| | |
|---|---|
| BP Group OMS: | Sub Element 3.1 |
| Document Application: | Air BP Guide |

# Hazard Identification and Task Risk Assessment for Non-Routine Work

## GEN 9A

| | |
|---|---|
| Document Owner: | Mike Henderson |
| Document Approver: | Peter Pearson |
| Document Issuer: | Justin Walker |
| Issue Date: | 25 April 2014 |
| Issue Number: | 0 |
| Next Review Date: | 25 April 2017 |

**Use of Language**

Throughout this document, the words 'may', 'should' and 'shall', when used in the context of actions by Air BP or others, have specific meanings as follows:

(a) 'May' is used where alternatives are equally acceptable.

(b) 'Should' is used where a provision is preferred.

(c) 'Shall' is used where a provision is mandatory.

Note that alternative or preferred requirements may be qualified by Air BP in another referenced document.

| Issue Date: | Issue Number: | Reason for issue: |
|---|---|---|
| 25 Apr 2014 | 0 | First Issue |
| | | |
| | | |

**Registered Address:**
Air BP Limited
Chertsey Road
Sunbury-on-Thames
Middlesex
TW16 7LN
United Kingdom

## Table of Contents


1 INTRODUCTION ..... 5
2 POLICY ..... 5
3 SCOPE AND APPLICATION ..... 5
4 ROLES AND RESPONSIBILITIES ..... 6
5 HAZARD IDENTIFICATION AND TASK RISK ASSESSMENT PROCESS ..... 7
6 HAZARD IDENTIFICATION AND SOURCES OF HARM ..... 10
6.1 Hazard Identification Process ..... 10
6.2 The Concept of Hazard versus Risk ..... 10
6.3 Sources of Harm and the Identification of Hazards ..... 11
7 CONSEQUENCE DETERMINATION (FOR LEVEL 2 TASK) ..... 12
8 IDENTIFICATION OF HAZARD CONTROLS AND MEASURES ..... 12
8.1 Hazard Controls and Measures ..... 12
8.2 Hierarchy of Controls ..... 13
8.3 Controls Check ..... 14
8.4 Residual Risk Check ..... 14
9 ASSESSMENT OF RESIDUAL RISK (FOR LEVEL 2 TASK) ..... 14
9.1 Requirement for Quantifying Residual Risk ..... 14
9.2 Identification of Probability ..... 15
9.3 Evaluation of Risk and Risk Ranking ..... 15
10 DOCUMENTATION AND APPROVAL OF TASK RISK ASSESSMENT ..... 15
10.1 Agreement on Risks and Controls ..... 15
10.2 Documentation and Records ..... 15
10.3 TRA Approval ..... 16
11 PERFORM TASK ..... 17
11.1 Permit to Work and Communication ..... 17
11.2 Prerequisite and Supplementary Controls ..... 18
11.3 Performing the Task ..... 18
11.4 Monitor for Condition Change ..... 18
11.5 Emergencies ..... 19
11.6 Lessons Learned ..... 19
12 TRA AUTHORITIES AND TRAINING ..... 19
12.1 TRA Authorities ..... 19
12.2 Training ..... 20
12.3 Records ..... 20
12.4 Reassessment and Refresher Training ..... 20

**APPENDIX 1: TASK RISK ASSESSMENT TABLE (TRAT)**

**APPENDIX 2: SOURCES OF ENERGY**

**APPENDIX 3: HAZARD IDENTIFICATION GUIDE**

**APPENDIX 4: RISK EVALUATION TABLES**

**APPENDIX 5: LEVEL ONE RISK ASSESSMENT TEMPLATE**

**APPENDIX 6: LEVEL TWO RISK ASSESSMENT TEMPLATE**

## 1 INTRODUCTION

The effective assessment and management of risk is a key component of maintaining safe and reliable operations and BP's HSSE goals of "No accidents, no harm to people and no damage to the environment".

Air BP undertakes various activities, which can be grouped into Routine and Non-Routine. Routine activities are those that are repeated, and their associated risk is managed via a Task Breakdown and the associated competence assessment. This process is described in TRN 001 the Air BP Competency Assurance System for Aviation Operations. All other activities are considered to be Non-Routine.

This document describes processes and systems to effectively identify the hazards and help manage the risks associated with construction, maintenance, demolition, remediation, operating task and similar work activities carried out by the Air BP workforce at Air BP premises. It provides the detail necessary to illustrate 'what good hazard identification and task risk assessment looks like'.

## 2 POLICY

The Principle of OMS sub-element 4.5 'Control of Work' is as follows:

"BP entities employ a formal Control of Work process to provide a work environment that will allow tasks to be completed safely and without unplanned loss of containment causing environmental damage."

The Group Essentials of this sub-element are as follows:

| | |
|---|---|
| 4.5.1 | **Implement** and maintain a process to plan work, identify hazards, assess **risk** and put in place **risk reduction measures** to allow work tasks to be completed safely and without unplanned loss of containment causing environmental damage. |

## 3 SCOPE AND APPLICATION

Air BP shall comply with GDP 4.5-0001 Control of Work and Air BP conformance is demonstrated in GEN 3.

GDP 4.5-0001, Section 8A, states, "Tasks associated with the work subject to this practice are not conducted without being risk assessed". This document defines how Air BP meets this requirement for non-routine work activities covered by the Air BP Permit to Work process (GEN 3). Note that GEN 3 permits other risk assessment approaches for non-routine work that is not covered by the Permit to Work Process.

To risk assess non-routine work covered by a Permit to Work Air BP has adopted the principles of GG 3.1-0002 Hazard Identification and Task Risk Assessment (HITRA) with modifications made to reflect the Air BP Operating Environment and organisational structure.

This Guide applies to all Air BP Operated sites, and at Joint Venture (JV) sites where Air BP is the operator. In addition it applies to all projects that Air BP manages. The principles of this Guide should be encouraged at JV sites where Air BP is not the operator. The Air BP JV board members are expected to ensure that non-routine activity risks are being managed, either by this or a similar approach.

Regional variations may be permitted if these are consistent with other BP Permit to Work systems.

## 4 ROLES AND RESPONSIBILITIES

This section outlines roles and associated responsibilities for a successful HITRA process. The roles and responsibilities listed under each job title should be assigned by the PU Operations (Integrity) Manager to suitably trained and knowledgeable personnel who are able to perform the role as needed. The job titles listed below may not exist at all locations and at some sites one person may perform multiple roles.

PU Operations (Integrity) Manager shall:

- Confirm that a TRA process is in place in the PU and it is being followed consistently.
- Ensure the TRA process is reviewed and audited to confirm that the quality of the TRAs and areas of improvement have been identified and implemented.
- Confirm a process is in place to manage the appointment of capable persons as:
  - Authorising signatories for Level 1 and Level 2 TRAs.
  - Level 1 TRA risk assessor.
  - Level 2 TRA facilitators and team leaders.

Level 1 Task Risk Assessors shall:

- Complete Level 1 TRAs only, which includes a worksite visit.
- Confirm that adequate consultation has taken place, typically with the Site Manager and Performing Authority.
- Confirm that those involved in the risk assessment have the necessary knowledge and capabilities for the task.
- Confirm that the residual risk is ALARP and that the work can be undertaken safely.
- Confirm the appropriate authorisation prior to the commencement of work.

