PERU LNG

Environment, Social, Health and Safety (ESHS)
Management System (MS)

Hazard Assessment and Risk Management

Document Number:

02/HS/PJ/PR/001/A02

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1.0 INTRODUCTION

The protection of company and non-company personnel from injury and occupational disease is a prime responsibility of Peru LNG S.R.L. Management. This responsibility must be included with product quality and production and project implementation considerations.

Peru LNG S.R.L. Management will provide equipment, procedures, and training for the safe execution of work and will create a climate that encourages worker participation in the development, implementation, and support of safety programs. Every worker is expected to follow established "controls" as identified for specific tasks and jobs.

> **Note:** With direct involvement, workers can provide valuable insight about how they perform their jobs safely and efficiently. By assisting in the development of procedures for their own work, the quality and usefulness of procedures improves considerably. As a result, worker commitment and ownership are created.

2.0 PURPOSE

Hazard assessments determine or evaluate health, safety and environmental hazards on the work site and potential equipment or production losses associated with specific tasks. They are designed to protect personnel from injury and/or occupational disease. Every worker has the right and responsibility to refuse unsafe work.

By conducting hazard assessments for projects and new/existing tasks, the hazard assessment process identifies appropriate controls and manages associated risks. Often, hazardous situations are identified during pre-job safety meetings or task discussions.

3.0 DEFINITIONS

Common terms used in analyzing work tasks and developing safe work procedures include the following:

Hazard: Source or situation with harm potential in terms of human injury or ill health, damage to property, damage to work place environment, or a combination of these.

Hazard Identification: Process of recognizing that a hazard exists and defining its characteristics.

Practice: A set of guidelines or key points that do not need to be performed sequentially (i.e., changing a tire). They provide assistance in performing a specific task.

Procedure: A step-by-step sequence of actions that must be carried out to complete a specific task (i.e., Step 1 must be completed before going to Step 2).

Responsible Operating Guideline (ROG): A guide (prevailing standard) that is not site specific yet gives direction to a specific task to ensure the safety of personnel and equipment. If the task requires a deviation from the ROG then a 'Written Hazard Assessment' must be completed for the specific task.

Risk: A combination of probability and consequence(s) of a specified hazardous event occurrence.

Task: Is the specific sequence of steps, actions, or activities a worker must perform to complete their job or work assignment (e.g., driving a vehicle).

Training: Is the act or process that meets a specific requirement to verify competency.

Examples of training include the following:

- Trade certification,
- Operator training program,
- Skill training,
- On-the-job training (proper operating practice),
- Procedure use, and
- Personal protective equipment (PPE) use.

4.0 CHARACTERISTICS OF RISK MANAGEMENT

Risk management is an activity which integrates the recognition of risk, strategies to manage it, and mitigation of risk using managerial resources. The strategies include avoiding the risk, reducing the probability of occurrence, reducing the negative effect of the risk, or accepting some or all of the consequences of a risk. However, the most common objective of risk management is to reduce risks to a level accepted by the organization or employees.

The most common definition of risk is: Risk = Probability x Consequences. It can also be defined as a feasible detrimental outcome of an activity or action. In Risk Assessment (RA), risk is therefore characterized by two parameters:

1. the severity of the possible adverse consequence(s), and
2. the probability of occurrence of each consequence.

Consequence is typically expressed quantitatively (e.g., the number of people potentially hurt or killed). Their likelihoods of occurrence are expressed as probabilities or frequencies (i.e., the number of occurrences or the probability of occurrence per unit of time). The total risk is the sum of the products of the consequences multiplied by their probabilities.

Risk Assessment usually answers three basic questions:

1. What can go wrong during an activity, or what are the initiators or initiating events (undesirable starting events) that lead to adverse consequence(s)?

2. What and how severe are the adverse consequences that the activity may be eventually subjected to as a result of the occurrence of the initiator(s)?

3. How likely to occur are these undesirable consequences, or what are their probabilities or frequencies?

The Risk Assessment process need not be overly complicated[1]. In the oil and gas industry, the risks are well known and the necessary control measures are typically easy to apply. The assessments are typically performed by engineers, managers, supervisors and other staff who are very familiar with work objectives, activities, equipment, materials, worker functions, and Safe Systems of Work. Most RAs and are semi-quantitative.

The following process is typically applied:

Step 1: Identify the hazards.

Step 2: Decide who might be harmed and how.

Step 3: Evaluate the risks and decide on precautions.

Step 4: Record findings, communicate and implement them.

Step 5: Review the assessment and update it if necessary.

The specific methods employed by PERU LNG are described below.

