



# Procedure for Task Risk Assessment

## AZSPU-HSSE-DOC-00063-2

<b>Authority:</b>	AzRPU Health & Safety Manager Offshore (Yuliy Zaytsev)	<b>Custodian:</b>	AzRPU CoW/Safety Systems Lead (Elman Shikhkerimov)
<b>Scope:</b>	AzRPU	<b>Document Administrator:</b>	HSE Document Coordinator
<b>Issue Date:</b>	09 September 2004	<b>Issuing Dept:</b>	AzRPU Health & Safety Offshore, HSE & Engineering
<b>Revision Date:</b>	29 December 2010	<b>Control Tier:</b>	2
<b>Next Review Date:</b>	29 December 2012		

Control Tier: &lt;&lt;2&gt;&gt;

Document Number: &lt;&lt; AZSPU-HSSE-DOC-00063-2&gt;&gt;

Revision Date: &lt;&lt;29 December 2010&gt;&gt;

Print Date: 2/1/2011

PAPER COPIES ARE UNCONTROLLED. THIS COPY VALID ONLY AT THE TIME OF PRINTING. THE CONTROLLED VERSION OF THIS DOCUMENT CAN BE FOUND AT <http://docs.bpweb.bp.com/dkazspu/component/hssesms>

## TABLE OF CONTENTS

<b>1</b>	<b>PURPOSE / SCOPE .....</b>	<b>3</b>
<b>2</b>	<b>DEFINITIONS.....</b>	<b>4</b>
<b>3.</b>	<b>GENERAL REQUIREMENTS .....</b>	<b>4</b>
3.1	Legislation & Standards .....	5
3.2	Company Requirements .....	5
3.3	Stopping Unsafe Work.....	5
3.5	SSOW Specific Cross References .....	5
3.6	Language Facilitation .....	5
<b>4.</b>	<b>ROLES AND RESPONSIBILITIES.....</b>	<b>6</b>
4.1	Site Manager (SM) / Site Controller (SC) / Offshore Installation Manager (OIM) .....	6
4.2	Area Authority .....	6
4.3	Performing Authority .....	6
4.4	Task Risk Assessment Team Leader (Area Authority) .....	7
4.5	Individual TRA Member .....	7
4.6	People carrying out the Work .....	7
4.7	Marine Authority.....	7
<b>4.8</b>	<b>AUDITING AND MONITORING.....</b>	<b>7</b>
<b>4.9</b>	<b>COMPETENCY, TRAINING AND AWARENESS .....</b>	<b>8</b>
<b>5.</b>	<b>RISK ASSESSMENT LEVELS.....</b>	<b>8</b>
5.1	Level 1 Risk Assessment Guidance Notes .....	9
5.2	Level 2 Risk Assessment Guidance Notes .....	9
5.3	NORMAL LEVEL 2 RISK ASSESSMENT.....	10
	Manual and mechanical excavations less than 1.2m deep.....	11
5.3.1	OPERATIONAL RISK ASSESSMENT .....	11
5.3.2	STAND-ALONE RISK ASSESSMENT.....	13
5.3.3	ISOLATION RISK ASSESSMENT .....	13
5.3.4	SAFETY OVERRIDES RISK ASSESSMENT.....	14
5.4	Level 2 Risk Assessment Team .....	14
<b>5.5</b>	<b>THE STAGES OF RISK ASSESSMENT .....</b>	<b>15</b>
5.5.1	Defining the Task to be Assessed.....	15
5.5.2	L1RA Specific .....	16
5.5.3	L2RA Specific .....	16
5.6	Identifying the Hazards.....	16
5.6.1	Identifying the Hazard Effects .....	16
5.7	Existing Control Measures .....	17
5.7.1	Evaluate the Risk .....	18
5.7.2	Determining the Additional Controls Required.....	19
5.7.3	Allocating Responsibilities for Control Actions .....	20
5.7.4	Re-evaluate the Risks for Acceptability.....	20
5.7.5	Implementation of Control Measures.....	21
5.7.6	Task Inspection Checklist.....	22
5.7.7	Toolbox Talks.....	22
<b>5.8</b>	<b>MANAGEMENT OF RISK .....</b>	<b>23</b>
5.8.1	Approval .....	23
5.8.2	Recording the Risk Assessment .....	23

<b>APPENDIX A: Hazard Checklists.....</b>	<b>23</b>
<b>APPENDIX B: Risk Assessment Chart.....</b>	<b>26</b>
<b>APPENDIX C: L2RA Form .....</b>	<b>27</b>
<b>APPENDIX D: Risk Assessment Flow-path .....</b>	<b>29</b>
<b>APPENDIX E: Risk Hierarchy Examples .....</b>	<b>30</b>
<b>APPENDIX F: Task Inspection Checklist (example) .....</b>	<b>31</b>

## **1 PURPOSE / SCOPE**

It is a requirement of the Permit to Work procedure employed within BP AzRPU that a Task Risk Assessment is carried out before any permits are issued.

The purpose of this procedure is to describe the Task Risk Assessment process employed by BP AzRPU in support of the Permit to Work System.

The contents of this procedure are applicable to all BP owned and managed sites / installations in Azerbaijan and Georgia. Contractors working on BP owned or managed sites / installations are also responsible for alignment with this procedure.

This document does not replace the procedures prepared and adopted by specialist contractors. Neither does it supersede any national and local regulatory requirements.

All guidelines contained shall be regarded as the minimum requirements for BP owned or managed sites / installations in Azerbaijan and Georgia.

The scope covers defined activities of BP and Contractors at all BP AzRPU sites and installations.

## 2 DEFINITIONS

AA	Area Authority
AAA	Affected Area Authority
AEP	Authorised Electrical Person
ALARP	As Low as Reasonably Practicable
AOM	Area Operations Manager
CBT	Computer Based Training
COSHH	Control of Substances Hazardous to Health
COW	Control of Work
CRO	Control Room Operator
CSE	Confined Space Entry
CW	Cold Work
FP	Formal Procedure
HWNF	Hot Work Naked Flame
HWSP	Hot Work Spark Potential
IA	Isolating Authority
ICC	Isolation Control Certificate
IL	Integrity level, highest of Safety Integrity Level (SIL), Environmental Integrity Level (EIL) and Commercial Integrity Level (CIL)
IRA	Isolation Risk Assessment
L2RA	Level 2 Risk Assessment
LTI	Long-Term Isolations
MA	Marine Authority
OIM	Offshore Installation Manager
ORA	Operational Risk Assessment
PA	Performing Authority
PTW	Permit to Work
PTWC	Permit to Work Coordinator
PUL	Performance Unit Leader
REP	Responsible Electrical Person
RTC	Risk It, Talk It, Check It Pre-Task risk Assessment
SARA	Stand Alone Risk Assessment
SC	Site Controller
SM	Site Manager
SSOW	Safe System of Work
TRA	Task risk Assessment
TA	Technical Authority
TBT	Toolbox Talk
DRE	Discipline Responsible Engineers (instrumentation/ electrical process mechanical etc)
RPU	Regional Production Unit

## 3. GENERAL REQUIREMENTS

- Operating Management System OMS Essentials 2.3, 3.1 and 4.5.
- BP Group Guidance Hazard Identification and Task Risk Assessment GG 3.1-0002
- BP Group Defined Practice for Control of Work GDP 4.5-0001

### 3.1 LEGISLATION & STANDARDS

The aim of this Safe System of Work is to achieve "no accidents", "no harm to people" and "no damage to the environment". To achieve this aim, this SSOW complies with National Legislation, the terms of the Production Sharing Agreement (PSA) and mandatory BP Standards.

The best International Oil Industry practice and relevant goal setting legislation have been adopted to reduce the level of risk to as low as reasonably practicable and therefore well below that mandated by applicable statutory laws and regulations.

In the absence of local regulations, BP Group Standards will apply. In addition, appropriate UK and US regulations and industry best practice have been considered in setting suitable goals and targets.