Level 2 TRA Team Leader or Facilitator shall:

- Lead the assigned team in performing a Level 2 TRA as described in this guide.
- Confirm that the team understands the assessment process and its objective.
- Take responsibility for maintaining the quality of the TRA.
- Confirm the following:
  - The team includes personnel who have the necessary knowledge and capabilities for the task, including the Performing Authority.
  - The TRA includes a worksite visit.
  - All members of the team have a full opportunity to contribute to the TRA and that all agree to the details of the TRA.
  - Accurate recording of the details of the TRA.
- Confirm that the residual risk is ALARP and that the work can be undertaken safely.

- Confirm the appropriate authorisation prior to the commencement of work.

Authorising signatories:

- Only approves Task Risk Assessment that they have been authorized to do so that is commensurate with the TRA residual risk.
- The Level 1 TRA authority should:
  - Determine if the controls reduce the task hazards and risks, associated Site Risks, Process Risks, Simultaneous Operations (SIMOPS) and Human Factor risks by the proposed means. This includes considering the controls specified by any relevant local procedure and the capability of the person in charge.
  - Confirms that the risk is ALARP, accepts the level of residual risk on behalf of the business and that the Work can be undertaken safely.
  - Identify the necessity of a more rigorous TRA and initiate a Level 2 TRA, if required.
- The Level 2 TRA authority should:
  - Confirm the TRA team has:
    1. The appropriate level of experience and knowledge to perform the TRA.
    2. Taken appropriate guidance on health, safety and environmental legislation and consequent limits on operation (e.g., environmental consents).
    3. Undertaken the risk assessment diligently.
  - Confirms that the risk is ALARP, accepts the level of residual risk on behalf of the business and that the Work can be undertaken safely.

## 5 HAZARD IDENTIFICATION AND TASK RISK ASSESSMENT PROCESS

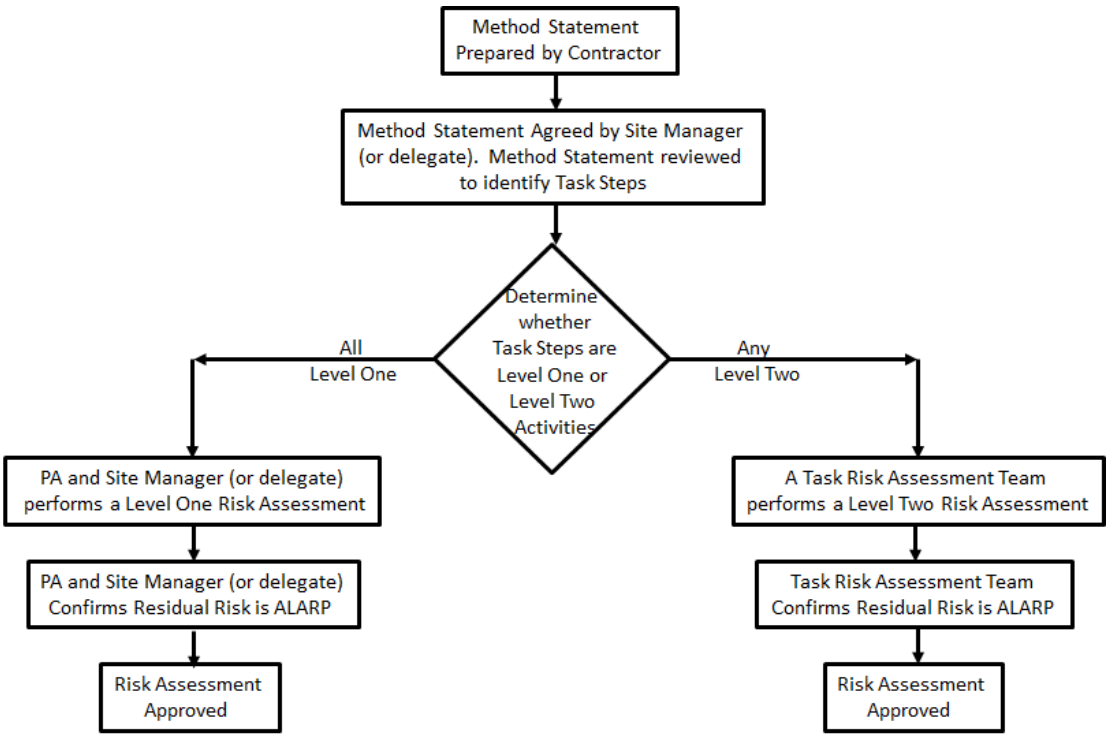
Hazard Identification and Task Risk Assessment (HITRA) is a systematic process (see Figure 1) to effectively identify the hazards and help manage the risks associated with construction, maintenance, demolition, remediation, operating task and similar work activities carried out by the Air BP workforce at Air BP premises. HITRA process is applied to tasks identified in the Work Methodology Statement developed for a work activity. There are two levels of HITRA:

- Level One - a qualitative risk assessment for low risk tasks, as defined by the Task Risk Assessment Table (see Appendix One)
- Level Two - a semi quantitative risk assessment for medium and high risk activities, as defined by the Task Risk Assessment Table (see Appendix One)

The level of approval for approval for a Task Risk Assessment is based on the residual risk level.

The following describes the steps to be followed when undertaking the HITRA process.

**Figure 1: Hazard Identification and Task Risk Assessment Process**




Note:
PA – Performing Authority

1. A method statement (as defined in GEN 3) is developed for a non-routine work activity. This is normally prepared by the Performing Authority (PA) who could be an Air BP employee or in most cases a contractor undertaking work for Air BP. The method statement shall include the tasks involved. The Site Manager, Project Manager or designee should review the method statement and accept the proposed method statement of works, before undertaking the Risk Assessment.

2. The Site Manager, Project Manager or designee with the Performing Authority reviews the method statement and tasks involved against the Task Risk Assessment table in Appendix 1 to determine if for that method statement any tasks are defined as Level 1 or Level 2. Level Two tasks typically include:

    - Confined space entry.
    - Trench excavation or pit more than 1.2m deep or other ground penetration such as piling.
    - Working at heights, where serious injury is likely in case of a fall.
    - Hot work in hazardous areas.
    - Work on energised systems.
    - Complex or critical lifting operations.
    - Activities involving exposure to substances for which there are defined exposure limit values:
        - Products containing benzene.
        - Inert gases.
        - asbestos.

- Work on safety critical equipment or systems that may result in performance or availability below documented minimum standards:
  - Removal or multiple inhibitions of protective devices.
  - Blocked escape routes.
  - Off-line fire pump or emergency generator.
- Simultaneous operations and other potentially conflicting operations (e.g. construction adjacent to operating plant; tasks in areas with or near public access).
- Online connections to process equipment tanks or pipelines, including hot tapping.
- Planned deviation from an existing policy, procedure or practice.

If the Site Manager, Project Engineer or designee is unsure whether tasks are Level 1 or Level 2 they shall assume that the task is Level 2.

Note that the number and varieties of tasks carried out within Air BP may be very large, and the range of involved risks correspondingly wide. For practical reasons, the extent of any particular TRA should balance against the type of risk so that all levels of risk receive a commensurate level of attention. If the job being examined is complex it may be appropriate to break it into several smaller packages with their own Task Risk Assessments.

3. For a method statement that includes only Level 1 tasks a Level 1 Task Risk Assessor shall conduct a Level 1 Task Risk Assessment. Typically the Site Manager, Project Manager or designee (when deemed competent) and the Performing Authority undertake this TRA in a face to face meeting. This assessment consists of the following:

   - For each of the task steps, using the Sources of Harm as prompts (see Section 6, Appendix Two and Appendix Three), identify all of the hazards that could cause harm.
   - For each hazard identify the controls that are required to prevent or mitigate the harm (see Section 8). The Hierarchy of Controls shall be considered to establish the most effective controls.
   - Review the TRA to ensure that the potential harm has been mitigated to As Low As Reasonably Practical (ALARP).
   - The Level 1 Task Risk Assessment shall be agreed to and signed by all participants and approved by authorised persons (see Section 10).
   - Document the Level 1 Task Risk Assessment using the form presented in Appendix Four.