5.0 SITUATIONS WHERE RISK ASSESSMENT IS NOT APPROPRIATE

Situations where risk assessment is not appropriate include:

1. **When the probability of happening is close to 100% and the consequence is well known.**

If it is known that a pipe has corroded to a thickness below an acceptable minimum and will start leaking soon, it is known that the probability of an accident occurring is certain. Likewise, if it is known that the leak will only cause minor soil contamination (and nothing else), the consequence is also certain. In such cases, risk assessment may not be appropriate; but a preventive maintenance program based on cost-benefit analysis would be more appropriate.

2. **When there is non-compliance of government regulations.**

Risk assessment should never be used to justify an out-of-compliance situation.

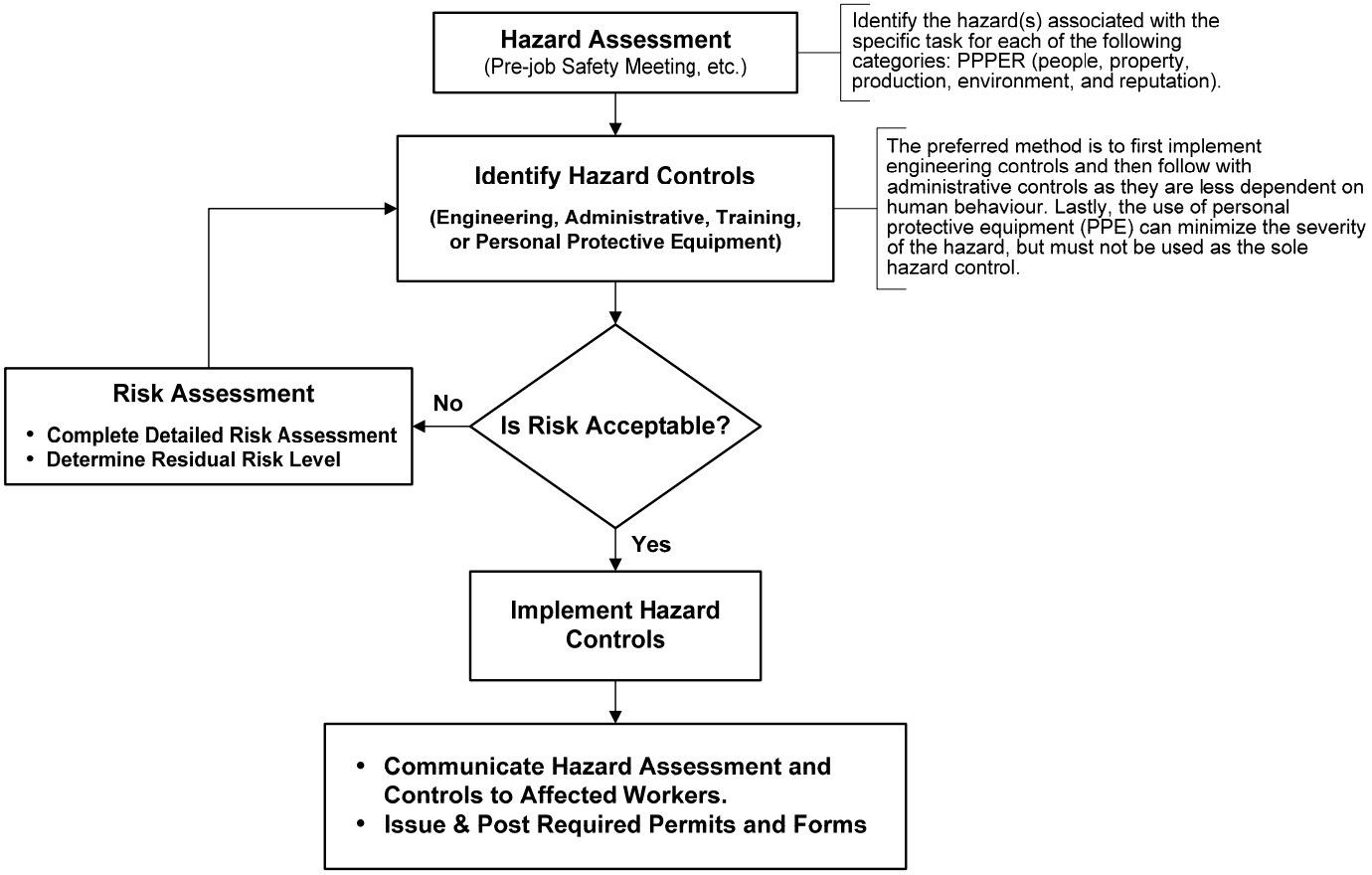
6.0 USE OF HAZARD ASSESSMENT TOOLS

Risk assessment is often required when resources are limited and the need for them exceeds availability. The reality is that need almost always exceeds available resources.