### 3.2 COMPANY REQUIREMENTS

It is a company requirement that all tasks are subjected to an assessment of risk to demonstrate that risks have been reduced to as low a level as reasonably practicable (ALARP). This can be achieved by complying with the Company's existing standards. Where compliance with Company standards cannot reasonably be achieved, a formal level 2 Risk Assessment will be undertaken to identify any additional controls and demonstrate that risks remain as low as reasonably practicable.

### 3.3 STOPPING UNSAFE WORK

To stop the continuation of potentially unsafe work at the earliest possible stage, the Control of Work (CoW) Procedure and this Task Risk Assessment procedure make it very clear that all personnel are obliged and have the obligation to "**STOP**" the work that they consider to be unsafe.

### 3.5 SSOW SPECIFIC CROSS REFERENCES

This procedure shall, where appropriate, be used in conjunction with this suite of AzSPU Procedures referenced below.

Document Number	Title of Procedure
<a href="#">AZSPU-HSSE-DOC-00060-2</a>	Procedure for Permit To Work
<a href="#">AZSPU-HSSE-DOC-00063-2</a>	Procedure for Task Risk Assessment
<a href="#">AZSPU-HSSE-DOC-00048-2</a>	Procedure for Energy Isolations-Electrical
<a href="#">AZSPU-HSSE-DOC-00049-2</a>	Procedure for Energy Isolations-Process
<a href="#">AZSPU-HSSE-DOC-00055-2</a>	Procedure for Leak Testing
<a href="#">AZSPU-HSSE-DOC-00013-2</a>	Procedure for Confined Space Entry
<a href="#">AZSPU-HSSE-DOC-00058-2</a>	Procedure for Management of Radioactive Materials & Radiation Generators
<a href="#">AZSPU-HSSE-DOC- 00002-2</a>	Procedure for Control of Work Standard
<a href="#">AZSPU-HSSE-DOC-00088-2</a>	Procedure for Control of Work Training Policy

### 3.6 LANGUAGE FACILITATION

Due to the various languages spoken at sites / installations, there is a necessity to assist all with "an ease of understanding". Therefore, the development and use of information tools are available.

## 4. ROLES AND RESPONSIBILITIES

### 4.1 SITE MANAGER (SM) / SITE CONTROLLER (SC) / OFFSHORE INSTALLATION MANAGER (OIM)

The Site Manager / Site Controller / Offshore Installation Manager shall be responsible and accountable for the application of this procedure in his area of responsibility, He shall ensure:

- That adequate numbers of Competent responsible persons are appointed to manage and maintain the requirements of this procedure
- That this procedure is strictly adhered to for all occasions when it is identified that task risk assessments are to take place.
- That formal records of all task risk assessments are maintained in accordance with this procedure
- That the task risk assessment Process is applied at sites within their area of responsibility
- Periodic internal reviews and / or audit of the operations of task risk assessment
- Appointing individuals to act as task risk assessment Team Leaders to facilitate the TRA process
- The review of all Level 2 Risk Assessments.

Note: It is incumbent on the SM / SC / OIM to request a higher level of Risk Assessment should they consider that risks have not been fully addressed.

### 4.2 AREA AUTHORITY

The Area Authority shall be responsible for ensuring that the requirements of this procedure are adhered to for all task risk assessments conducted within his area of responsibility. He shall be responsible for ensuring:

- That all persons are instructed on the requirements of task risk assessment, permit to work conditions, and any risks or hazards associated with the work activity
- The level of Risk Assessment required for the task
- Organising and participating in the Task Risk Assessment process
- That the Performing Authority participates in Risk Assessments, and conducts Toolbox Talks associated with the work activity
- Ensure that the TRA is transferred in all appropriate languages commonly used by the workforce, where required.

### 4.3 PERFORMING AUTHORITY

The Performing Authority shall ensure:

- The compliance of all personnel under their supervision with this procedure when involved in risk assessed activities
- That a risk assessment has been performed and a toolbox talk conducted
- That all personnel are informed of, and understand, the risks associated with the task they are performing, and any associated works that may affect their work activity
- That the activity is executed in accordance with this procedure
- That works are halted if an unsafe situation occurs.
- That good housekeeping practices are implemented at all work areas
- That work activities have been reviewed and pertinent information exchanged with all other affected parties.

#### 4.4 TASK RISK ASSESSMENT TEAM LEADER (AREA AUTHORITY)

The main responsibilities of the TRA Team Leader are to:

- Lead the team in performing a Level 2 Risk Assessment
- Ensure the team understands the assessment process
- Take responsibility for maintaining the quality of the TRA
- Ensure that the assessment team includes personnel with all the necessary experience, knowledge and competence for the task involved
- Ensure that the TRA includes a worksite visit
- Ensure that all members of the TRA team have a full opportunity to contribute and that the details of the assessment are agreed by all team members
- Ensure that the details of the assessment are accurately recorded

#### 4.5 INDIVIDUAL TRA MEMBER

The responsibilities of individual team members are to:

- Actively participate in the TRA process
- Help identify hazards and control measures to reduce the likelihood of an incident/accident occurring
- Ensure they agree with the overall TRA before approval, ensuring that risks have been reduced to as low as reasonably practicable

#### 4.6 PEOPLE CARRYING OUT THE WORK

The responsibilities of the people carrying out the work are to:

- Understand the hazards, risks and controls associated with the task
- Participate and contribute in the Toolbox Talk
- Actively monitor the worksite and surroundings for changes
- Stop the job at any time if they have concerns about the safety of the task
- Sign to confirm that they understand the hazards and controls

#### 4.7 MARINE AUTHORITY

- MA is accountable for assigning appropriately experienced marine practitioners to the risk assessment. He is responsible for reviewing and approving Marine or Marine Operations Risk Assessment.

#### 4.8 AUDITING AND MONITORING

Each Asset shall:

- Undertake internal audits of the operation of the Risk Assessment process as part of the Safe Systems of Work at each Operating facility: Site / Installation.
- Maintain an Audit Register.
- Have in place a system for tracking recommendations

Use of a Standard Audit Checklist is recommended, to allow comparison with external audit results.

The recommended frequency of Audit is as follows:

Supervisor/ Area Authority	Minimum of 2 per week
Site Safety Adviser	Minimum of 1 permit per week
Site Manager/Site Controller/OIM	Minimum of 1 permit per month

Site Managers / Site Controllers / Offshore Installation Managers shall carry out regular internal reviews of the findings of Risk Assessment Audits, to ensure that any critical failings in the system, or its manner of implementation, have been identified and appropriate actions have been, or are being, taken.

#### 4.9 COMPETENCY, TRAINING AND AWARENESS

All personnel involved in the use of the Risk Assessment process shall be trained and proven to be competent.

The competency of all relevant personnel shall be established during the planning process for a particular risk assessment. The Area Authority and/or Line Supervisor shall ensure that the personnel involved in the activity have the correct competencies through records or requesting individuals to produce relevant certification.

All training and competency requirements shall be followed as described in CoW Training Policy [AZSPU-HSSE-DOC-00088-2](#)

**Note:** Toolbox Talks are an essential part of the Risk Assessment Process. All users of this SSOW should contribute at this point.

##### 4.9.1 RECORDS

Records of attendance and competency will be filed for future reference / verification by Senior Management. Risk Assessments shall be uniquely numbered and retained (preferably in electronic format).

### 5. RISK ASSESSMENT LEVELS

The process of Task Risk Assessment (TRA) is a method for systematically examining an individual work assignment (task), to identify the hazards, evaluate the risks and specify appropriate controls.

There are 2 levels of risk assessment defined within the process:

#### Level 1

Level 1 is a broad overview of the task by a Area Authority (AA) (typically the Team Leader and the Performing Authority (PA) to identify any hazards involved and appropriate control measures which are required to be in place to allow the job to proceed.

#### Level 2

Level 2 is a formal assessment, which is required only when the AA's judge that there are greater hazards or complexities associated with the task, which requires a more rigorous level of assessment. A team of minimum 2 personnel carries out this assessment.

All Risk Assessments require input from those who will be doing the work. In addition, some Level 2 Risk Assessments may require the input of expertise from outside the normal site / installation team.