4. For a method statement that includes Level 2 tasks a structured semi-quantitative assessment shall be conducted. The TRA team performs a Level 2 TRA and is led by a Level 2 TRA Leader or Facilitator. The Level 2 TRA team should be a minimum of two persons and should consist of individuals who have intimate knowledge of the task and / or equipment to be used, the site, process, SIMOPS and Human Factors in a face to face meeting. This includes the Performing Authority (PA) and the use of external experts where necessary. In cases of larger tasks, or projects, potential tasks requiring Level 2 TRAs should be identified prior to or early in the work schedule for adequate time to plan and complete the TRAs. This assessment consists of the following:

- For each of the task steps, using the Sources of Harm as prompts (see Section 6, Appendix Two and Appendix Three), identify all of the hazards that could cause harm.
- For each hazard identify the credible consequences with no controls in place. Consequence is the harm and damage that could result from a hazard (see Section 7).
- For each hazard identify the controls that are required to prevent, limit or mitigate the harm or reduce the likelihood of occurrence. The Hierarchy of Controls shall be considered to establish the most effective controls. Guidance on the number of independent controls for the Hazard's assessed risk level is defined in Table 1. Common failure modes and dependencies of controls shall be considered (see Section 8).
- Determine the residual risk level (see Section 9).
- Review the TRA to ensure that the potential harm has been mitigated to As Low As Reasonably Practical (ALARP).
- Document the Task Risk Assessment using the form presented in Appendix Five.
- The Level Two Task Risk Assessment shall be agreed to and signed by all participants and approved by authorised persons based on the highest residual risk for any hazard identified (see Section 10).

5. Writing and authorising the associated Work Permit (see Section 11).
6. The monitoring of the hazard controls during work execution to ensure that these are in place and are effective (see Section 11).
7. Completing the works and closing out the permit (see Section 11).

When a non-routine task has been previously assessed, the previous assessment should be reviewed to confirm that hazards and controls are still relevant, and that it includes any necessary location-specific and time-specific controls. The TRA should be reviewed, revised if necessary due to a change in conditions, and approved before it is re-used.

## 6 HAZARD IDENTIFICATION AND SOURCES OF HARM

### 6.1 Hazard Identification Process

For each task step all the hazards shall be determined. This section provides guidance on the use of an energy source approach to identifying hazards and clarifies the differences concerning what a hazard is and how a risk involves an exposure to a hazard.

### 6.2 The Concept of Hazard versus Risk

Hazards may be anything that has the potential to result in undesired events such as injury, illness or damage.

Risk involves potential exposure to a hazard. For example, a hot surface or material may cause thermal skin burns, or a corrosive acid may cause chemical skin burns, but only if skin has contact exposure. No risk exists when there is no potential for exposure.

To identify all the hazards, the following should also be considered:

- **Plant and /or process.** Characteristics of the plant and / or process systems involved, for example:

- Access, proximity to plant, offices, vehicle movement etc.
- Type of service (e.g., water, air, Jet fuel, Avgas fuel)
- Operating conditions (e.g. temperature, pressure)
- Likelihood of contaminates (e.g. sediment)

- **Site.** Sensitivity of the location within the premises. Consideration should be given to proximity to Health, Safety, Security and Environment (HSSE) critical plant or systems such as:
  - Offices and services e.g. Heating, Ventilating and Air Conditioning (HVAC) intakes
  - Emergency Shut Down Controls and Isolation Valves
  - Escape routes,
  - Emergency equipment e.g. fire pumps,
  - Large process inventories such as pipelines, vessels or tanks
- **SIMOPS.** Possible interactions between simultaneous activities within the task itself, or with another, unrelated task-taking place nearby, that call for close coordination or controls to prevent simultaneous occurrence.
- **Human Factors.** Human factors involved in the task e.g. Workforce behaviours, quality of work procedures, communication, cultural aspects, competency, general public and physical attributes of work force to undertake the task.
- **Emergency.** Consider the hazards of, and the actions in the event of an emergency.

Hazard identification involves gathering input from a wide variety of sources, including:

- High potential and major incidents announcements.
- Information developed through Management of Change (MoC).
- Incident reports.
- Near miss reports.
- Audit reports.
- Inspection reports.
- Reviews.
- Lessons learned from incident investigation and / or previous HITRAs and / or completed tasks.

### 6.3 Sources of Harm and the Identification of Hazards

There are ten Sources of Energy types that can help identify hazard. In addition to these there are SIMOPS, Human Factors and Weather are also used to identify hazards, which with the ten Sources of Energy are collectively known as Sources of Harm. The ten sources of harm, see Appendix Two for details, are:

- **biological**, covers the many sources of energy in life forms

- **body mechanics**, human strength and agility applied to a task
- **chemical**, energy in the form of reactive or like
- **electrical**, includes all types and voltages of electricity
- **gravity**, a naturally occurring energy that causes tools, equipment or people to fall or move
- **mechanical**, includes mobile equipment as well as moving parts on stationary equipment and rotating equipment
- **noise**, a form of pressure energy
- **pressure**, air, water, pneumatics, springs, gases are all possible sources of significant pressure energy
- **radiation**, in the form of sunlight, radio waves or ionizing radiation
- **thermal** (heat / cold), energy associated with hot or cold surfaces and fluids, undesired chemical reactions and / or ambient temperatures

Each task should be systematically reviewed for hazards using the sources of harm.

Each task may have multiple hazards based on the related energy sources identified by the team during this review. The TRA team leader or facilitator should direct the group to collectively list and review the energy sources and tasks so that all members have adequate opportunity to express their views while listing the task hazards.

As with the task hazards discussed above, the team shall also use the sources of harm to identify the jobsite hazards as well as the process hazards, SIMOPS hazards and Environment hazards during their jobsite visit.

Appendix Three presents examples of hazards for the Sources of Harm that may be found in the workplace.

## 7 CONSEQUENCE DETERMINATION (FOR LEVEL 2 TASK)

For a Level 2 Task Risk Assessment the consequence for each hazard shall be determined. For each hazards identified where there is a risk of exposure, the potential credible consequences should be identified considering any impact on personnel or plant whether or not they are directly involved in the task should be considered. There may be more than one consequence per hazard. The worst reasonably credible consequence of the hazard should anything go wrong, based on a “What if?” scenario shall be recorded (see Appendix Four Table 2).

## 8 IDENTIFICATION OF HAZARD CONTROLS AND MEASURES

### 8.1 Hazard Controls and Measures

For each hazard where there is a risk of exposure control measures shall be developed. This section discusses the processes and protocol for the hierarchy of controls to mitigate the risk.

In identifying controls, consideration should be given to the:

- Task.
- People involved (individual characteristics: e.g. back condition).

- Tools, equipment, and materials to be used.
- Working environment.
- Personal Protective Equipment (PPE)
- SIMOPS

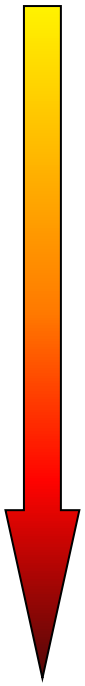
The TRA team should work systematically through the list of hazards to specify all the methods necessary to control each of the associated risks. Existing controls should be recorded and any additional controls that the team considers necessary to achieve a sufficient level of overall control. The Air BP Safe Working Practices (GEN 51) should be used as a basis to identify controls. The hierarchy of controls in the following section should be used as a guide to confirm that a full range of options is considered. The minimum number of controls for the associated risk is given in Table 1.

