Golden Rule #6: Confined Spaces

Only enter a confined space if you are trained, qualified and authorized and after having reviewed the permit.
Golden Rule #6 – Confined Spaces

Only enter a confined space if you are trained, qualified and authorized and after having reviewed the permit.

- Confined spaces are defined as fully or partially enclosed areas that are not designed for continuous human occupancy and where atmospheric hazards may occur. Work in confined spaces should be performed when all other means of performing the work has been eliminated.

- Planning for a Confined Space entry is required to ensure that all risks are controlled. Planning will include:
  - Identification of all energy sources and process line entry points requiring isolation.
  - Testing and understanding the control of atmospheric conditions prior to and during the work that will be performed.
  - Having a tested rescue plan defined.
  - Acquiring all necessary rescue equipment and setting it in place.
  - Establishing a means of communication between those working in the confined space and those providing rescue.
  - Completing the entry procedure and entry work permit.
Golden Rule #6 – Confined Spaces

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- Confined space work requires specific training for people who will be working in and providing monitoring and rescue support.

- An understanding of the hazards associated with the vessel or area and how the work that is being performed might alter or add additional hazards that require control is required by those who are establishing work requirements.

- Atmospheric conditions in a confined space must be monitored throughout the period of work to identify any changes that may create a hazard. Should changes occur, the work is to be stopped and a complete reassessment performed before any further entry and work takes place.

- All persons working in a confined space will require a body harness and lifeline in order for an external rescue to be performed. Additional precautions (such as the requirement for breathing, acid/caustic resistant suiting, spark resistant tools) will be defined prior to entry.
Golden Rule #6 – Confined Spaces

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- A support rescue person (guard) is to be stationed immediately outside of a confined space at all times to monitor the work that is taking place and mobilize in the event of a rescue situation.

- Communication mechanisms must be established between the confined space workers and the support rescue person (guard) as well as between on site first aid resources to initiate medical assistance if required.

- Regular communication between the guard and the workers is to occur to monitor the activity.

- All rescue equipment is to be assembled, inspected and in place at the confined space prior to an entry taking place.
Golden Rule #6 – Confined Spaces

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The following key questions are suggested for management who must provide the supporting systems for risk control for confined space entry.

Has a confined space program been established which identifies the confined spaces on site and their related hazards?

Has all necessary equipment for personal protection, confined space rescue equipment, atmospheric monitoring devices, and means of communication been acquired for confined space entry?

Have formal programs been established to ensure the required competence of those who will be assigning confined space work, performing work in confined spaces and performing rescue support?

Have confined space procedures been implemented, validated and kept current for confined space entries?

Has a formal confined space permit process been defined?
Golden Rule #6 – Confined Spaces

Only enter a confined space if you are trained, qualified and authorized and after having reviewed the permit.

The following key questions are suggested for a supervisor who may have to assign critical task work.

Do I understand the nature of the potential hazards associated with work in the confined space in order to effectively plan for the entry?

Have I ensured that the risks associated with executing the work in the confined space have been defined and have been shared with the persons doing the work?

Have I checked that the persons doing the work are trained, qualified and able to do the confined space work?

Have I made sure that all necessary personal protective equipment, monitoring devices, rescue equipment, communication devices, procedures are in place to perform the confined space work safely?

Have I ensured that the confined space work permit has been completed before the work proceeds?
Golden Rule #6 – Confined Spaces

Only enter a confined space if you are trained, qualified and authorized and after having reviewed the permit.

The following key questions are suggested for an employee who may have to perform work in a confined space.

Do I know the risks associated with executing work in the confined space?

Have controls to manage the confined space entry risks, including a tested rescue plan, been defined and shared with me?

Do I have the appropriate knowledge to perform the work in the confined space?

Has all necessary confined space personal protective, monitoring and rescue equipment been provided and reviewed with me?

Do I have authorization to proceed with the confined space work? (Confined Space Permit)
Golden Rule #7: Surface and Underground Mining

Only enter areas that you are authorized to do so.
Golden Rule #7 – Surface and Underground Mining

Only enter areas that you are authorized to do so.

- Mining area conditions and activities can pose various types of potentially hazardous situations that must be effectively managed to provide control. Examples of these hazards include:
  1. Underground mining areas:
     - being prepared for blasting.
     - where ground has not yet been supported.
     - where air conditions may not be suitable for unprotected entry.
     - of accumulated water in drifts or material hang-ups that can pose risk.
  2. Surface mining areas:
     - being prepared for blasting.
     - where open pit bench and wall areas are potentially unstable.
     - at the base of stockpile draw-points that can become unstable.
     - where mine excavation / trench walls are not yet supported.