Previously carried out L2 Risk Assessments (L2RA) can be used for repeat tasks.

**Note:** Whenever a previous L2RA is re-used then it is critical that the details of the TRA



are reviewed to ensure that the scope of the task is still relevant, conditions have not changed and that the hazards and control measures are still appropriate. A new L2RA Front-Sheet must be completed, to capture details of the new review team. If conditions have changed, the TRA should be reviewed, revised and approved before it is re-used.

## 5.1 LEVEL 1 RISK ASSESSMENT GUIDANCE NOTES

A Level 1 Risk Assessment is based on section 1 and 2 of the Permit. The Permit Form provides the prompt list and structured approach for this level of Risk Assessment.

Different Permits have different prompt lists in section 2.

A Level 1 Risk Assessment involves a review of the task by the PA in consultation with the Area Authority to identify the hazards associated with the task and appropriate control measures required to manage these hazards. The PA's in using their technical competence and task information from section 1 selects the hazards from a list.

The PA then uses the controls listed in section 2 of the Permit to show how the work will be controlled.

These hazards and controls are selected from a list from the permit, although the PA should not be constrained by this and must use his judgement and expertise to identify any further hazards or controls – there is space on the permit to add additional hazards and controls.

The Area Authority must decide whether the risks can be controlled adequately by the proposed means, taking into account the controls required by any relevant local procedure and the competence of the person in charge. If the Area Authority is not completely assured that the risks will be adequately controlled by these measures and feels a more rigorous assessment is required, they must inform the person in charge of the work and request a Level 2 Risk Assessment. This requirement should ideally be identified at the earliest opportunity. The Site Manager / Site Controller / Offshore Installation Manager can direct that a Level 2 Risk Assessment shall be undertaken at any time. Earliest communication of the task requirement and discussion about it will identify the level of Risk Assessment process to be conducted.

The Area Authority will review with the PA Section 1 and 2 of the permit along with any documentation. They will visit the worksite to confirm all hazards have been identified and controlled.

The flow-path that should be followed is provided in Appendix D.

**Note:** Discussing the job with the workforce involved is an important part of this process. ISSOW database, where RA recorded has got different layout (See attached [Link](#))

## 5.2 LEVEL 2 RISK ASSESSMENT GUIDANCE NOTES

A Level 2 Risk Assessment must be carried out at any stage in the process where the PA, AA, a member of management or any other personnel believes that significant risks exist which will not be adequately controlled without a more rigorous assessment and the application of additional controls. This requirement should ideally be identified when the planning for the task is first initiated. The AA is responsible for making a decision whether a L2 RA is required.

The reasons for a Level 2 Risk Assessment might include, for example:

- The task is new and unfamiliar
- It is physically impossible to comply fully with the standards in a relevant local procedure or other recognised source of guidance
- Previously used controls may not be reasonably practicable in this case
- The task is complex and/or has potential impact on other activities

The decision on when a Level 2 Risk Assessment is required for a task is somewhat subjective and will depend on the people involved, but the following rules should be applied to ensure a consistent level of assessment is being carried out across the organisation.

There are five types of Level 2 Risk Assessment:

- Normal
- Operational Risk Assessment (ORA)
- Stand Alone Risk Assessment (SARA)
- Isolation Risk Assessment (IRA)
- Safety Overrides Risk Assessment(SORA)

A Level 2 Risk Assessment is mandatory for any job described in Table 1 below.

### 5.3 NORMAL LEVEL 2 RISK ASSESSMENT

Tasks identified in this section require a Normal Level 2 TRA to be performed. In the event a particular task is not listed but the Task has a significant risk then a Line Supervisor should be consulted. Some sites may have specific activities unique to that site which they deem as mandatory Level 2 tasks, that has to be reflected in the local rules. A Level 2 Risk Assessment must always be undertaken for any job, which requires:

**Table 1 - Mandatory Level 2 Risk Assessment**

• Confined Space Entry	• Introduction of new Marine Vessels whether owned, operated or chartered into operation
• Work on flare systems	• Changes to the operation of a Port or Terminal
• Plugging/sealing	• Installation of or movement of major equipment and facilities offshore or from construction yards to the operating location
• Hot / Odd Bolting	• Change in the intended duty or mode of operation of vessels offshore
• Heavy Lifts (A load is classified as heavy when specified by the Site Lifting Coordinator)	• Diving Operations
• Simultaneous Operations (SIMOPs)	• Use of Explosives
• Working with asbestos, NORM(other activities involving exposure to substances for which there are defined exposure limit value)	• Lifts over live process pipelines or process plant
• Working at Heights without scaffold or structure	• Tasks involving Ground Disturbance. Manual and mechanical excavations below 1.2m
• When minimum standards of Energy Isolation cannot be achieved	• Where there is a significant potential for injury to people outside the site boundary
• Unconventional access (e.g., abseiling, crane basket)	• Hot work within 15m radius of hydrocarbons
• Proof Tests (initial hydro test where no design pressure exists)	• When the approved procedures cannot be followed.
• Pneumatic test (as alternative to hydro test, up to 110% of design pressure), including	• Task that may have specific hazards associated with Energy Isolation.

leak testing of gas lines with N2.	
<ul style="list-style-type: none"> <li>Non-routine venting/drainage/cleaning of equipment containing hazardous chemicals</li> </ul>	<ul style="list-style-type: none"> <li>Tasks which are judged to be unusually complex (e.g., due to the number of steps or interfaces)</li> </ul>
<ul style="list-style-type: none"> <li>Tasks which are unfamiliar, or which involve unfamiliar methods or technologies</li> </ul>	<ul style="list-style-type: none"> <li>Any activity involving potential exposure to H<sub>2</sub>S</li> </ul>
<ul style="list-style-type: none"> <li>Removal of any part of any footing surface consisting of gratings, deck hatches, deck plates etc., located at height, or above void. Any further activity taken place within such an area – properly signed, controlled and barriered.</li> </ul>	

**Table 2 - Advisory Level 2 Risk Assessment**

Where multiple protective devices are removed or inhibited from a system	New activities being carried out for the first time and/or involving personnel or vendors new to the site / installation
Manual and mechanical excavations less than 1.2m deep	Blocked escape routes, off-line fire pump or emergency generator

Some sites / installations will have standing instructions or procedures in place covering standard precautions for some of these activities. They can act in support of the assessment and may adequately cover most of the required control measures.

The flow-path that should be followed is provided in Appendix D.

### 5.3.1 OPERATIONAL RISK ASSESSMENT

Operational Risk Assessments (ORAs) are associated with a piece of equipment or plant as opposed to being associated with a specific task. They involve going through a similar process as for raising a WCC Permit or Routine and require carrying out a Level 2 Risk Assessment and identifying some control measures that need to be put in place.

Examples of ORA are:

- Operating a compressor with some executive action instrumentation out of service (e.g. vibration probe), where some additional controls or monitoring is required to allow continued operation of the compressor
- If any part of a Safety Critical Element does not meet its performance standard.
- To override a trip function, unless approved by operations procedures.
- Reduction of deluge cover in an area of the Installation where some additional controls or restriction on work would be applied to that particular area of the plant
- Problem with a lifeboat where some alternative evacuation arrangements are in place

### Content of Operational Risk Assessment

**The ORA shall describe:**

#### *History*

**The ORA shall describe** the context of the situation surrounding the requirement for the ORA. Include explicit description of equipment involved – tag numbers etc.

#### *Consequence*

**The ORA shall describe** the consequences of operating in accordance with the ORA. This will include a statement of the value **(1 to 15)** of highest residual risk depicted in the Level 2 Risk Assessment Matrix (**refer to Paragraph 5.7.1**) and a description of the impact on integrity or safety of this change from normal condition.

**Justification**

**The ORA shall include a statement describing why the risk of operating in this way is As Low As Reasonably Practicable (ALARP)**

The team may need to refer to discounted alternatives to demonstrate ALARP.

**Note:** ALARP is the point at which the potential risk has been reduced to where any additional reduction will be outweighed by the cost or effort that will be incurred. (Click the [Link](#) for more guidance).