## 8.2 Hierarchy of Controls

Protecting the workforce and others who may be affected begins with controlling the exposures to occupational hazards. Eliminating a hazard is more effective than mitigating the impact of the effects of a hazard. The hierarchy of controls shall be considered to identify the most effective prevention categories reasonably practical.

The following sequence should begin with the most effective action.

Most effective



**L1** Eliminate the hazard and eliminate the associated risk (i.e., conduct task elsewhere, conduct the task during facility turnarounds).

If this method will not work, try:

**L2** Substituting the hazard with a lesser risk (a substance, process or practice) that has less potential to cause harm.

If this method will not work, try:

**L3** Using engineering controls to permanently remove a hazard or place a permanent engineered barrier between the workforce and the hazard.

If this method will not work, try:

**L4** Isolating the hazard by temporarily containing the work environment or work process to interrupt the path between the workforce and the risk (e.g., insert blind flange, guards or barriers; set up temporary enclosures).

If this method will not work, try:

**L5** Applying administrative controls to confirm capabilities of the workforce (i.e., training, using specialist personnel, changing rosters, supervising closely and establishing policies / standards or procedures).

If this method will not work, then:

**L6** Use PPE (e.g., gloves, goggles) as a last resort.

Least effective

**Control Hierarchy Categories**

**Most Effective**  **Least Effective**

| Prevention<br>Risk is remote | Protection<br>Risk is close |
|---|---|
| Eliminate | Isolate |
| Substitution | Administrative Controls |
| Engineering Controls | Personal Protection Equipment |

Using the hierarchy of controls illustrations above, the team should review the categories, with emphasis on the most effective prevention categories that facilitate the elimination of an occurrence. If this is not possible, the team may apply the protection categories where the risk is close to prevent or limit hazard effects and reduce the likelihood of occurrence.

### 8.3 Controls Check

Consideration should be given to the following questions:

- Have all the necessary control measures been fully and effectively identified?
- Is there an engineering change necessary for eliminating or reducing the hazard/risk?
- Are any additional capabilities needed to complete the task safely?
- Should the plant or process be shut down?
- Is the residual risk at a level to allow the task to be safely completed?

### 8.4 Residual Risk Check

If the residual risk is not at a level to allow the task to be completed safely, the hierarchy of controls should be used again with emphasis on the most effective or prevention categories.

o If any control measures are practicable to implement, thereby reducing the residual risk, the additional data should be recorded.

o If further control measures cannot reduce the risk to a level that allows the task to be completed safely, the TRA team cannot authorise the task and should refer back to the work requester.

## 9 ASSESSMENT OF RESIDUAL RISK (FOR LEVEL 2 TASK)

### 9.1 Requirement for Quantifying Residual Risk

For a Level 2 TRA for each hazard the level of risk based on a semi-quantitative value of the perceived consequence of the hazard and the probability of the hazard being realised shall be established.

Determining the risk level involves an examination of the consequences and the probability of an exposure event. These events may concern the risk to people, plant, environmental, business or reputation risk. For instance, hydrocarbon vapours in a flammable mixture with air may ignite if exposed to an ignition source, resulting in a fire that could harm people, damage the facility, impacting operations and business reputation.

### 9.2 Identification of Probability

For each of the hazards and consequences the most reasonably possible probability of the consequence being realised shall be considered and recorded (see Appendix Four Table 2).

### 9.3 Evaluation of Risk and Risk Ranking

A process called risk ranking assigns semi-quantitative derived values for the consequences and the probabilities for each hazard associated with a particular task.

Plotting the most reasonably possible consequences against an agreed probability in the matrix in Appendix Four Table 3 provides a numerical risk level that should be entered on the site standard Level 2 TRA form (see Appendix Six). This risk level dictates the minimum approval level needed (see Section 10) and is also useful as a broad indication of risk and risk reduction, but HITRA decisions should always be dictated by careful consideration of the actual risks and controls rather than by any numerical risk level.

## 10 DOCUMENTATION AND APPROVAL OF TASK RISK ASSESSMENT

### 10.1 Agreement on Risks and Controls

Approval to proceed with a TRA should only be sought when the TRA team unanimously agree that, having considered any residual risks, the identified hazards and risks are controlled to the point that the task(s) for the job can be conducted safely.

The TRA team should document:

- The assessment, including all the identified control measures that should be in place for the defined task.
- The residual risk level for each identified hazard, with the highest residual risk defining the minimum level of approval.

The TRA is then submitted for approval to a person authorised to approve the level of residual risk.

### 10.2 Documentation and Records

The TRA team should record findings in a standard TRA format that includes the following:

- Date of TRA
- Task title
- Location
- Distinct activities
- Risk ranking
- Controls identified by team
- Hazards identified
- Residual risk ranking

- Hazard effect or consequence
- Name and signature of team members / leader
- Action to be taken (describe action, manpower, tools / PPE)
- Names of the task performers (for known hazard exposure and rotation of jobs)
- Reference to the work permit the TRA is associated with

Refer to Appendices 5 and 6 for examples of documentation typically used to assist the completion and record the output for Level 1 and Level 2 TRA.

### 10.3 TRA Approval

Task Risk Assessments requires consideration of both technical and operational considerations. The technical approval is from an appropriate Issuing Authority and the operational approval is from the appropriate Operational Manager. These may be the same person. The approver shall be independent of the Task Risk Assessment preparation for higher risk activities. Low risk activities (level 2-5) the approver may be part of the TRA team.

The Technical Approval shall confirm that:

1. Task risk assessment team has appropriate competencies.
2. All task steps have been identified.
3. All hazards have been identified.
4. Appropriate controls have been identified and the residual risk is at ALARP.
5. Risk assessment is appropriate (i.e. Level 1 or Level 2).

The Operational Approval shall confirm that:

1. The task being undertaken is necessary, the timing is appropriate and there are sufficient resources to undertake the task.
2. Appropriate stakeholders have been notified of the activity (or the impact of) and alternate supply arrangements have been made if necessary.
3. An appropriate emergency response plan and business continuity plan are in place.

The following table shows the approval authorities and minimum number of independent controls based on the residual risk level. Note that a High Residual Risk also requires Medium and Low Residual Risk Approvals, similarly a Medium Residual Risk also requires Low Residual Risk Approval. This ensures that all those involved in a task agree with the risk assessment.

**Table 1: Approval Authorities and Minimum Number Controls Matrix**

| Residual risk level | Minimum level of approval[1] | | Number of Controls[2] |
|---|---|---|---|
| | Technical | Operational | |
| 10 - 12 | Not allowed | | |
| 8 - 9 (High) | Subject Matter Expert (SME) and Level Two PTW Authority | PU Operations Manager | 3 |
| 6 - 7 (Medium) | Level Two PTW Authority | Regional Operations Manager | 2 |
| 2 - 5 (Low) | Level One PTW Authority | Site Manager | 1 |

Notes:

1. Each PU should define the specific authorities based on the guidance given in the table.
2. This table gives guidance as to the number of independent controls that should be considered for the associated risk level. If there is a need for more controls than this to achieve ALARP then they should be put in place and ensured to be effective.