- Areas that pose these hazards require the need to restrict access in both surface and underground mining areas so that risks can be assessed and managed appropriately by people who are qualified and authorized to work in the area.
Golden Rule #7 – Surface and Underground Mining
Only enter areas that you are authorized to do so.

- Restricted areas must be barricaded, applying established site standards, and clearly marked as a restricted area.
- A formal authorization process must be in place for any access to a restricted area.
- Entry must never be made to a restricted area without authorization, an understanding of the potential hazards and the mechanisms to protect a person from harm if entry is approved.
- A common risk for both underground and surface mining entails the risks associated with stability of ground and slopes.
- Engineering standards must be established at the sites with specific control definitions related to how to support and maintain ground / slopes.
- Persons qualified to determine the stability of ground / slopes must assess areas of development and provide approval prior to work proceeding.
- Only trained and authorized persons, who understand slope stability, can work in areas where related hazards exist.
Another common risk for both surface and underground mining operations is related to hazards associated with the use of explosives for blasting. The use of explosives requires strict controls in order to minimize risk.

A program must be established at each site that accounts for the inventory of explosives that are stored and used in the blasting process. Access to explosives is to be strictly managed. Persons who handle explosives must be trained and qualified to do so. Precautions must be made for the handling of explosives and during the blasting process that include:

- The elimination of anything that may create a spark or flame.
- Ensuring ground support meets required standards prior to loading.
- A process for evacuation any area being blasted.
- Performing a check of the blasted material for potential misfires once the blast is complete and the area is safe to enter.
Golden Rule #7 – Surface and Underground Mining

Only enter areas that you are authorized to do so.

The following key questions are suggested for management who must provide the supporting systems for risk control for accessing mining areas.

Has a formal program been implemented to manage authorized access to restricted areas in mining areas that include the criteria for limited entry?

Have formal explosive use management programs been established that include the process for storage, inventory management, proper handling precautions and the blasting process?

Have formal slope / ground stability management programs been established including the requirement for geotechnical assessments?

Have formal programs been established to ensure the required competence of those who will be handling explosives, assessing and managing mining area slope / ground integrity, and those who will be authorized to work in them?

Has all equipment necessary to assess and manage mining area hazards been acquired and made available?
Golden Rule #7 – Surface and Underground Mining

Only enter areas that you are authorized to do so.

The following key questions are suggested for a supervisor who may have to assign critical task work.

Do I understand the potential hazards associated with work in mining areas that might include ground/slope stability, explosives handling, blasting processes and areas of accumulated/entrained water?

Have I ensured that required assessments of the mining area infrastructure and atmosphere is appropriate to allow authorized access.

Have I ensured that the risks associated with executing the work in restricted mining areas have been defined and have been shared with the persons authorized to do the work?

Do I know the criteria for authorizing persons to enter a restricted mining area and have I checked that the persons doing the work are trained, qualified and able to do the work?

Have I made sure that all necessary personal protective equipment, monitoring devices, communication devices, procedures are in place to perform the work in the restricted mining area safely?
Golden Rule #7 – Surface and Underground Mining

Only enter areas that you are authorized to do so.

The following key questions are suggested for an employee who may have to perform work in mining areas.

Do I know what constitutes a restricted working area, how it is marked and why I must not access them without authorization?

If authorized to do so, do I know the risks associated with executing work in restricted areas that might include ground/slope stability, explosives handling, blasting processes and areas of accumulated/entrained water?

Have the hazards and procedures / controls associated with work in a restricted area been defined and reviewed with me?

Do I have the appropriate knowledge to safely perform the work in the mining area as assigned?

Has all necessary personal protection and other equipment been provided and reviewed with me to perform the work safely?
Golden Rule #8: Equipment Safeguarding

Only trained and qualified personnel may alter equipment safeguards after having received authorization.
Golden Rule #8 – Equipment Safeguarding

Only trained and qualified personnel may alter equipment safeguards after having received authorization.

- Operations process equipment are installed with safeguards designed to restrict a person from being exposed to an energized or moving source. Generally, there are two main categories of equipment safeguarding applied to limit exposure while equipment is operating.
  1. Physical equipment guarding such those for:
     - rotating shafts.
     - moving belts.
     - moving sections of automatic equipment.
  2. Instrumented interlocks to de-energize equipment such as:
     - emergency stop buttons / pull cord stops.
     - infrared interruption beams.
     - limit switches for lifting and conveyance devices.
     - electrically switched gates / guards / hoods / brakes.

- Unless required and authorized to do so under controlled conditions, no-one is allowed to remove or disable an equipment safeguard device.

Safeguarding to Remain Intact

Equipment Safeguarding

Physical Equipment Guarding

Interlocked Equipment Safeguarding
Golden Rule #8 – Equipment Safeguarding

Only trained and qualified personnel may alter equipment safeguards after having received authorization.