Utilizing the **project hazard assessment**[1] and the **task analysis process** in conjunction with the **risk assessment matrix**, the user can determine whether a hazard or substandard condition presents an acceptable or unacceptable risk to the Company or people. As a result, appropriate priority can be assigned to various mitigation measures.

[1] Source: United Kingdom Health and Safety Executive, “Five Steps to Risk Assessment”.

6.1 Hazard Assessment Flow Chart



7.0 CLASSIFICATION OF RISK

Risks are classified as follows:

1. Low
2. Medium
3. High
4. Extreme

Low risks: do not require any further analysis.

Medium risks: should be investigated to determine effective risk mitigation benefits.

High risks: are highly undesirable and should be mitigated with engineering or administrative controls to a medium or low risk classification within a specified time period, such as 3 to 6 months. **Consider immediate interim controls and precautions where practical.**

Extreme risks: must be addressed on a priority basis. These risks are unacceptable to the company and must be mitigated (reduce the severity) with engineering and/or administrative controls within a specified time period, such as 3 to 6 weeks. **Immediate interim controls and precautions are recommended.**

8.0 ENGINEERING AND ADMINISTRATIVE CONTROLS

Control of workplace hazards may be performed in several ways depending on the type and risk factor severity of the specific hazard. Control measures may require a combination of engineering and administrative controls, or the use of personal protective equipment (PPE).

Engineering controls can include the following:

- Substitution of a less harmful material.
- Isolation or enclosure of the worker or process.
- Installation of abnormal operation sensors and emergency shutdown devices.
- Use of barricades or other restraining devices to prevent worker contact around or under dangerous or hazardous operations.
- Exhaust ventilation.
- Use of specialized materials.

Administrative controls are used where engineering controls cannot be implemented and can include the following:

- Developing and implementing safe work procedures and practices.
- Limiting the time of worker exposure.
- Using a safety watch person for critical tasks (i.e., fire watch, traffic control, hoisting activities).
- Providing worker training and supervision.

Personal Protective Equipment (PPE): For further details, refer to Health and Safety Document 02/HS/PJ/PR/002 Personal Protective Equipment.

9.0 RISK ASSESSMENT

Risk assessment is used to formulate the criteria for developing controls and precautions such as elimination, substitution, engineering, segregation, procedures, practices, rules, equipment type, personal protective equipment, training, etc. Risk assessment should address any or all of the following areas relating to people, property, production, reputation and environment:

9.1 Risk Assessment Matrix

The Risk Assessment Matrix helps to determine the potential severity of an incident and the probability of occurrence related to hazards associated with each task or project and to assist in making an informed decision about risk mitigation.

The Risk Matrix identifies **potential severity** and **probability of occurrence** with clarifiers in each category to help determine actual potential risk associated with the hazards for a specific task.

- **Potential severity:** is based on how severe the event would be if no preventative measures are introduced. For further details, refer to Criteria for Evaluating Severity of a Situation.

- **Probability of occurrence:** is based on the chances of the event happening if the existing hazards or conditions are not corrected. For further details, refer to Criteria for Evaluating Probability of Occurrence.

Through risk mitigation processes, the objective is to move risk to a lower category in the matrix by either:

- Reducing the probability of occurrence through **loss prevention**, or

- Reducing the severity of a loss should it happen through **loss control**.

Examples of **loss prevention** include the following:

- Elimination, substitution, engineering controls, segregation

- Training, orientations, procedures, etc.

- Pipeline inspections, corrosion programs
- Improving equipment run life (PM programs), proper isolation
- Ergonomic considerations
- Consistent equipment type

Examples of **loss control** include the following:

- Use of personal protective equipment (PPE)
- Leak detection
- Proper isolation
- Emergency shutdowns
- Secondary containment

9.2 Risk Assessment Matrix Chart

Potential Severity	Probability of Occurrence			
	Frequent	Occasional	Remote	Unlikely
Catastrophic	Extreme Risk (9)	Extreme Risk (8)	High Risk (7)	* High Risk (6)
Critical	Extreme Risk (8)	High Risk (7)	Medium Risk (5)	Medium Risk (5)
Moderate	High Risk (7)	Medium Risk (5)	Medium Risk (4)	Low Risk (3)
Minor	Medium Risk (4)	Low Risk (3)	Low Risk (2)	Low Risk (1)

Notes:

* These high risks may be acceptable if the design, operations and management controls are consistent with industry practices. A more detailed score-based 'Risk Assessment Methodology' may be required.

If a risk falls between two or more categories, the selected risk ranking should reflect business sensitivity/priority and industry practice.