Upon completion of a risk assessment and prior to execution of the task, the approval to proceed should be obtained from the authorising signatory for the highest recorded level of residual risk. The approval should confirm the recording of the risk assessment and that any residual risks have been considered and the identified hazards and risks are controlled to the point that the task(s) for the job can be conducted safely.

If the authorised signatory doubts that the risks are adequately controlled by the proposed means, the authorised signatory should seek additional controls to further mitigate the risk. A Level 1 TRA may be escalated to a Level 2 TRA.

## 11 PERFORM TASK

### 11.1 Permit to Work and Communication

This section discusses the approval to proceed and the importance of communications for the success of a TRA.

Before work commences the risk assessment shall have been approved and a Permit to Work shall be issued. The method statement and TRA are components of a Permit to Work. Other components could include an isolation plan, confined space entry permit and gas free certificate. The Permit to Work shall be approved by a competent person with the appropriate authority level (see Gen 3).

The success of a TRA depends on the effective communication of its results, so that the people who execute the job are to be fully aware of and thoroughly understand the hazards and the controls put in place.

The TRA document should be used as the basis of workforce communications so that all personnel concerned have an understanding of the following:

- Details of the steps involved in carrying out the task.
- Potential hazards identified for each step in the task.
- Control measures in place or planned and how they relate to the hazard(s).
- Individual actions and responsibilities at various steps in the task.
- Actions in the event of an emergency.

All involved in the task should be provided an opportunity to identify further hazards and control measures that might have been overlooked in the TRA. The TRA team leader should be notified if such improvements are identified.

### 11.2 Prerequisite and Supplementary Controls

Two types of control measures should be identified from either a Level 1 or Level 2 TRA process:

- Prerequisite controls: controls that should be in place prior to the job execution.
- Supplementary controls: controls that should be applied during the job.

Before the task is authorised to start, the person controlling the work activity shall confirm that:

- All the prerequisite controls are in place.
- The persons allocated to perform the task are competent to initiate and manage the supplementary controls.
- The output from the risk assessment and Work Permit have been “communicated in writing and signed off by all involved in the task” as discussed in GEN 3.
- Monitoring of the works is arranged
- Actions in the event of an emergency are understood

### 11.3 Performing the Task

Each person involved in actually performing the task should:

- Be satisfied that all the defined controls are in place and are effective even though the task has been duly authorised.
- Feel empowered and obligated to voice any doubts or concerns to their supervisor, including not starting the job and stopping any work considered unsafe.

### 11.4 Monitor for Condition Change

The TRA should include the work's monitoring frequency. However, personnel who execute the task should monitor their activities on an ongoing basis and should be alert to:

- Any new or unauthorised personnel.
- Conditions at the work site.
- Hazards generated by the activity.

- Hazards not originally covered by the TRA.

If necessary, the personnel should notify their supervisor and **'**stop the job**'** at a safe point so that the task hazards and risk can be re-assessed.

### 11.5 Emergencies

The TRA should include any credible emergencies and the responses and actions of personnel to ensure personal safety and minimise the impact of emergency to plant, the environment and operations.

### 11.6 Lessons Learned

It is important to capture lessons learned upon completion of work and incorporate the lessons into the process. This may be in the form of changes or revisions to:

- Links between a procedure and the underpinning TRA.
- TRA records.
- The TRA process, including team composition.

In the event of an accident, incident, or near-miss, the TRA should be reviewed. Three types of errors may have contributed to the accident, each of which may need different remedial actions:

- Hazard not identified during TRA.
- Hazard identified, but specified controls were ineffective.
- Hazard and controls identified, but controls not implemented as defined in the TRA.

Lessons learned should be communicated to all concerned through existing methods such as meetings, circulars, training and toolbox talks.

## 12 TRA AUTHORITIES AND TRAINING

### 12.1 TRA Authorities

A Level 1 Task Risk Assessor is a person who has:

1. Completed a HITRA training course and passed the assessment.
2. Been assessed as a Level 1 Permit to Work Authority.
3. Completed three Level 1 TRA and these have been reviewed by the country CoW Authority and considered acceptable.

A Level 2 Task Risk Assessor is a person who has:

1. Completed a HITRA training course and passed the assessment.
2. Been assessed as a Level 2 Permit to Work Authority.
3. Completed three Level 2 TRA and these have been reviewed by the country CoW Authority and considered acceptable.

## 12.2 Training

Training programs should be in place for every individual who has a role in conducting or participating in a Level 1 or 2 TRA. This section discusses the appropriate training program(s).

Personnel may take on the roles of TRA authorised signatories, Level 1 TRA assessors and Level 2 TRA team leaders only after successfully completing the appropriate training and capability assessment.

HITRA methodologies, although not complex, do rely on a wide body of knowledge underpinned by research and industry experience. This includes:

- Relevant hazards.
- Realistic consequences.
- Hierarchy of risk reduction measures or controls.

All personnel involved in the HITRA process should take the following basic training:

- Definitions of hazard, consequences, probabilities, risk, controls, hierarchy of controls and risk matrix.
- An understanding of the Air BP Safe Working Practices (GEN 51)
- The principles and process of TRA.
- When to conduct Level 1 and 2 TRAs.
- Other types of risk assessment: generic, quantified, major hazard and environmental.
- TRA tools (e.g., checklists).
- Expectations of team members: the need to contribute personal experience, reach agreement and record divergent views.
- Responsibility after the completion of the TRA (e.g., identifying changes at the task location).

Before selection for training, Level 2 TRA team leaders should have the ability to demonstrate an extensive knowledge of the work environment and settings. Team leaders should be able to apply informed judgment when using checklists and other available generic tools.

## 12.3 Records

The site should retain records of attendance and capability assessments and keep them readily available for auditing and verification.

## 12.4 Reassessment and Refresher Training

Personnel, who are considered experienced in the HITRA process, should be re-assessed at a frequency of no more than three years.

If a Level 1 or Level 2 Task Risk Assessor does not complete three TRAs a year their authority shall either be suspended until refresher training is successfully completed or removed if they no longer need to perform TRA.

## APPENDIX 1: TASK RISK ASSESSMENT TABLE (TRAT)

If there is any doubt on whether the Identified Task requires a Level 1 or Level 2 TRA, it is recommended to proceed with the Level 2 TRA process. All High Level 2 Tasks shall have Specialist input during the TRA.

| APPLICABLE GOLDEN RULE OF SAFETY | TASK UNDERTAKEN | LEVEL 1 TRA | LEVEL 2 TRA | | RELEVANT NOTES |
|---|---|---|---|---|---|
| | | | MEDIUM | HIGH | |
| **Energy Isolation** | Electrical Work | Low Voltage ≤ 1000 V | High Voltage >1000 V | N/A | Procedures specified in Electrical Rules ELEC 50 shall be followed |
| | Work on live electrical equipment with the risk of electrocution | Basic testing activities outside Hazardous areas | Basic testing activities within Hazardous areas Work on distribution boards | Work on transformers, electrical incomers etc. | |
| | Process piping (isolation) | ≤ 19 bar(g) | >19 bar(g) | Hot tapping | |
| | Pressure / leak testing | Hydrostatic (water) and Fuel ≤ 31 bar(g) | Hydrostatic (water) and Fuel > 31 bar(g)<br><br>Air ≤ 5 bar(g), | Air > 5 bar(g)<br><br>Nitrogen or other gases | Specialist expertise is required for nitrogen or other gases. |
| | Vehicle hydraulics (typically 200 bar) | All activities | N/A | N/A | |
| | Vehicle pneumatics (typically 7 bar) | All activities | N/A | N/A | |
| **Confined Space Entry** | Tank Entry | Not authorised | Tank entry - leaded and unleaded | Tank entry through man-ways < 600 mm. | Leaded entry requires Octel training. As an alternative to entry where < 600mm man-way exists, can a site specific waiver be requested or can an appropriate inspection be performed externally. |
| | Equipment Entry | Not authorised | Uncomplicated escape | Difficult escape | A difficult escape is where there is a risk of a rescue |