**Plan to Resolve**

The ORA shall include a description of the duration and the planned actions to resolve the need for an ORA. Furthermore it shall describe what actions are required in the event the duration of the ORA is exceeded.

**Duration of ORA**

The duration assigned to the ORA is agreed within the risk assessment and reflects the maximum acceptable duration, consistent with maintaining risks ALARP.

The maximum possible duration for specifically numbered ORA is 28 days. This is different to the agreed acceptable duration for which the risk may be permitted to remain - i.e. a shorter validity period can be stated, or another duplicate ORA generated after 28 days, if a longer duration is acceptable.

When ORAs result in the issue of a temporary eMoC they shall be cross referenced.

**Approval of ORA**

In addition to the normal ISSOW approvals the following engineering functional approval is required:

- All process or equipment related ORA's shall be reviewed and approved as a minimum by the relevant DRE in the AESTL team.
- For all ORA's with a risk ranking 8 and above a Technical Authority (TA) or delegate shall endorse the ORA. In some instances more than one TA may be required to review and endorse. In reviewing any individual ORA the TA shall also consider the cumulative risk of existing ORAs.
- Anyone with actions assigned by the ORA shall countersign it to acknowledge that they have read and understood the ORA.
- Prior to approval, the Site Controller shall consider the cumulative risk of the proposed and existing ORAs.
- The Site Controller shall carry out a physical inspection of any associated modification to equipment/worksite prior to approval of the ORA.

**Note:** In exceptional circumstances the Site Controller is delegated authority to approve the ORA without engineering review, if the Site Controller is satisfied that the risks accepted by the ORA have been reduced to ALARP. (Click the [Link](#) for more guidance).

In these circumstances, the ORA shall be countersigned by the relevant engineering level within 3 days.

**Operational Risk Assessment Review Process**

- Any abnormal change to process or equipment shall trigger an immediate review of **all** ORA's related to that system to ensure that the ORA remains valid.
- **Weekly Review:** A site led review to confirm that the ORAs are still valid and that no changes are required. (This will normally be carried out at the daily PTW /

SIMOPS meeting) and the Sentinel Pro system will warn of the necessity to review.

### **Re-Authorization / Reassessment (28 days max)**

A site led review to confirm that the ORA is still required. The same approval process shall be followed as for a new ORA, with confirmation that no additional controls are required. To ensure history is maintained via the 'view linked facility' the ORA that is due to become out of date should be copied and then fully re-assessed by a suitable team (AA, discipline expert) prior to submission the SM / SC / OIM for approval. The Sentinel Pro software will alert personnel that a reauthorization is due.

### **Quarterly Review**

All current ORA's shall be audited by AOM, as follows:

- a. Assess and approve the cumulative risk to site (this should be ALARP).
- b. Use a risk matrix to plot ORAs in order to assist with the assessment of risk.
- c. Review progress to close out the ORA. Agree any changes required to action plan; ensure that the priority of ORA close-out is consistent with Asset requirements and the ORA residual risk.
- d. All ORA's shall be logged as Audited (through the full cycle to SM / SC / OIM review and any relevant findings logged in the audit report using the Sentinel Pro software)
- e. Any actions arising from the quarterly audit shall be recorded in Traction.

## **5.3.2 STAND-ALONE RISK ASSESSMENT**

SARA's are not task-related but once again require that a Level 2 Risk Assessment be conducted. A Stand-Alone Risk Assessment involves carrying out a risk assessment, which may not be associated with either a task or specific piece of equipment. It could for example involve performing a risk assessment associated with a change in organisation or responsibilities. It allows direct use of the standard Level 2 Risk Assessment process.

If a SARA is required, the procedure would be:

- Create a team as per L2RA procedure (Mandatory Level 2 Risk Assessment)
- Complete a TRA on Front-Sheet and Work-Sheets(or ISSOW database for electronic Permit to Work System users)
- Authorise SARA – register held by SM / SC / OIM
- Assign controls, and put in-place

A Stand Alone Risk Assessment has no restriction on validity duration, but should be reviewed by the SM / SC / OIM every 28 days.

## **5.3.3 ISOLATION RISK ASSESSMENT**

When an Energy Isolation-Process does not meet the standard as stipulated in Energy Isolation procedure; AZSPU-HSSE-DOC-00049-2, a L2RA is required. The risk assessment should only be on the isolation element of the task, and not the work task element.

Examples of when an Isolation Risk Assessment (IRA) is required are:

- Sufficient number of valves are not available to achieve the level of isolation required
- There is an integrity issue (e.g. leaking) of part of an isolation
- An alternative means of isolation must be resourced, i.e. stopple bag, ice-plug

If an isolation requires a risk assessment, the procedure would be:

- Create a team as per L2RA procedure (Mandatory Level 2 Risk Assessment)
- Complete TRA Front Sheet or ISSOW database for electronic Permit to Work System users)
- The TRA Worksheet should identify controls to allow a safe and suitable isolation
- Authorise IRA – register held by SM / SC / OIM
- Assign controls, and put in-place

An Isolation Risk Assessment is valid indefinitely, however it has to be revalidated after 7 days by the SM / SC / OIM

### 5.3.4 SAFETY OVERRIDES RISK ASSESSMENT

A SORA is required for any of the following:

- Protective instruments with IL 1 or above.
- Riser valves; sub-sea valves; down hole safety valves
- ESDV's
- Yellow or Red Shutdown functions

Note: Even for routine tasks such as trip testing or sampling, SORA shall be required, however a generic SORA may be prepared for repetitive tasks.

If a SORA is required, the procedure would be:

- Follow up RA process detailed in Procedure for: Control of Protective System Overrides and Alarm Blocks ([AZSPU-HSSE-DOC-00015-2](#)) using attached form in Appendix B
- Authorise SORA – register held by SM / SC / OIM (for Export Pipelines – Ops Manager):
- Assign controls, and put in-place

### 5.4 LEVEL 2 RISK ASSESSMENT TEAM

The objective of the Level 2 Risk Assessment is to assemble a team of persons with intimate knowledge and expertise of the task and in a structured way, examine all the hazards associated with that task, and then devise a set of controls which will ensure an acceptable level of risk is achieved. Where necessary, expertise from elsewhere (e.g. specialist vendors/contractors) may also be brought into the assessment process.

Where larger jobs or shutdowns are planned, work should be undertaken early on to identify potential tasks requiring Level 2 Risk Assessments in order to allow adequate time for the assessment to be undertaken.

The Level 2 Assessment Team shall be made up of a minimum of two persons and consist of persons having intimate knowledge and experience of the task or equipment to be used.

**Note:** There should be a fully competent TRA Leader (Area Authority) capable of acting as facilitator and leader of the assessment process.

The TRA Team Leader should make arrangements for the team to work as a group. It is important to ensure, for example, that there is adequate space for examination of



drawings and that sufficient time is allocated to allow a rational decision to be reached.

It should not normally require more than a team of five persons to carry out an assessment.

The objective of a Level 2 Risk Assessment is to use local knowledge and specialist knowledge in a structured way in order to achieve ALARP for any residual risk.

The Risk Assessment team should include:

- The Area Authority for the area in which the task will be carried out, who will act as TRA Team Leader
- The Performing Authority
- The person who will undertake the task
- A specialist from inside and external to the operation as required

**Note:** An HSE specialist involvement may be required to ensure that the Risk Assessment is carried out in accordance with this procedure and for recording the results.

**Note:** a L2RA Team requires at least two members.

## 5.5 THE STAGES OF RISK ASSESSMENT

### 5.5.1 DEFINING THE TASK TO BE ASSESSED

The task description detail must provide information on Who, What, Why, How and When the task will be performed. As the task becomes more complex the level of detail and supportive documentation required will increase. The level of information provided must take into account all people taking part in the task.