Numbers in brackets provide a method of rating risk on a 1-9 scale in order to prioritize mitigating activities/measures.

Potential Severity **(How severe could this event have been if no preventative measures were introduced?)**	**Probability of Occurrence** **(What is the chance of happening if existing hazards or conditions are not corrected?)**
Catastrophic Fatality or permanent disabling injury, Legislative – facility closure	**Frequent** Occurs repeatedly during the 50 - year life cycle; more than once per year. Example – hydraulic hose failure
Critical Lost time injury, threat to public, Legislative – fines / charges	**Occasional** Will likely occur; once every 1-3 years. Example - a moderate size product spill
Moderate Modified work or medical treatment, Legislative – reporting required	**Remote** Incident is not expected to occur more than once or twice during the life cycle; every 3-20 years. Example - a major pipeline rupture
Minor Minor injury, no threat to public, Legislative - no reporting required	**Unlikely** Not likely to occur, (possibly once in life of facility) Example - a major vapor cloud explosion

9.3 Criteria for Evaluating Severity of a Situation

Severity of Consequence	Potential Consequences			
	Health Impact (Illness or Injury)	**Financial Impact (Property or Earnings)**	**Environmental Impact**	**Company Impact (Reputation or Image)**
Catastrophic	**Fatality or high likelihood of fatality** **Permanent Disabling Injury**	**Entire Facility Shutdown** • One month or longer interruption • Plant-wide damage • Major impact on operation	**Long Term Impact** • 20-year effect • Active remediation • Legislative intervention	**National Attention** • Continuing media focus • Impact on share price • Drop in market share
Critical	**Loss time injury or threat to public or Severe Occupational Illness**	**Critical Process Shutdown** • One week or longer interruption • Major damage but limited to one process unit • Sub-optimal facility operation	**Medium Term Impact** • Active remediation (5-10 years) • Regulatory intervention • Prosecution and/or fines	**Province-wide Impact** • Active media interest • Promotional efforts to maintain market share
Moderate	**Recordable injury or Minor Occupational Illness**	**Major Equipment Shutdown** • One week or longer interruption • Facility is largely unaffected • Sub-optimal unit operation	**Short Term Impact** • Requires timely remediation • May invite control order	**Community Issue** • Local media coverage • Good citizen image is negatively impacted
Minor	**First Aid Injury Only**	**No Impact on Operation** • Minor component damage • Equipment operates at lower efficiency • Unit capacity is unaffected	**No Immediate Impact** • Requires situation monitoring • Will require cleanup at some time in future	**Individual Concern** • No media coverage • No damage to company image

9.4 Criteria for Evaluating Probability of Occurrence

Probability of Occurrence	Potential Frequency		
	Inside the Field	**Within the Company**	**Within the Industry**
Frequent	**Has Occurred Previously**	**Long History**	**Common Occurrence**
Occurs repeatedly during the 50 - year life cycle; more than once per year. Example – hydraulic hose failure	• Once a year or more frequent	• Most similar facilities have experienced the problem	• Not even reported due to very high frequency
Occasional	**Limited Experience in a New Facility**	**Reasonable Experience**	**Common Industry Experience**
Will likely occur; once every 1-3 years. Example - a moderate size product spill	• Older facilities will have some experience	• The event occurs once every few years somewhere in the company	• Taken for granted • No negative impact on the industry as a whole
Remote	**Possible Experience**	**Some Experience**	**Reasonable Experience**
Incident is not expected to occur more than once or twice during the life cycle; every 3-20 years. Example - a major pipeline rupture	• Older facilities may have some experience	• The incident has occurred a few times in the company	• Usually covered by local news
Unlikely	**No Field Experience**	**Lack of Experience**	**Some Experience**
Not likely to occur, (possibly once in life of facility) Example - a major vapor cloud explosion		• Incident has probably not occurred in the Company but may occur sometime	• Has occurred in industry • National news; some international exposure

Note: Situations where the probability of occurrence is determined to be less than once in 10,000 years are considered low risk regardless of severity of consequences. However, the probability must be determined based on quantitative statistical data and/or Fault Tree Analysis, rather than based on a subjective estimate.

9.5 Instructions for Using the Risk Assessment Matrix

To use the Risk Assessment Matrix Chart proceed as follows:

1. Identify and evaluate all the hazards associated with a specific task or project.

2. Identify the hazards, situations, or substandard conditions based on your experience where you have a history of losses (e.g., pipeline failures, injuries related to the task/project, premature equipment failure, high associated maintenance costs, etc.).

3. Review potential hazards that are known because of the history of losses in the company or the industry. (e.g., a fire in and around a Propane/NGL bullet may be something you have not experienced in this area or in the company's operations, but it has occurred in the industry).