- Equipment and systems are not to be operated without safeguarding in place and in working order.

- Regular inspection and maintenance of safeguarding will consist of:
  - Routine inspections of mechanical safeguarding.
  - Scheduled planned testing of interlock safeguard devices.

- Circumstances will occasionally require that equipment is maintained and adjusted as it operates. This can mean a planned disabling of safeguarding devices. If this is the only means of performing and testing equipment adjustments, the work will be considered a non-routine critical task that will require:
  - A formal hazard analysis.
  - The development of a formal procedure, reviewed just prior to performing the work.
  - Trained and qualified maintenance employees to perform the work.
  - Formal authorization to execute the work.
Golden Rule #8 – Equipment Safeguarding

Only trained and qualified personnel may alter equipment safeguards after having received authorization.

The following key questions are suggested for management who must provide the supporting systems for risk control for accessing mining areas.

- Have equipment safeguarding standards been implemented to restrict exposure to moving equipment?
- Has all necessary safeguarding of equipment been acquired and installed to protect personnel from coming into contact with live equipment?
- Have formal programs been established to ensure that those who are operating equipment understand the purpose of safeguarding, know how it is to be used, and do not disable or alter it in any way?
- Has a requirement been established to routinely inspect the condition and functionality of the safeguards that are installed on equipment?
- Has standard been developed outlining the requirements for planned disabling of safeguards to perform maintenance adjustments?
Golden Rule #8 – Equipment Safeguarding

Only trained and qualified personnel may alter equipment safeguards after having received authorization.

The following key questions are suggested for a supervisor who may have to assign critical task work.

Do I understand the nature of the potential hazards associated with unguarded machinery and personnel disabling safeguarding?

Have I checked that the persons who operate equipment with safeguarding requirements are aware of their purpose and that equipment is not operated without them in place?

Where maintenance adjustments to equipment require the temporary disabling of localized safeguarding, have I ensured:

- that a formal hazard analysis has been performed?
- that a procedure has been developed with controls based on the hazard analysis and that is has been reviewed with those who will be doing the work?
- Maintenance persons performing the work are familiar with the equipment and the work required?
Golden Rule #8 – Equipment Safeguarding

Only trained and qualified personnel may alter equipment safeguards after having received authorization.

The following key questions are suggested for an employee who may be operating equipment with safeguards in place.

Do I know how the equipment safeguards work, how to use them to protect myself and how to inspect them for functionality?

Do I ever operate equipment without a safeguard in place?

The following key questions are suggested for an employee who may be performing maintenance adjustments on operating equipment that would require the temporary planned disabling of a safeguard.

Has a formal procedure been planned based on a hazard assessment and shared with me prior to performing the work?

Have the contingencies necessary to protect my safety when adjusting operating equipment without safeguarding been established?

Do I have authorization to proceed with the maintenance work?
Golden Rule #9: Chemical & Hazardous Substances

Only handle hazardous substances in accordance with prescribed controls.
Golden Rule #9 – Chemical & Hazardous Substances

Only handle hazardous substances in accordance with prescribed controls.

- The nature of chemical and hazardous substances must be clearly understood and managed appropriately to reduce the risks associated with handling them in the workplace. The management program for these types of materials must include:
  - A means of visibly identifying chemicals / hazardous substances in the workplace.
  - The provisions of material safety information.
  - The provision and identification of designated storage areas.
  - A means of establishing, updating and sharing inventories.
  - Handling / storage / disposal procedures and precautions.
  - Provision of area and personal protective equipment for handling.
  - Emergency measures procedures, processes and equipment.
Golden Rule #9 – Chemical & Hazardous Substances

Only handle hazardous substances in accordance with prescribed controls.

The following key questions are suggested for management who must provide the supporting systems for risk control for handling chemicals and hazardous substances in the workplace.

Is there a program in place to identify and make available all pertinent material safety information related to the handling of chemicals and hazardous materials in the workplace, including storage and disposal?

Is there a program in place to provide identification and account for inventories of chemicals & hazardous substances in the workplace?

Have handling / disposal processes and storage facilities been evaluated and subsequently defined using a formal risk analysis?

Has all necessary equipment for substance handling, personal protection equipment, emergency measures material/equipment been acquired and availed for use in the workplace?

Have formal programs been established to ensure the required competence of those who will be handling chemicals and hazardous substances and those who may be required to respond to an emergency situation?
Golden Rule #9 – Chemical & Hazardous Substances
Only handle hazardous substances in accordance with prescribed controls.

The following key questions are suggested for a supervisor who may oversee handling work with chemicals and hazardous substances in the workplace.

Do I understand the potential hazards associated with chemicals and hazardous substances that are applied in the workplace?