The Task Risk Assessment team must first ensure that they fully understand the task and its implications. The overall task may need breaking into steps to facilitate carrying out the Task Risk Assessment. When defining the task, think about such aspects as:

Item	Issues to Consider
1. System boundaries	What is the system being worked on? The extent of equipment, hardware, or software affected by the activity. Will the work be carried out on isolated or un-isolated systems? Where are the isolations, or interfaces with other systems?
2. Area or space boundaries	What area is affected by the activity? What area could be affected in an accident?
3. Work activities included	What do you have to do? What might be the effect of doing it? Think about isolations, inhibits, etc.
4. People affected	People; in the team, working nearby, who might be passing by, working on related activities and working on connected systems.
5. Time and duration of work	Will the task take one hour or multiple shifts? Will the work be done during the day or night or both?
6. Tools and equipment to be used	Does the activity require hand tools, power tools, ladders, lifting equipment, etc.? Task-specific PPE
7. Interfaces with adjacent work-fronts	How will your work affect other work going on at the same time? How will other work affect you?

### 5.5.2 L1RA Specific

For a L1 Risk Assessment, the Task Description is recorded in box 1 of the permit.

### 5.5.3 L2RA Specific

The L2RA Front Sheet should be completed as far as possible. The sections that should be completed are:

INSTALLATION	DEPARTMENT/SYSTEM/LOCATION – complete for relevant option
PERMIT No – if known at this point. If not, complete when the PTW is initiated.	TASK DESCRIPTION – be as explicit as possible, for clarity and future use
DATE – the date the risk assessment took place	REFERENCES AND OTHER RELEVANT INFORMATION – enter all relevant information
TRA Ref No – if registered, enter number here. This will be used when Risk Assessments are being stored for future use. Site specific rules will dictate how this is administered.	RISK ASSESMENT TEAM – enter names and positions. No signatures required
TYPE – NORMAL, IRA, SARA or ORA	

Any sub task steps should be identified on the L2RA Work-Sheet columns 1 & 2. Note that the TRA front sheet is not signed as approved initially; this section will only be signed after worksheets are complete and the SM / SC / OIM accepts the Task Risk Assessment.

**Note:** ISSOW database, where RA recorded has got different layout (See attached [Link](#))

## 5.6 IDENTIFYING THE HAZARDS

A visit to the work site by the AA or his designee and PA is MANDATORY in order to assess the layout of the area, site conditions and adjacent plant and activities. Once the members are all familiar with the scope of the task to be carried out, the team should list all the significant hazards in column 3 of the TRA worksheet. For a L2RA these are identified on the permit.

Checklists are supplied as a guide for reference purposes only. They should not be considered as being comprehensive. A group brainstorm, with the team leader making sure that each member is given adequate opportunity to express their views is vital to maintain a systematic approach to using these checklists. See Appendix A

**Note:** ISSOW database, where RA recorded has got different layout (See attached [Link](#))

### 5.6.1 IDENTIFYING THE HAZARD EFFECTS

**Note:** Recording of the Hazard effects is only recorded on a L2RA. However the hazards effects should be considered on any type of Risk Assessment.

The Team shall then identify the Hazard Effects, which will be entered into column 4 of the L2RA Work-Sheet. Hazard effects are the worst credible possible outcome of the hazard. The Team should be as explicit as possible in the Hazard Effect details. It is important to consider property damage and environmental impact and not just personal injury.

Examples are shown below:



Sub-Task Activity / Description	Hazard	Effect
Move temporary oil decanting hoses in utilities area to new storage cupboard.	Slipping/tripping hazard Dropped object	sprain, graze broken foot bone
Decant methanol from temporary skid on deck to new storage tanks, use of temporary hoses	Flammable (invisible flame) and Toxic by inhalation & swallowing.	Burns Fatality
Welding of new earthing point in live operational area	Fire / explosion in hydrocarbon area	Multiple fatality Long term plant shut down

The table below should be used to determine the hazard effect, rated A – E.

Personal Injury	Property Damage	Environmental Damage	Effect Rating
Fatality	Major Loss >\$5M	Total Loss of Containment	A
Likely Permanent Disability	Significant Damage Loss \$500k to \$5M	Significant Loss of Containment. 100bbl, Limited ability to control	B
Hospital Stay	Moderate Damage Loss \$100k to \$500k	Significant Loss of Containment > 100bbl only Workplace affected	C
DAFWC / Restricted Work Case / Medical Treatment	Minor Loss \$10k to \$100k	Minor Loss of Containment < 100bbl only Workplace affected	D
Simple First Aid Injury	Loss <\$10k	Slight Loss of Containment < 1bbl	E

## 5.7 EXISTING CONTROL MEASURES

**Note:** Existing Control measures are valid for both L1RA and L2RA.

When doing a risk assessment, it is normal to assume that no controls are in place. For many tasks, some controls may be known before the risk assessment, and it is not realistic to think of the work being done without these controls (e.g. an energy isolation). So, if experience or normal industry or trade standards dictate, it may be valid to assume that certain controls are in place, provided that:

- They are stated in column 5 of the L2RA Work-Sheet
- They are demonstrated as part of the task definition (e.g. planned isolations must have appropriate isolation certificate and marked-up P&IDs); and
- The controls are confirmed to be in place prior to the work being carried out

Controls that may be included in the definition of the task include:

- Procedures, operating guides, etc. (supported by a valid risk assessment);
- Energy isolations confirmation certificate (including P&IDs)
- Entry certificate
- Scaffolding request; and
- Other risk assessments such as, manual handling, LSA/NORM scale.

Work permits are used for recording the controls for individual work tasks, for controlling the interfaces between work activities and to gain the correct approvals to start a job.

However, a work permit itself is not a control for an individual work task and should therefore not be included in the task definition.

**Note:** ISSOW database, where RA recorded has got different layout (See attached [Link](#))

### 5.7.1 EVALUATE THE RISK

**Note:** Recording of the Risk value is only recorded on a L2RA. However the risk factors should be discussed for a L1RA.

The risks created by each hazard on the list should be evaluated according to:

- The worst credible severity of the hazard effects, should anything go wrong
- The probability of the hazard being realised and resulting in the specified hazard effect

It is important to consider property damage and environmental impact and not just personal injury. For each hazard the initial hazard effect and probability are defined based on the Risk Assessment Chart shown in Appendix B.

Probability Guidelines:

PROBABILITY	RATING
Event likely to occur more than once per quarter (FREQUENTLY)	HIGH (H)
Event likely to occur at least once per year, but less than a quarter (PROBABLE)	MEDIUM (M)
Event likely to occur less than once per year (OCCASIONAL)	LOW (L)

The hazard effect (E) and probability (P) are then used to determine the risk (R), using the risk matrix provided. The E, P & R values are written in column 6 of the TRA worksheet.

The effectiveness of the assessment will depend entirely on the team's ability to identify and evaluate all hazards associated with the task. The team should also consider the possibility of the interaction of different hazards, including those related to:

- Location - Attention should focus on the proximity to other plant or equipment, e.g., air intakes, shut down systems, control points, vents, drains, sample points and ignition sources.
- Critical Activities - Critical activities include isolation, flushing, inerting, confined space entry; work at height, hot work, lifting, use of power tools, temporary power and air supplies, pressure testing, radiography.
- Simultaneous Activities. - Simultaneous activities should be investigated both within the task itself and with other unrelated activities taking place nearby.

### Risk Matrix (R)



PROBABILITY		A	B	C	D	E
	H	15	14	13	9	4
	M	12	11	10	5	3
	L	8	7	6	2	1

### 5.7.2 DETERMINING THE ADDITIONAL CONTROLS REQUIRED

**Note:** Recording of the Additional Controls is only completed on a L2RA column 7. Recording of Controls for a L1RA is in section 2 of the permit.

Once the initial Assessment of Risk is complete, the team must work systematically through the list of Hazards and specify all the Additional Control Measures needed to mitigate each associated Risk. These are recorded in column 7 of the TRA worksheet.

**Note:** Controls, which prevent the hazard being realised, should be used in preference to controls that reduce the effect of a hazard.

The hierarchy of controls is applied in the following order:

1. Eliminate
2. Reduce (substitution, Engineering, Segregation)
3. Manage or Administration (reduce exposure, Procedures)
4. PPE – This must be the last control applied; remember that with PPE you are inside the hazard zone.