4. Determine **potential severity** and **probability of occurrence** associated with the hazards of specific tasks.

5. Determine if you get several **extreme** or **high**-risk tasks from your analysis.

6. Address **extreme/high-risk situations** and do so in a timely manner. No human lives will be exposed under extreme risk situations. However some high risks may be acceptable since the risk cannot be reduced any further with the current state of technology and knowledge. (e.g., NGL storage bullets are a high risk, but there is a limited amount you can do to reduce the risk)

7. Once you have assessed the hazards and ranked them from the matrix, prioritize your tasks/project activities according to the number arrived at from the risk matrix.

8. Use this as a guide to establish the necessary controls for your highest risk tasks/projects (i.e., top 20%). With this risk matrix, all 9's become priority 1's and these should be addressed first.

9. Once controls have been developed for the critical tasks, re-evaluate the remainder of the task inventory.

10.0 CONTROLS AND TRAINING REQUIREMENTS

10.1 Controls

Determine the appropriate controls to address hazards associated with the specific project in order to protect people, property, production, reputation and environment. Controls will include some, all, or combinations of the following:

- Engineering (ENG)
- Responsible Operating Guideline (ROG)
- Procedures (PR)
- Personal Protective Equipment (PPE)
- Practices/Standards (PRA)
- Skills Training (ST)

10.2 Training Requirements

Training requirements will be identified and will include some, all, or combinations of the following:

- Proper Operating Practice (POP)
- Skill Check (SC)
- Proper Maintenance Practice (PMP)
- Operator Training Program (OTP)
- Personal Protective Equipment (PPE)
- Applicable Codes of Practice (COP)

10.3 Implementing/Reviewing Controls

When implementing/reviewing controls, proceed as follows:

a) Review engineering controls to ensure they meet the intent of hazard control as identified in the Process Hazard Assessment (PHA).

b) Update any additions/deletions of tasks due to equipment and/or process change in the Site-Specific Task Inventory List and the Task Analysis Process Flow Chart to assess the hazards involved with these tasks.

11.0 TASK PROCESS

The task analysis process includes the following:

1. Task Inventory List
2. Hazard Assessment
3. Critical Task List
4. Controls/Training

For details, refer to the Task Analysis Process Flow Chart.

11.1 Task Inventory List

When developing or establishing a Site-Specific Task Inventory List, proceed as follows:

a) Develop a Site-Specific Task Inventory List either by utilizing your current task lists and/or obtaining the Generic Task Inventory List from the Safety Department to record all tasks performed at your location.

b) Identify any additional tasks for the job from the data and add to the list as necessary. Consider activities such as:
   - Operating Heavy Equipment
   - Laborer

- Lab activities
- General maintenance
- Maintenance activities (e.g., welding, electrical, instrumentation, mechanical, and pipe fitting, etc.)

c) When developing lists, use equipment identifier or product first and list in alphabetical order. (e.g., Compressor – Start-up; Flare Stack - Lighting; MDEA - Add to process)

d) Do not identify tasks as one (e.g., start/stop). Separate these tasks in order to properly evaluate and conduct hazard assessments.

> **Note:** Always use the action words last; it is difficult to build a useable index from action words.

e) Have as many employees as possible review the list to ensure no task has been overlooked.

f) Update tasks from your site task list as equipment or processes are added, changed, or deleted.

11.2 Hazard Assessment

Using the Task Inventory List helps to identify all hazards associated with each task and to quantify the risk when identifying critical tasks. Proceed as follows:

a) Identify the hazard(s) associated with the specific task for each of the following categories: PPPE (people, property, production and environment).

b) Ensure all health hazards are identified and recorded on the worksheet. (e.g., H_2S/SO_2 exposures, LEL, benzene, NORM's, noise, heat, pressure, etc.)

c) Question every task. Can this task be eliminated, substituted, segregated, or re-engineered in order to reduce or eliminate the risk of exposure to workers?

Using the Risk Assessment Matrix helps to identify the risks associated with each hazard identified in above step. Proceed as follows:

a) Identify the risk (potential severity and probability of happening if it should happen) from the hazards associated with the specific task.

b) To assess the risk for each task, consider the severity or potential loss and the likelihood or probability of the incident or loss.

c) Assess the severity. Determine how severe the loss is likely to be if no preventative measures are introduced.
- Apply the injury or dollar losses from the Risk Matrix.
- Consider people, property, production, reputation and environment.
- Use severity guidelines on Risk Matrix attachments.

d) Determine frequency/probability. How often does identified severity happen? To judge the frequency/probability, look at:
   - the task's frequency,
   - the number of people involved or exposed,
   - the task's past history,
   - people's familiarity with the procedure, and
   - industry history.

e) Provide a risk score of one (low) to nine (high) for each of the hazard categories (people, property, production, reputation and environment).

f) Assign a Risk Rank # for each task by transferring the highest risk score to the risk rank # column on the Task Inventory List. For reference, an example Inventory List is also provided.

g) Add comments as applicable to explain your conclusions.