Have I ensured that the risks associated handling chemical and hazardous substances in the workplace have been defined, are readily available and have been shared with the persons doing the work?

Have I checked that persons are trained, qualified and able to handle the chemicals and hazardous materials associated with their work?

Have I made sure that all necessary personal protective equipment, emergency measures material/equipment and procedures are in place to handle chemical and hazardous substances used in my area?

Have I ensured that there contingent emergency plans are able to be initiated in the event of a spill or exposure?
Golden Rule #9 – Chemical & Hazardous Substances

Only handle hazardous substances in accordance with prescribed controls.

The following key questions are suggested for an employee who may have to handle chemicals and hazardous substances in the workplace.

- Do I know the risks associated with any of the chemicals or hazardous materials that I may have to handle in my workplace?
- Have controls to identify and manage risks associated with handling and exposure to chemicals and hazardous materials, including emergency actions, been defined and shared with me?
- Do I have the appropriate knowledge to handle chemicals / hazardous materials and I know what to do in the event of an emergency situation?
- Has all necessary personal protective, and emergency measures, equipment been provided to me and their appropriate use reviewed?
- Do I have authorization to proceed with work that includes the handling of chemicals and hazardous substances?
Golden Rule #10: Management of Change

A management of change assessment must always be conducted before implementing any temporary or permanent change to process, equipment or facility.
Golden Rule #10 – Management of Change

A management of change assessment must always be conducted before implementing any temporary or permanent change to process, equipment or facility.

- Management of changes that occur in the workplace must be performed in order to manage risk. Whether a change is on a large or a small scale, permanent or temporary, it will need to be evaluated for its impact on the management of risk in the workplace.

- Recognition of what constitutes a change is the key to the success of the program to consistently manage risk. For example, a change to a set-point target in a process system outside of the design criteria may have as much or more impact on risk as an entire change of equipment. It must be recognized that both of these situations require an analysis of risk and subsequent controls put in place.

- Change can apply to:
  - Facilities : Building Infrastructure
  - Processes : Operations Processing
  - Equipment : Any equipment installed at a site.
Golden Rule #10 – Management of Change

A management of change assessment must always be conducted before implementing any temporary or permanent change to process, equipment or facility.

- Management of change must be managed by formal programs that have a structured means to evaluate the risk and identify the actions required to implement required controls. Each site must have a structured program in place for this purpose.

- Teams of people who are well versed with the execution of the structured management of change (MoC) program must be developed at the site.

- Involvement of a cross-section of people, with varying background, including those who do the work should be involved with the MoC assessment.

- A process will be required for final approval of each MoC.

- A tracking mechanism is required for actions plans arising from the analysis so that necessary controls are implemented before the change is made.

- An audit process will be required to determine the effectiveness of a change once it has been made.
Golden Rule #10 – Management of Change

A management of change assessment must always be conducted before implementing any temporary or permanent change to process, equipment or facility.

The following key questions are suggested for management who must provide the supporting systems for management of change in the workplace.

Is there a program in place designed to identify, evaluate and assess the various types of change that can have an impact on workplace safety risk?

Have the criteria for initiating, executing and approving the management of change process been defined?

Are there programs in place to familiarize people with what constitutes a change, the management of change process and development of people in the effective execution of the MoC process?

Is a system in place to track management of change initiatives and action items that must be complete before a change is allowed to be implemented?

Is there a process in place to determine the effectiveness of a change once it has been implemented?
Golden Rule #10 – Management of Change

A management of change assessment must always be conducted before implementing any temporary or permanent change to process, equipment or facility.

The following key questions are suggested for a supervisor who will work with his team to identify and help manage a change.

Do I understand the requirements of the management of change program and my role in the process?

Have I ensured that the risks associated with any proposed change in workplace systems, processes or equipment have been assessed, controls defined and approved before it is implemented?

Have I checked that persons are trained and familiar with the management of change process and that they understand what constitutes changes in their workplace?

Have I made sure that all necessary information and resources are made available to effectively analyze a change that will be applied in the workplace?

Have I ensured that there is follow-up regarding the effectiveness of the change once it has been implemented?
Golden Rule #10 – Management of Change

A management of change assessment must always be conducted before implementing any temporary or permanent change to process, equipment or facility.

The following key questions are suggested for an employee who may have to handle chemicals and hazardous substances in the workplace.

Do I know what constitutes a change so that I recognize when a management of change process should be applied?

Have I received background training on what the management of change process is and how it is to be applied?

Are planned temporary or permanent changes that affect my work area communicated with me before they are implemented?

Am I or other members of my team given the opportunity to contribute to a change that will directly affect our work?

After a change has been implemented, am I consulted to determine how effective the risk controls associated with the change have been?