| APPLICABLE GOLDEN RULE OF SAFETY | TASK UNDERTAKEN | LEVEL 1 TRA | LEVEL 2 TRA | | RELEVANT NOTES |
|---|---|---|---|---|---|
| | | | MEDIUM | HIGH | |
| | | | | | harness snagging, e.g. on baffles. |
| | Below ground spaces | Not authorised | All, including valve chambers | N/A | (e.g. Pits, sumps, valve chambers) |
| | Entry in trenches or excavations | Not authorised | All Entry | | |
| **Ground Disturbance** | Excavations without personnel entry | ≤1.2 m deep | > 1.2 m deep<br><br>≥3m proximity to critical services | <3m proximity to critical services | Service locations shall be verified prior to commencement. Shall have relevant knowledge of services clearance and ground disturbance. Critical services include power, control systems, air, gas fuel systems, water and communications |
| | Boring, piling, micro-tunnelling, horizontal drilling etc. | Cone penetration tests | All boring and pilling etc. | Survey for explosive ordnance | |
| **Lifting Operation** | All Lifting Operations | Use of lifting equipment (cranes, forklift, franna, hyabb etc.) outside of Hazardous area<br><br>Simple lifts not over critical or vulnerable fuel containing equipment /pipe work or electrical distribution. | Use of cranes inside a hazardous zone<br><br>Simple lifts and lifts over critical or vulnerable fuel containing equipment/pipe work or electrical distribution. | Complex lifts e.g. tandem or using a crane / forklift to lift personnel. | All lifts require a lift plan. Critical lists required a "Critical Lift Plan".<br><br>Forklifts may be covered by a standard operating procedure. |
| | Near limits of crane SWL at radius | Not authorised | Not authorised | For loads ≥ 80% of crane SWL at radius | |

| APPLICABLE GOLDEN RULE OF SAFETY | TASK UNDERTAKEN | LEVEL 1 TRA | LEVEL 2 TRA | | RELEVANT NOTES |
|---|---|---|---|---|---|
| | | | MEDIUM | HIGH | |
| **Working at Heights** | Portable Staging (Scaffolding). | Work @ ≤ 5m | Work @ > 5m ≤ 18m | Work @ > 18m | Working within a fixed platform (e.g. tank top or completed scaffolding), is not a WP activity. Shall ensure ground conditions are assessed for the equipment. Shall have relevant Working at Heights training applicable to equipment |
| | Mobile Elevated Working Platform (e.g. boom lift, scissor lift) | Work @ ≤ 5m within restricted areas and outside hazardous areas | Within hazardous area and all work @ > 5m ≤ 18m | Within hazardous area and all work @ > 18m | |
| | Working over water | Not authorised | All work over water | | |
| | Abseiling / rappelling | Not authorised | Not authorised | All activities | Specialist expertise shall be required |
| **Hot Work** | Welding, grinding, grit blasting, drilling (use of electrical or battery operated equipment) etc. | Within restricted area and outside hazardous areas | Within hazardous area | In confined “hazardous” spaces | Hazardous area is defined by site hazardous area drawings. |
| | | Non-fuel sites (e.g. new construction) | N/A | | |

| APPLICABLE GOLDEN RULE OF SAFETY | TASK UNDERTAKEN | LEVEL 1 TRA | LEVEL 2 TRA | | RELEVANT NOTES |
|---|---|---|---|---|---|
| | | | MEDIUM | HIGH | |
| | Unauthorised vehicle / plant / equipment entering into Restricted Area | Within restricted area and outside hazardous areas | Within hazardous area | N/A | Hazardous area is defined by site hazardous area drawings. Unauthorised vehicles / plant/ equipment are those associated with non-routine activities.<br><br>Authorised vehicles are authorised by the site managed for entering into restricted areas except for hazardous areas where a permit is required.<br><br>Definition for Authorised Vehicles - the vehicles associated with transporting of hydrocarbon and maintenance vehicles without gasoline/petrol engines. |
| | Use of motorised equipment (e.g. chainsaws) | Not authorised | All activities | N/A | This will apply when this work is being undertaken at either Ground Level or Working at Heights. Refer to Working at height sections for further information. |
| **Cold Work** | Tasks for maintenance or construction work where there is no possibility of ignition | All activities | N/A | N/A | |

| APPLICABLE GOLDEN RULE OF SAFETY | TASK UNDERTAKEN | LEVEL 1 TRA | LEVEL 2 TRA | | RELEVANT NOTES |
|---|---|---|---|---|---|
| | | | MEDIUM | HIGH | |
| | occurring, as there is no sources of ignition or sources of flammable vapour | | | | |
| **Other** | Workshop operations | Individual hazardous activities not covered by the list of standard workshop activities | Blanket WP for standard list of workshop activities | Unlikely for activities considered appropriate for workshop | Equipment that has contained hydrocarbons shall be gas freed.<br><br>Blanket Work permit covers all activities that have been listed and risk assessed for workshop activities. |
| | Diving operations | Not authorised | Not authorised | All activities | |
| | Asbestos, lead sludge or lead paint removal | Not authorised | All removal activities | N/A | Specialist expertise shall be required |
| | Demolition of facilities | Dismantling or cold cutting | Shearing or breaking operations | Controlled collapse | |
| | Radioactive sources | Instrumentation work | Local Radiography | Extensive Radiography | Specialist expertise required.<br>Local Radiography - X ray / Gamma shots at grade over one shift (source not stored on site overnight).<br>Extensive Radiography - X-ray / Gamma shots at height (5m and above) and over more than one shift and / or when the source is stored on site. |

| APPLICABLE GOLDEN RULE OF SAFETY | TASK UNDERTAKEN | LEVEL 1 TRA | LEVEL 2 TRA | | RELEVANT NOTES |
|---|---|---|---|---|---|
| | | | MEDIUM | HIGH | |
| | Concrete breaking / cutting | In restricted area outside of hazardous area | In hazardous area | N/A | Hazardous area is defined by site hazardous area drawings. |
| | Water jetting | Jet pressures ≤ 150 bar | Jet pressures > 150 bar < 1500 bar. | ≥1500 bar | As used for tank bottom cleaning instead of grit blasting: this is not steam cleaning. Also sometimes used for other cleaning. |
| | Working in/with Nitrogen atmospheres | Not authorised | Not authorised | All such work (e.g. pigging, purging) | |