Wherever possible, measures higher in the hierarchy should be used, providing they are reasonably practicable, and emphasis should be placed upon control at source. A combination of measures will usually be necessary in order to reduce the level of Risk to As Low as Reasonably Practicable (ALARP). It should also be considered that when specifying controls, any associated risk that they bring with them needs to be assessed and controlled.

Activities such as confined space entry (ground disturbance and etc.) supported by task risk assessments shall identify the credible potential emergencies that could occur during the work with response and rescue plans being in place before the work commenced.

Typical Control Measures can be placed in the following categories:

Control Measure	Typical Examples
<b>Physical</b>	Removal of fuses; Insert spade or blank flange in pipe work; Lock off valve; Erect mechanical barrier; Use locked enclosure; Keep people at a distance (e.g., signs, warning tape); Eliminate or substitute toxic substances; Substitute noisy machinery; Use mechanical handling equipment.
<b>Procedural</b>	Test for pressure build-up or leaks; Examination of flushing fluid; Test for hazardous chemicals in liquid, solid or gaseous form; Procedure for control of simultaneous or adjacent work; Prohibition of hot work;

Control Measure	Typical Examples
	Equipment lock-out; Develop contingency plan,
Human	Use of independent specialist personnel; Regular or constant monitoring of the Task; Use of method statements / detailed procedures; Clear instructions and warnings to workforce; Clear definitions of roles and responsibilities during the Task; Adequate supervision; Ensure competency of personnel for the activity
Time	Limit duration of the Task or time of day when the activity occurs; Use time-saving measures such as hot-bolting, good work-site preparation and planning for the movement of materials, tools.
Contingency (Control)	Emergency shutdown, deluge and blow-down systems, reduction of inventory.
Contingency (Mitigation)	Temporary refuge, emergency response system, fire/blast wall, water curtain, provision of PPE, rescue equipment, etc.

### 5.7.3 ALLOCATING RESPONSIBILITIES FOR CONTROL ACTIONS

**Note:** Recording of the Responsibilities is completed on a L2RA column 8. Responsibilities for control actions are not recorded on a L1RA, but can be identified in a method statement or procedure.

Once the control measures have been identified, each should be allocated to either an individual or a role. The Risk Assessment may be completed some time before the actual work task-taking place; therefore the delegated individual / role may change. Where possible, identify both a role and a specific individual. These are recorded in column 8 of the L2RA Work Sheet.

Column 11 is for recording the closeout of the actions. Therefore this column should not be completed until the work is about to commence.

**Note:** ISSOW database, where RA recorded has got different layout (See attached [Link](#))

### 5.7.4 RE-EVALUATE THE RISKS FOR ACCEPTABILITY

**Note:** This is completed on a L2RA column 9. Risk re-evaluations are not recorded on a L1RA (permit).

The team must then re-evaluate the risk for all those hazards for which controls have been determined. The new risk level should be determined and the team should consider whether the risk is now as low as reasonably practicable (ALARP). Column 10 should be identified with a 'Y' to confirm the Risk Analysis Team has agreed ALARP.

If the risk is not ALARP, the review team must decide what further safeguards need to be put in place. The agreed residual E, P and R are recorded in column 9 of the TRA Worksheet.

The team must finally decide on the acceptability of the overall remaining risk for the task. Individual hazards with a medium risk may be acceptable provided the overall risk of the task is considered low. If the team decides that even with the controls in place, there are too many hazards, which still have a medium risk, this must be recorded and the task in its present form must be abandoned.

The higher the perceived risk for any particular hazard, the greater should be the number and/or quality of independent controls, which the team specify as necessary. Consideration should also be given to the possibility of cumulative effects from the interaction of several different hazards.

If the team considers that there are insufficient independent controls available, or that the controls are likely to be ineffective against any particular risk, that risk must be judged to be unacceptable, and the team leader must record this decision. The task must then be abandoned or referred to higher management.

The team may also conclude that because of the complexity or degree of the risks involved, a more detailed engineering assessment is needed. In this case, the task must be suspended until the assessment is available.

As a final check, the team should ask itself the following questions about the proposed task:

- Have all necessary control measures been fully and effectively identified?
- Is there a need for engineering change to eliminate or reduce risk further?
- Is there a need to shutdown the plant or process?
- Is the residual risk rating acceptable?
- Is there anything else that can be done to further reduce the risk?

Only at this point can the team judge whether ALARP has been achieved.

This Table gives guidance for the residual risk criteria:

SCORE	ACTION REQUIRED
<b>13 to 15</b>	Immediate action. Task must not proceed. Serious loss potential. Task may proceed only with additional controls in place to avoid serious loss.
<b>9 to 12</b>	Plan controls to reduce risk further. Assess the priority and agree implementation targets.
<b>6 to 8</b>	Monitor procedures and controls to ensure the risk is maintained as low as reasonably practical. Take immediate action if standards are not met. Ensure additional controls are implemented.
<b>2 to 5</b>	Implement control measures to reduce the risk to the lowest level reasonably practicable.
<b>1</b>	Prepare a plan to reduce the risk to the lowest level reasonably practicable.

### 5.7.5 IMPLEMENTATION OF CONTROL MEASURES

**Note:** Recording of the control implementation is completed on a L2RA column 11. Implementation of controls is not recorded on a L1RA.

Column 11 is for recording the close-out of the actions. Therefore this column should not be completed until the work is about to commence.

There are two types of control measures that will be identified from either the Level 1 or Level 2 TRA process:

- Prerequisite controls are those which must be in place prior to the job starting

- Supplementary controls are those which have to be applied during the job

The prerequisite control measures must be implemented prior to the job going live. This includes any training and/or special briefing of the PA and work party according to an agreed plan of action.

The supplementary controls, which will be applied during the job, must be understood fully by the PA and the work party before work commences.

The AA must satisfy himself that Competent Persons have been allocated the work; the required controls are in place, any additional paperwork is complete, and that all the individual risks are reduced to ALARP.

### 5.7.6 TASK INSPECTION CHECKLIST

In order to ensure that workers are made aware of the hazards and control measures of a particular task, checklists should be prepared. The checklists are based on the control measures identified in the TRA and for use by site / installation supervisors/safety officers during toolbox talks and site inspections. An (example) checklist is shown in Appendix F.

### 5.7.7 TOOLBOX TALKS

**Note:** Toolbox talks will be carried out for all tasks, whether they are L1RA or L2RA.

This is the process of transferring the methodology and controls to the people who will carry out the work. It is vital that all persons involved in working on a particular activity are fully aware of the details of the TRA and all the hazards and controls associated with the job. Some of them may have been directly involved in the TRA but others may not have been. This is particularly true of larger jobs (e.g. construction) where the PA who is normally the Construction Supervisor will have been directly involved in the TRA but the rest of the work party probably have not.

A Toolbox Talk is a vital part of the process to ensure that the TRA and its associated documents are reviewed prior to the start of the job and are fully understood by all persons involved in the task.

Particular emphasis should be placed on those residual risks with a higher rating. It is also an opportunity for those involved in the work to raise any further concerns about the job and to identify any hazards not picked up in the TRA process.

It is crucial to the people involved in the task execution to fully understand the TRA. Therefore, where English is not the first language for the work team, a quality translation to appropriate languages must be made available to the team before work starts.

**Note:** If anyone at this stage identifies some additional hazards that have not been properly assessed or thinks the control measures are inadequate, then the job should not proceed until the TRA has been re-evaluated and appropriate controls identified to ensure the job is ALARP.