11.3 Controls/Training

To determine the controls/training requirements, proceed as follows:

a) Determine the appropriate controls/training requirements to address the hazards associated with the specific task in order to protect people, property, production, reputation and environment.

b) Ensure the following controls have been identified in the Control column on your Task Inventory List. They may include some, all, or a combination of the following:
   - Engineering (ENG)
   - Responsible Operating Guideline (ROG)
   - Procedure (PR)
   - Personal Protective Equipment (PPE)
   - Practice/Standard (PRA)
   - Skill Training (ST)

c) Ensure the following training requirements have been identified in the Training column on your Task Inventory List. They may include some, all, or a combination of the following:
   - Proper Operating Practice (POP)
   - Skill Check (SC)
   - Proper Maintenance Practice (PMP)
   - Operator Training Program (OTP)
   - Personal Protective Equipment (PPE)
   - Applicable Codes of Practice (COP)

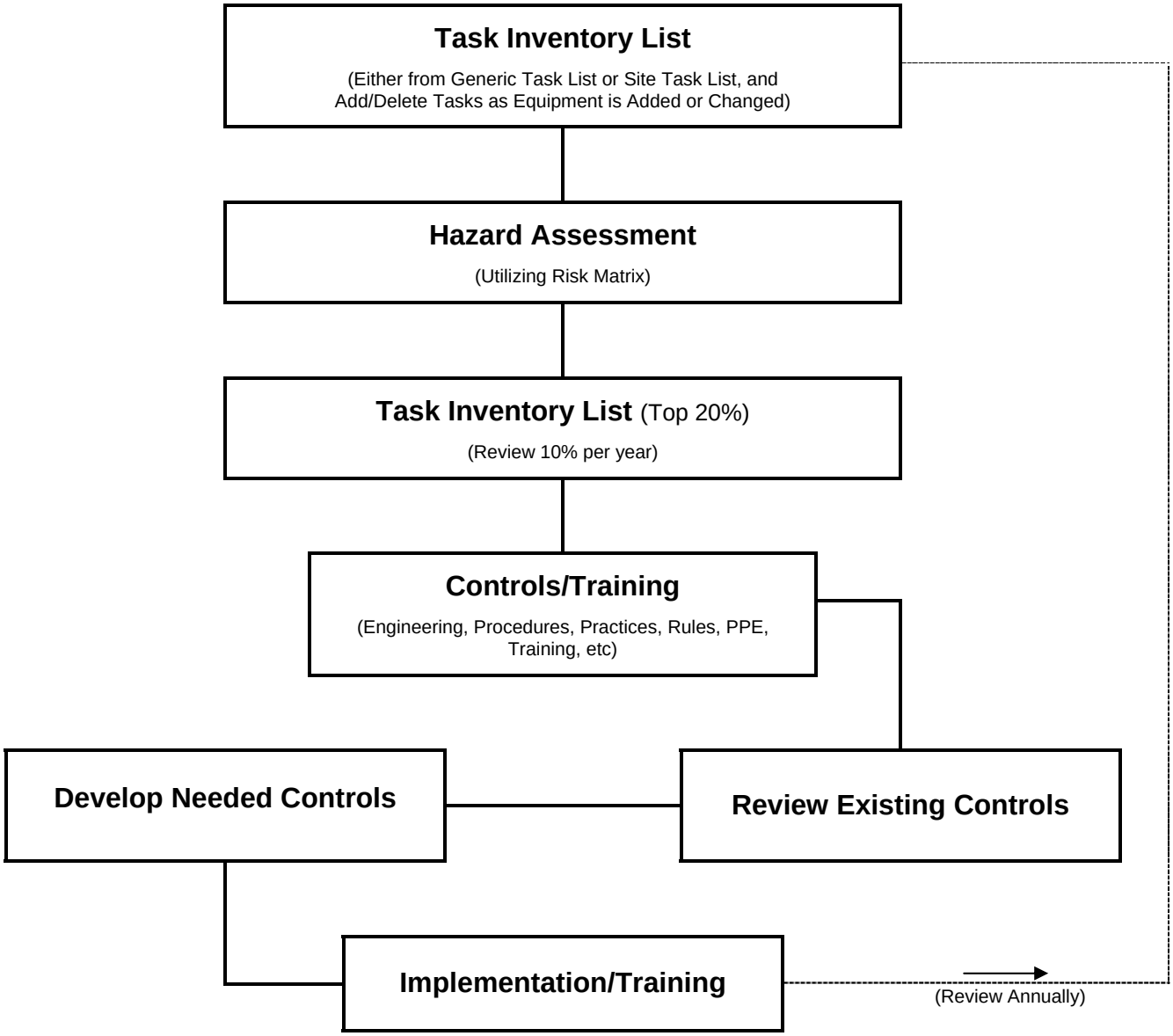
11.4 Critical Tasks

Once controls and training requirements have been developed for the critical tasks, proceed as follows:

a) Re-evaluate the remainder of the task inventory; determine if controls and training are required for any additional tasks.

b) Review 10% of the critical tasks annually to ensure procedures/practices/ROG's, etc. reflects the required controls.

11.5 Task Analysis Process Flow Chart:



12.0 PROGRAM NEEDS

There are some tasks that require only ROG's or simple engineering controls to control loss exposures. Not all tasks can or should be in a procedural format. This is particularly true of

tasks in trades, crafts, maintenance, and materials handling, which may be done a little differently each time. For tasks of this nature, practices are more functional.

12.1 Engineering Controls

Safe designs and equipment are utilized to minimize or reduce exposure to materials that are hazardous. Some examples of engineering controls would include exhaust systems, guarding, isolations (mechanical/electrical), lighting, barricades/enclosures, auto-ignition systems, auto tank gauging, etc.

12.2 Procedures

A step-by-step description of how to perform a task safely and efficiently from start to finish. See definition in Section 1.3.

12.3 Practices:

See definition in Section 1.3.

12.4 Responsible Operating Guidelines

See definition in Section 1.3.

12.5 Hygiene Review

Usually required when hazardous conditions or materials may be encountered as identified on the Project Safety Review Checklist[1], Hygiene Review List column. Determine when you need a hygiene review to help identify controls (e.g., chemical agents, ergonomic agents, noise monitoring, biological agents, food handling, water quality monitoring, waste disposal, or entering a vessel where NORM has been identified or may be suspected).

12.6 Training

Requirements for skill training should be determined and recorded on the form to verify competency.

13.0 DEVELOPING PROCEDURES

Determine whether a task procedure, task practice or responsible operating guideline would be most appropriate. Procedures must be clear, concise, correct, and complete, and printed in a simple, functional format. For details, see the Procedure Form**.**

13.1 Significant Task Steps/Action Column

When developing significant tasks steps/actions, proceed as follows:

a) Identify significant steps or actions required to perform tasks.

Task procedures should be approximately 6 to 8 steps; a complicated task would be 12 to 15 steps maximum. If you have more than 15 steps, you are likely working on more than one task. Break it down into two tasks.

b) On every step, ask these questions:
   - **When** should this step be done? Perhaps a change of sequence will save time or avoid potential accidents.
   - **What** is the purpose of this step? Maybe it serves no purpose. On the other hand, knowing its purpose can sometimes help you find a better way to perform the same task.
   - **Why** is this step necessary? Maybe the result it accomplishes is unimportant or unnecessary.
   - **How** can it be done better? “Better" meaning safer, quicker, or with increased efficiency.

Recommended Controls/Considerations Columns

After breaking the work down into its significant task, steps/actions, proceed as follows:

a) Analyze each one to determine the loss exposure involved with that particular step in performing the task.

b) Carefully consider people, property, production and environment. Use the PPPE format and keep these points in mind:
   - Past loss experience
   - Potential for personal injury or big losses
   - Recurring smaller losses

c) After identifying loss exposures, develop recommended controls such as:
   - PPE use
   - Lockout and tag out
   - Safe Work Agreement
   - Standing/operating order
   - Respiratory equipment
   - Activity related to key point tips

13.2 Writing Tips for Procedures

Note the following writing tips:

a) Keep your sentences in the active voice rather than the passive voice. The **action verb** comes first.

Active Voice:	**Remove** cotter pin from drive shaft.
Passive Voice:	The cotter pin shall be **removed** from the drive shaft.

b) Begin the sentence with an action verb followed by the object of the action (usually the equipment name).

This:	**Open** valve.
Not this:	The valve must be **opened**.

c) Omit the subject "you" in the sentence; it is implied.

d) Omit all unnecessary articles (e.g., a, an, the).

e) Add other grammatical elements such as location or object modifiers as necessary to convey the appropriate instructions. For example:

	Action Verb	**Object**	**Location**
This:	**Remove**	0-ring	from nozzle opening.
Not This:	Now you **remove** the O-ring, which is located in the nozzle opening.		