## APPENDIX 2: SOURCES OF HARM

| Source of Harm | Description / guidance |
|---|---|
|  Biological | **Biological** - covers the many sources of energy in life forms, including wildlife and viruses or bacteria, e.g., as found in sewage systems, drain lines, cooling towers). |
|  Body Mechanics | **Body Mechanics** - human strength and agility applied to a task involving lifting, pushing, pulling, climbing or positioning. |
|  Chemical | **Chemical** - energy in the form of reactive or like-threatening gases, liquids, solids, e.g., water, methane, nitrogen, process chemicals, etc. |
|  Electrical | **Electrical** - includes all types and voltages of electricity including high voltage power systems (Alternating Current (AC)), battery systems (Direct Current (DC)) and static.<br>Consideration should be given to whether the task:<br>• Requires equipment related to the task or in the area of the task to be isolated.<br>• Involves electricity powered equipment.<br>• Is in an area where there is vulnerable electrical equipment such as insulated cabling, un-insulated overheads power lines, etc.<br>• Involves transfer of fluids, powers, etc. or friction between non-conducting materials which could generate static electrical charges. Are systems and equipment where this could occur adequately grounded and / or bonded. |
|  Gravity | **Gravity** - a naturally occurring energy that causes tools, equipment or people to fall or move. This affects lifting task, work at height and potential dropped objects |
|  Mechanical | **Mechanical** - includes mobile equipment as well as moving parts on stationary equipment and rotating equipment. Even though items are non-powered, their momentum as they are moved may crush or cut people or vulnerable equipment. Also includes sharp edges of tools and / or equipment. |
|  Noise | **Noise** - A form of pressure energy.<br>Consideration should be given to whether:<br>• The task is in a high noise area.<br>• Noisy tools / equipment will be used.<br>• Noise could cause communication problems, including in any emergency. |

| Source of Harm | Description / guidance |
|---|---|
|  Pressure | **Pressure** - air, water, pneumatics, springs, gases are all possible sources of significant pressure energy.<br>Consideration should be given to:<br>• Non-Return Valves (NRVs) where system contents may be trapped between the NRV and an isolation point.<br>• Section of equipment in which trapped or undrained contents may remain.<br>• General equipment / line condition, e.g., area of corrosion, where a pressured leak is foreseeable.<br>• Reaction forces from a pressure leak, which may move an unrestrained item, such as a hose, cylinder or pipe segment. |
|  Radiation | **Radiation** - in the form of sunlight, radio waves or ionizing radiation (radioactivity). |
|  Thermal | **Thermal** - energy associated with hot or cold surfaces and fluids, undesired chemical reactions and / or ambient temperatures. |
|  Human Factors | **Human Factors** - hazards associated with the human element when undertaking the task, e.g. communication. |
|  SIMOPS | **SIMOPS** - hazards associated with other activities on going simultaneously with the task. |
|  Weather | **Weather** - hazards associated with weather conditions that could affect the task, e.g. rain, wind, cold, heat. |

## APPENDIX 3: HAZARD IDENTIFICATION GUIDE

The hazard identification guide below is not an all-inclusive list of potential hazards. It should be used to stimulate discussion.

| Source of Harm | Hazard |
|---|---|
| Biological | Biological pathogens (e.g. malaria, legionnaire's disease, sewage pathogens)<br>Cold, Flu and Norovirus<br>Communicable diseases - HIV, Hepatitis<br>Communicable diseases - SARS, Bird Flu<br>Contaminated water<br>Dehydration<br>Eye strain (e.g. from arc welding, lasers, stroboscopic effect)<br>Fatigue Workplace Induced<br>Flora (e.g. poison ivy)<br>Food Poisoning<br>Lighting (Display Screen Equipment and General)<br>Medication Employee<br>Stress - Work Place Induced<br>Toxic and carcinogenic substances<br>Vermin (e.g. rats, snakes, birds) |
| Body Mechanics | Lifting, carrying, lowering<br>Pulling, pushing<br>Object weight or shape<br>Repetitive movement or posture<br>Working methods or positions<br>Obstructions on worksite<br>Vibration (from use of tool) |
| Chemical | Asbestos<br>Asphyxias gases<br>Asphyxias liquids (e.g. water)<br>Asphyxias solids (e.g. food)<br>Aviation fuel contact with skin |

| | |
|---|---|
| | Carbon monoxide<br>Environmental releases (sparks, dusts, fuming)<br>Lead<br>Oxygen deficient atmospheres<br>Rain<br>Refrigerant<br>Toxic chemicals<br>Unexploded ordnance |
| Electrical | Batteries<br>Friction<br>High voltages<br>Lightening<br>Sparks (from e.g. spark plugs in an engine)<br>Static |
| Gravity | Dropping of materials/objects<br>Falling from a height<br>Falling into a hole (including fall into liquid of tank or sump)<br>Falling from a working level (slips and trips)<br>Overturning of machine/object |
| Mechanical | Breakage/shock loading<br>Conveyor tension weight<br>Counterweight<br>Ejection of work piece or part of tool e.g. cartridge tool<br>Moving parts (entanglement, impact) including equipment that may strike or stab someone e.g. drill<br>Sharp edges<br>Springs under compression<br>Springs under tension<br>Swarf<br>Turbine variable inlet guide vanes<br>Vehicle movement |

| | |
|---|---|
| Noise | Operating equipment (e.g. pumps, compressors)<br>Tools |
| Pressure | Compressed air or gasses<br>Hydro blasting<br>Hydro jetting<br>Process fluids (hydrocarbon fluids) under pressure<br>Steam<br>Vacuum equipment<br>Wind |
| Radiation | Microwave/radio waves<br>UV/IR<br>Lasers<br>NORM<br>X-rays or other ionising radiation |
| Thermal | Ambient temperatures (hot or cold)<br>Auto ignition of hydrocarbon fluid in droplets<br>Dust (dust cloud explosion)<br>Endothermic chemical reactions<br>Exothermic chemical reactions<br>Explosives<br>Flames<br>Frozen substances<br>Hot or cold fluids<br>Hot or cold surfaces<br>Portable or fixed heater<br>Refrigerant<br>Welding arcs/sparks |
| Human Factors | Communication<br>Competency<br>Cultural aspects<br>Lone working |

| | |
|---|---|
| | Physical attributes<br>Workplace violence |
| Simultaneous Operations | Routine operations (e.g. tank operations, vehicle movements, plant and/or vehicle maintenance)<br>Other non-routine operations<br>Third Party Visitors<br>Third Party works on site boundary |
| Weather | Rain<br>Wind<br>Cold<br>Heat<br>Sunlight |

## APPENDIX 4: RISK EVALUATION TABLES

The following tables and matrixes represent a subset and are consistent except as noted in the below table, they combine types of impact that were separated in GDP 3.1-0001 Assessment, Prioritization and Management of Risk.

**Table 2: Consequence impact table**

| Consequence impact level | Health and safety | Environment | Non-financial impact |
|---|---|---|---|
| **D (Inclusive of A, B & C)** | 3 or more fatalities (or onset of life-threatening health effects)<br>30 or more injuries or health effects, either permanent or requiring hospitalisation for more than 24 hours. | Future impact as below or greater-<br>Extensive damage to a non-sensitive environment or localized damage to a sensitive environment, all of which can be restored to an equivalent capability in a period of around 1 year.<br>Widespread damage to a non-sensitive environment or extensive damage to a sensitive environment, all of which can be restored to an equivalent capability in a period of months. | Severe enforcement action or loss of licence to operate, in respect of a material asset in any market, or any asset or in a major market, (US, European Union (EU), Russia) or the threat of global loss of licence to operate.<br>Interventions from governments.<br>Public or investor outrage.<br>'Interest group' outrage in a major market.<br>Prolonged adverse national or international media attention.<br>Widespread adverse social impact.<br>Damage to relationships with key stakeholders of benefit to the Group or segment. |
| **E** | 1 or 2 fatalities<br>10 or more injuries or health effects, either permanent or requiring hospital treatment for more than 24 hours. | Future impact-<br>Localized damage or extensive damage to a non-sensitive environment, which can be restored to an equivalent capability in a period of around 1 year, or a period of months, respectively.<br>Localized damage or extensive damage to a sensitive environment, which can be restored to an equivalent capability in a period of months, or a period of days or weeks respectively. | Other adverse enforcement action by regulators.<br>Limited 'interest-group' outrage<br>Short-term adverse national or international media coverage.<br>Damage to relationships with key stakeholders of benefit to the Strategic Performance Unit (SPU). |