Keys to the success of this step are:

- Communication of the task, the hazards and what must be done to control them to every person involved in the task.
- Language is critical, especially in complex technical tasks.
- The toolbox talk is held prior to work starting
- Everyone understands everything discussed

- Everyone has the opportunity to voice concerns
- Everyone signs to confirm that they understand the hazards and control measures

Some example topics to cover as part of the Toolbox Talk are:

Issue	Notes
The current weather conditions	<ul style="list-style-type: none"> <li>• Weather</li> <li>• Sea State</li> </ul>
The work party	<ul style="list-style-type: none"> <li>• Competence and experience</li> <li>• Familiarity with the installation and the system being worked on</li> <li>• Anyone fatigued or distracted</li> </ul>
The worksite	<ul style="list-style-type: none"> <li>• Access</li> <li>• Ground conditions</li> <li>• Awkward working position</li> <li>• Temperature/humidity</li> <li>• Lighting</li> </ul>
The current state of the plant and equipment	<ul style="list-style-type: none"> <li>• Physical condition of plant and equipment</li> <li>• Current operating status of plant and equipment</li> </ul>
The current adjacent work sites	<ul style="list-style-type: none"> <li>• Can this job affect other work sites</li> <li>• Can other work sites affect this job</li> </ul>
The pre-defined precautions and controls	<ul style="list-style-type: none"> <li>• Are they as per written instructions, risk assessments, PTW, etc</li> </ul>

## 5.8 MANAGEMENT OF RISK

### 5.8.1 APPROVAL

On completion of the Risk Assessment, the Risk Assessment Front & Work Sheets must be attached to the permit application for the job. It must be reviewed and signed by the SM / SC / OIM before he approves the associated Permit(s) to Work.

Should the SM / SC / OIM feel that the task presents risks beyond his level of accountability, he must refer to his Manager for guidance, and if necessary request a more sophisticated analysis of the risks and mitigation than can be provided by the method described in this procedure.

### 5.8.2 RECORDING THE RISK ASSESSMENT

Where a task is likely to be repeated, a record of the Risk Assessment should, at the permit issuer's discretion, be retained for future reference. In any event Risk Assessments, which include hazards to the health of those undertaking the task must be attached to the permit(s) for the job and retained for 12 months.

**Note:** ISSOW allows you to track past records.

Where a Risk Assessment form is being re-used, it must be fully reviewed and a new front sheet created.

## APPENDIX A: HAZARD CHECKLISTS

### Hazard Checklist - General

Control Tier: <<2>>

Document Number: << AZSPU-HSSE-DOC-00063-2>>

Revision Date: <<29 December 2010>>

Print Date: 2/1/2011

PAPER COPIES ARE UNCONTROLLED. THIS COPY VALID ONLY AT THE TIME OF PRINTING. THE CONTROLLED VERSION OF THIS DOCUMENT CAN BE FOUND AT <http://docs.bpweb.bp.com/dkazspu/component/hssesms>



Falling from height	Noise
Manual Handling	Vibration
Lifting operations	Pressure
Falling object	Biological agents
Noise	Welding/cutting
Lighting	Power tools
Fume/dust	Hand tools
Minimise potential for ignition	Work on safety systems
Collision	Transport by sea/air
Hand tools	Storage
Machinery	Water jetting
Asphyxiation	Grit blasting
Cold/Heat	Loss of containment from nearby system
Mental Stress	Loss of containment from system being worked on
Ionising Radiation	Ignition
Chemical hazard	Fire
Inert gas	Explosion
Flammable gas	Structural damage
Flammable liquid	Personal injury
Electricity	Barriers/access restrictions
Static Electricity	Weather

Hazard Checklist - Isolations	
Nature of fluid	
Pressure stability of system and adjacent systems	
Temperature stability of system and adjacent systems	
H2S	
Wax	
Sand	
LSA Scale	
Hydrates	
Foaming	
Blockage	
Trapped pressure	
Type of valves and reliability	
Size of pipe work	
Integrity testing	
Reverse flow	
Pressure build-up	
Migration from other systems	
Inventory behind isolations	
Duration of isolation	
Adequacy of pipe supports	
Fail position of ESD valves/blow down valves	
Contingency in the event of failure of isolations	
Environmental impact of spills or emissions	
Electric Shock	

Hazard Checklist - Breaking Containment	
<b>Note:</b> This checklist should be used in conjunction with Hazard Checklist - Isolations.	
Electrical risk of using portable tools	
Flammable or toxic vapours arising from sludge in vessel	
Hazardous substances trapped around bends, behind baffles, linings etc.	
Chemical reactions with cleaning materials	
Environmental impact of spills or emissions	
LSA Scale	



Pyrophoric scale
Asbestos gaskets
Trapped pressure
Residual pressure
Residual heat
Liquids remaining from flushing
Inert atmospheres
Chemical hazards

<b>Hazard Checklist - Vessel Entry</b>
Residual gases/vapours
Sludge which may give rise to vapours/gases when disturbed
LSA scale
Adequacy of ventilation
Need for air movers during entry.
Communication difficulties within the vessel or with the standby man
Standby man communication with the CCR
Ingress of gases/vapours from other nearby activities or systems
Use of mechanical tools/power tools/electrical equipment
Slip hazards within the vessel or at the point of entry
Ionising radiation; nucleonic instrumentation
Danger of falling into vessel boots or sumps
Noise, general
Noise when using power tools
Visibility within the vessel
Adequacy of lighting within the vessel
Temperature effects
Oxygen enrichment
Oxygen deficiency
Frequency of gas testing
Location of rescue kits
Competency of standby man
Disposal of vessel cleanings

**APPENDIX B: RISK ASSESSMENT CHART**

<b>HAZARD EFFECT RATING</b>					
<b>Personal Injury</b>	Fatality	Likely Permanent Disability	Hospital Stay	DAFWC, Restricted Work Case, Medical Treatment	Simple First Aid Injury
<b>Property Damage</b>	Major Loss >\$5M	Significant Damage Loss \$500k to \$5M	Moderate Damage Loss \$100k to \$500k	Minor Loss \$10k to \$100k	Loss <\$10k
<b>Environmental Impact</b>	Total Loss of Containment	Significant Loss of Containment. 100bbl, Limited ability to control	Significant Loss of Containment > 100bbl only Workplace affected	Minor Loss of Containment < 100bbl only Workplace affected	Slight Loss of Containment < 1bbl
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>PROBABILITY</b>					
<b>HIGH (H)</b> Event likely to occur more than once per quarter (FREQUENT)	<b>15</b>	<b>14</b>	<b>13</b>	<b>9</b>	<b>4</b>
<b>MEDIUM (M)</b> Event likely to occur at least once per year, but less than quarterly (PROBABLE)	<b>12</b>	<b>11</b>	<b>10</b>	<b>5</b>	<b>3</b>
<b>LOW (L)</b> Event likely to occur less than once per year (OCCASIONAL)	<b>8</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>1</b>

<b>SCORE</b>	<b>13 to 15</b>	<b>9 to 12</b>	<b>6 to 8</b>	<b>2 to 5</b>	<b>1</b>
<b>ACTION REQUIRED</b>	Immediate action. Task must not proceed. Serious loss potential. Task may proceed only with additional controls in place to avoid serious loss	Plan controls to reduce risk further. Assess the priority and agree implementation targets.	Monitor procedures and controls to ensure the risk is maintained as low as reasonably practical. Take immediate action if standards are not met. Ensure additional controls are implemented.	Implement control measures to reduce the risk to the lowest level reasonably practicable	Prepare a plan to reduce the risk to the lowest level reasonably practicable.