13.3 Selecting Graphics

Graphics should enhance the procedure making it easier to read and perform the task. A simple illustration will eliminate the need for description of equipment and locations and thus increase the user's speed and accuracy especially during training or non-routine tasks.

13.4 Review

To **review** procedures, proceed as follows:

a) Procedures will be saved and kept in the ESHS Management System within the company's network.

b) A document controller will invite (by mail) the appropriate personnel to review and comment the procedure or document on a determined due date. He/she will submit the link so everyone requested will access to review and work on the document.

c) Personnel will only be able to review and work on a document one at a time. If someone is currently working on a document and someone else tries to access, this will only be possible as a read only document; no modifications will be allowed by the system.

d) Those who were invited shall review and insert their comments or suggestions using the tracked changes mode, so everyone identifies who provided the inputs and what was modified or suggested.

e) Once an individual finishes reviewing the document, he/she shall send a mail to the document controller and others invited, indicating his revision has been completed and comments are in place.

13.5 Verification through Task Observation:

To **verify procedures through task observation**, proceed as follows:

a) Select worker(s) to observe the task being performed safely and efficiently as written. Select workers who are proficient at the task and confident of their skills, so the analysis team will have the benefit of seeing the task performed consistently using current methods.

b) Explain the process. - Ensure the employee performing the task understands what is going to happen. Include a few other people in the observation. Some candidates for the observation team include the supervisor or designate, a safety representative, and other workers qualified to perform the task. Provide an orientation so that expectations are understood.

> **Note:** Stop the task immediately if a step or a step missed, causes imminent danger.

c) Observe and record the breakdown of steps. This is to prevent you from seeing a step incorrectly or not at all. As well, the employee may add or omit a step while performing the task.

d) Identify any substandard conditions or loss exposures that have not been properly addressed.

e) Revise procedure, if necessary, and re-observe.

13.6 Approval

New Procedures, work practices and ROG's approval process must include a sign off of the senior site supervisor after review by appropriate staff and / or task observation. Utilization of your ESHS department is recommended however not mandatory. A procedure, work practice or ROG is considered approved upon receiving the senior site supervisor sign off.

14.0 RECORD AND FILING REQUIREMENTS

File and maintain a permanent record of the following records:

- Task Inventory List
- Completed Task Inventory Worksheets

Add or update procedures, responsible operating guides, or practices (including index) in the Site Procedure Manual and forward a copy to the Peru LNG S.R.L. EH&S Department.

> **Note:** [1] Denotes a policy, process or procedure under development.

ATTACHMENT #1 - Task/Hazard Inventory List

Note: Utilize this link to go to Form Template.

Location: _____ Date of Analysis: _____

Analyzed by: _____

Approved by: _____ _____ _____

Print Name *Title* *Signature*

Task/Hazard	Hazard Category	Risk Score	Risk Rank #	Hygiene Review	Comments/Controls
	People Property Production Reputation Environment				
	People Property Production Reputation Environment				
	People Property Production Reputation Environment				
	People Property Production Reputation Environment				
	People Property Production Reputation Environment				
	People Property Production Reputation Environment				
	People Property Production Reputation Environment				
	People Property Production Reputation Environment				

All tasks with Risk Rank # of 7 and above should be evaluated as to Working Alone.

ATTACHMENT #2 - Task/Hazard Inventory List (Example)

Location: *Any Location* Date of Analysis: *Date*

Analyzed by: *John Smith*

Approved by: *John Doe* (Print Name) *Manager* (Title) *John Doe* (Signature)

Task	Hazard Category	Risk	Risk Rank #	Comments
Blinding and Blanking	People Property Production Reputation Environment	6 1 6 5 5	6	Refer to Blinding and Blanking Procedure.
Drive Pan American Highway	People Property Production Reputation Environment	9 5 6 6 6	9	Requires check-in / check-out if working alone. Night time driving is discouraged.
Hot tap onto low pressure gas line	People Property Production Reputation Environment	8 1 1 1 6	8	Requires check-in / check-out if working alone.
Communication with Civil Construction Union.	People Property Production Reputation Environment	4 1 1 5 2	5	
Walking Pipeline RoW to determine center line.	People Property Production Reputation Environment	7 5 1 4 1	7	Should not be done alone, Communications system is required.
Disturbing an Archeological site.	People Property Production Reputation Environment	4 2 1 7 5	7	
Vehicle Driving	People Property Production Reputation Environment	8 3 1 5 3	8	
	People Property Production Reputation Environment			
	People Property Production Reputation Environment			

All tasks with Risk Rank # of 7 and above should be evaluated as to Working Alone.

ATTACHMENT #3 – Procedure

Refer to ESHS Document Development Procedure and Document Template for Procedure Format.