| Consequence impact level | Health and safety | Environment | Non-financial impact |
|---|---|---|---|
| **F** | Permanent partial disability(ies)<br>Several non-permanent injuries or health impacts.<br>DAFWC (Days Away From Work Case) | Future impact-<br>Localized damage to a non-sensitive environment or an immediate area damage to a sensitive environment all of which can be restored to an equivalent capability in a period of months.<br>Extensive damage to a non-sensitive environment or localized damage to a sensitive environment all of which can be restored to an equivalent capability in a period of days or weeks. | Regulatory compliance issue that does not lead to regulatory or other higher severity level consequence.<br>Prolonged local media coverage.<br>Local adverse social impact.<br>Damage to relationships with key stakeholders of benefit to the Performance Unit (PU). |
| **G** | Single or multiple recordable injury or health effects from common source/event. | Future impact-<br>Immediate area damage or localized damage to a non-sensitive environment, which can be restored to an equivalent capability in a period of months or in a period of days or weeks, respectively.<br>Future impact with localized damage to a non-sensitive environment and that may be restored to an equivalent capability.<br>Immediate area damage to a sensitive environment that can be restored to an equivalent capability in a period of days or weeks. | Short-term local media coverage.<br>Some disruption to local operations, e.g., loss of single road access less than 24 hours. |
| **H** | First aid<br>Single or multiple over-exposures causing noticeable irritation but no actual health effects | Future impact with immediate area damage to a non-sensitive environment that can be restored to an equivalent capability in a period of days or weeks. | Isolated and short-term complaints from neighbours, (e.g., complaints about specific noise episode). |

**Table 3: Consequence and probability risk matrix**

| | | Probability | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Impact Level | Remote possibility - A similar event has not yet occurred in our industry | Similar event has occurred somewhere in our industry and within the BP group | Likely to occur once or twice in lifetime of Air BP[1] | Event likely to occur several times in the lifetime of Air BP[1] | Common occurrence (at least annually) in Air BP[1] |
| Consequence | D | 6 | 8 | 10 | 11 | 12 |
| | E | 5 | 7 | 9 | 10 | 11 |
| | F | 4 | 6 | 8 | 9 | 10 |
| | G | 3 | 5 | 7 | 8 | 9 |
| | H | 2 | 4 | 6 | 7 | 8 |

Note:

1. For the purposes of HITRA the Air BP Entity is defined as the facility.

## APPENDIX 5: LEVEL ONE RISK ASSESSMENT TEMPLATE

# Air BP Ltd
# LEVEL 1 TASK RISK ASSESSMENT

| | | | | |
|---|---|---|---|---|
| Company: | | Brief Description of the Job: | TRA No: | |
| Recipient: | | | Contractor JSA/SWMS No: | |
| Location of Worksite: | | | Permit No: | |
| Date: | | | | |

**TRA Team Members**

| Name | Initial | Name | Initial |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**TRA Approval**

| Recipient | |
|---|---|
| Name: | |
| Signature: | |
| **Air BP Representative** | |
| Name: | |
| Signature: | |

**TRA Approval**

| Approval Authority | Position | Signature | Date |
|---|---|---|---|
| | | | |
| | | | |

I agree with the control measures required to perform the tasks based on the identified tasks and hazards and approve the use of this Level 1 TRA (signed approval required which can be recorded with use of fax, email or other electronic means).

**Sources of Harm:**



**Hazards:**

Task Hazards
Job site hazards
Process Hazards

## Risk Assessment

| TRA No: | | Page of |
|---|---|---|

| TASK | SOURCE OF HARM | HAZARD | CONTROL | PERSON RESPONSIBLE |
|---|---|---|---|---|
| List the tasks required to perform the activity in the sequence they are carried out | Select the relevant Source of Energy | Describe all hazards identified for each TASK. Consider Task hazards, Job site hazards, Process hazards, SIMOP's and Human Factors | Describe all controls applicable for each hazard. Use the Hierarchy of Controls. | Who is responsible to implement the control measure identified? Name required of person |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Copy Risk Assessment page as necessary.

## APPENDIX 6: LEVEL TWO RISK ASSESSMENT TEMPLATE

# Air BP Ltd
# LEVEL 2 TASK RISK ASSESMENT

| | | |
|---|---|---|
| Job Title: | | Brief Description of Job: |
| Area /Location: | | |
| Work Permit Set No: | | |
| Date Performed: | | |
| Date of Work Site Visit: | | |
| Contractor JSA/SWMS No: | | |

**NOTE: Following to be completed at the end of the Level 2 Risk Assessment.**

### TRA Facilitator

| Name | Position | Signature | Date |
|---|---|---|---|
| | | | |
| I agree with the residual risk levels and control measures required to perform the tasks based on the identified tasks and hazards. I have instructed the TRA Team Members in the TRA process and their roles and have verified that the team understands the assessment process and what the process is trying to achieve. Additionally, I attest that the members of the TRA team have visited the job site to identify and document hazards associated with the physical layout of the area which are pertinent to the permit related tasks to be performed. | | | |

### TRA Team Members

| Name | Position | Signature | Date |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| We confirm we have been instructed in the TRA process and understand our role in this process. We agree with the residual risk levels and control measures required to perform the tasks based on the identified tasks and hazards, and therefore recommend the task for the appropriate approval. | | | |

| TRA Approval | TRA No. | | Page of |
|---|---|---|---|
| **Approval Authority** | **Position** | **Signature** | **Date** |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| I agree with the residual risk levels and control measures required to perform the tasks based on the identified tasks and hazards and approve the use of this Level 2 TRA (signed approval required which can be recorded with use of fax, email or other electronic means). | | | |

**Sources of Harm:**



**Hazards:**

Task Hazards
Job site hazards
Process Hazards

**Risk Matrix:**

| | | Probability | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Impact Level | Remote possibility - A similar event has not yet occurred in our industry | Similar event has occurred somewhere in our industry and within the BP group | Likely to occur once or twice in lifetime of Air BP | Event likely to occur several times in the lifetime of Air BP | Common occurrence (at least annually) in Air BP |
| Consequence | D | 6 | 8 | 10 | 11 | 12 |
| | E | 5 | 7 | 9 | 10 | 11 |
| | F | 4 | 6 | 8 | 9 | 10 |
| | G | 3 | 5 | 7 | 8 | 9 |
| | H | 2 | 4 | 6 | 7 | 8 |

| Risk Assessment | | | | TRA No. | | | | Page of |
|---|---|---|---|---|---|---|---|---|
| **TASK** | **SOURCE OF HARM** | **HAZARD** | **CONSEQUENCE** | **CONTROL** | **RESIDUAL RISK** | | | **PERSON RESPONSIBLE** |
| List the tasks required to perform the activity in the sequence they are carried out | Select the relevant Source of Energy | Describe all hazards identified for each TASK. Consider Task Hazards, Job site hazards, Process hazards, SIMOP's and Human Factors | Describe all consequences for each hazard | Describe all controls applicable for each hazard. Use the Hierarchy of Controls. | Decide on the Level of Risk using the Level 2 RA Matrices. **Is the Task safe to do?** | | | Who is responsible to implement he control measure identified?<br><br>Name Required of person |
| | | | | | C | P | Risk Level | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Copy Risk Assessment page as necessary.