operations

Requirements:

1. A Permit to Work should be issued when Simultaneous Operation situations arise where close coordination between work groups is beneficial.
2. The person in charge of the operating area or project where the work is being performed will determine if a Simultaneous Operations - Permit to Work will add value in coordinating and completing the work in a safe and controlled manner.

Management of Change



The purpose of the Management of Change Process (MOC) Process is to provide a standard process for managing change that considers the effects of a change on safety, environment, health, reliability and efficiency. The process is designed to ensure all change activities (operational, organizational and business process) are reviewed, approved, communicated and documented to eliminate the likelihood of incidents prior to, during and following the change.

For the purposes of the MOC process, a change is defined as a deviation from an existing condition (operational, organizational or business process) and includes changes by the introduction of new equipment or conditions, modified equipment or conditions, new or modified ways of operating, significant organizational or significant business process modifications. MOC changes can be permanent, temporary or emergency.

Requirements:

1. If the work you are undertaking falls into a Management of Change category, contact your supervisor and site subject matter expert for guidance.
2. Use the MOC procedure flow chart and forms to develop the information and actions required to properly address a change.
3. Implement the actions identified during the MOC procedure to ensure the change happens in a safe and controlled condition.
4. Communicate changes to those personnel impacted by the change.
5. Document all changes, including updates to any facility information. (drawings, electrical diagrams, flow diagrams, P&ID's, etc.)

Workplace Observation Program

The purpose of the Workplace Observation Program, commonly referred to as IIF in Action or Behavioral Based Safety, is to provide a fundamental system for protecting employees' safety using behavior-based methods that:

- Maximize use of positive reinforcement, such as praising and rewarding the use of "More Safe" behaviors
- Emphasize proactive activities, such as identification of "At-Risk or Less-Safe" behaviors
- Capitalize on the job expertise of employees
- Integrate workplace observations with daily business activities
- Practice "providing direction from the top down while solving problems from the bottom up"
- Maximize sharing of lessons learned and best practices throughout the organization

Requirements:

1. Each BU will have a BBS or IIF in Action program.
2. All employees will be trained in the purpose and use of the program.
3. BUs will track, analyze and report monthly the number of observations, more safe and less safe behaviors.
4. Based on the observation data, BUs will identify and implement behavior improvement activities.



Operational Excellence

Operational Excellence is the systematic management of safety, health, environment, reliability and efficiency to achieve world-class performance.

OE Vision

To be recognized and admired by industry and the communities in which we operate as world-class in safety, health, environment, reliability and efficiency

OE Objectives

- Achieve an injury-free work place.
- Promote a healthy workplace and mitigate significant health risks.
- Eliminate spills and environmental incidents. Identify and mitigate key environmental risks.
- Operate incident-free with industry-leading asset reliability.
- Maximize the efficient use of resources and assets.



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