**APPENDIX C: L2RA FORM**

Sheet 1 of \_\_\_\_

INSTALLATION :		PERMIT No :		DATE :		TRA REF No :		
DEPARTMENT/SYSTEM/LOCATION:				RISK ASSESSMENT TEAM (FIRST NAMED-TRA TEAM LEADER)				
RISK ASSESSMENT TYPE:		NORMAL <input type="radio"/>	IRA <input type="radio"/>	NAME		POSITION		
		SARA <input type="radio"/>	ORA <input type="radio"/>					
TASK DESCRIPTION:								
I, the TRA Leader confirm that the TRA has been reviewed to ensure that the risks identified are relevant and that all control measures are in place.								
Name:		Date:		Sign:				
REFERENCES AND OTHER RELEVANT INFORMATION : (e.g. Emergency Provision Required, Competency requirements, Tools & Equipment, additional PPE, P&IDs, Drawings, PTW, Procedures, Certificates, other Risk Assessments)						CONFIRMED ALARP TRA APPROVED BY (OIM/SC/SM):		
						NAME (PRINT):		
						SIGNATURE :		
						POSITION :		
						DATE :		

Work-Sheet \_\_\_\_ of \_\_\_\_

TASK DESCRIPTION SUMMARY :		TRA REF No :	
----------------------------	--	--------------	--

1. SUB-TASK No	2. SUB-TASK ACTIVITY / DESCRIPTION	3. HAZARD DESCRIPTION	4. HAZARD EFFECT	5. EXISTING CONTROL MEASURES	6. INITIAL RISK			7. LIST ALL CONTROL MEASURES REQUIRED	8. PERSON OR ROLE RESPONSIBLE	9. RESIDUAL RISK			10. ALARP?	11. ACTIONS CLOSED?
					E	P	R			E	P	R		

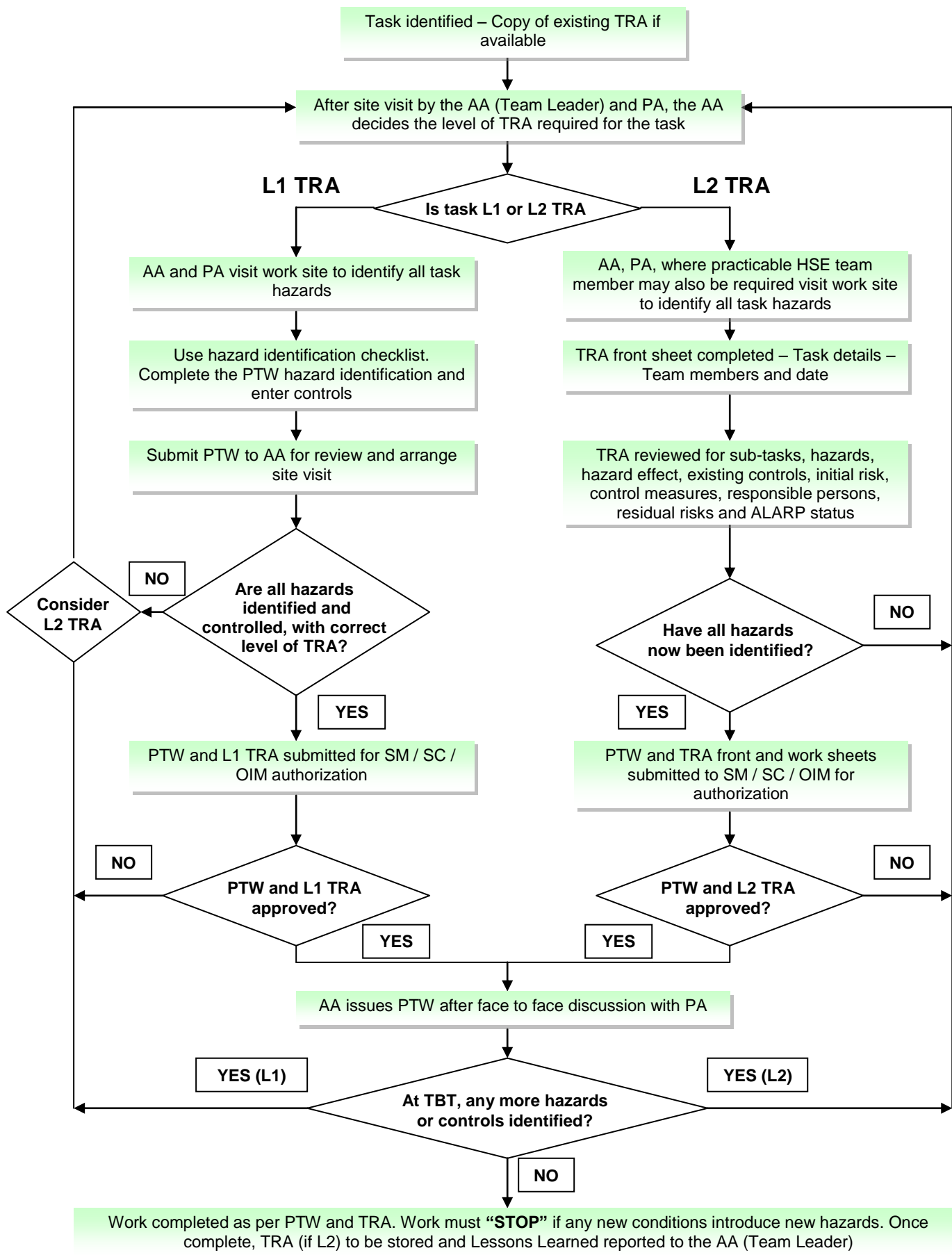
Control Tier: &lt;&lt;2&gt;&gt;

Document Number: &lt;&lt; AZSPU-HSSE-DOC-00063-2&gt;&gt;

Revision Date: &lt;&lt;29 December 2010&gt;&gt;

Print Date: 2/1/2011

PAPER COPIES ARE UNCONTROLLED. THIS COPY VALID ONLY AT THE TIME OF PRINTING. THE CONTROLLED VERSION OF THIS DOCUMENT CAN BE FOUND AT  
<http://docs.bpweb.bp.com/dkazspu/component/hssesms>

**APPENDIX D: RISK ASSESSMENT FLOW-PATH**

**APPENDIX E: RISK HIERARCHY EXAMPLES**

<b>Examples</b>	
<b>Elimination / Prohibition</b>	<ul style="list-style-type: none"> <li>• Use of mechanical device instead of manual handling</li> <li>• Maximum stacking height</li> <li>• Unauthorised personnel</li> <li>• Prohibit smoking, jewellery, mobile phones</li> </ul>
<b>Substitution</b>	<ul style="list-style-type: none"> <li>• Solvent-based paint with water-based paint</li> <li>• Dusty powders with pastilles or pellets</li> <li>• Electric hand tools with compressed air</li> <li>• Reduction in size or weight of item</li> </ul>
<b>Engineering Controls</b>	<ul style="list-style-type: none"> <li>• Local exhaust ventilation for e.g.:</li> <li>• Welding</li> <li>• Soldering</li> <li>• Grinding</li> <li>• Mechanical or electrical isolations</li> <li>• Lighting</li> <li>• Enclosure, e.g.:</li> <li>• Sealable containers</li> <li>• Noise enclosures for turbines or pumps</li> </ul>
<b>Segregation</b>	<ul style="list-style-type: none"> <li>• Barrier or guard</li> <li>• Separate storage areas</li> <li>• Physical isolations (spade, lock-off)</li> <li>• Access controls</li> </ul>
<b>Reduction in Personnel or Time Exposure</b>	<ul style="list-style-type: none"> <li>• Job or shift rotation</li> <li>• Breaks</li> <li>• Hazardous work carried out at low activity periods such as nights or weekends</li> <li>• Dispense dilute chemical</li> <li>• Increase airflow through work area</li> <li>• Automated feed process instead of manual</li> </ul>
<b>Personal Protective Equipment</b>	<ul style="list-style-type: none"> <li>• Gloves</li> <li>• Goggles</li> <li>• Face mask</li> <li>• Boots</li> <li>• Respiratory protective equipment</li> <li>• Chemical suits or gauntlets</li> <li>• Safety harness or inertia reel</li> </ul>

**APPENDIX F: TASK INSPECTION CHECKLIST (EXAMPLE)**

**Note:** All control measures identified in the TRA should be identified in the checklist and communicated during the pre-task Toolbox Talk.

**SHOT BLASTING**

<b>FACILITY:</b>	<b>LOCATION:</b>
------------------	------------------

Checklist	Yes	No	Comments
Is the method Statement and TRA available on work site?			
Is the Work Permit available?			
Is shot blasting performed so that the prevailing wind carries airborne dust away from any activity, persons and equipment, etc?			
Where dry shot blasting operations are being performed on site, has all other activities in the area, especially down wind, been suspended for the duration of the operation?			
Is all equipment in the vicinity of shot blasting operations protected against impacting material and dust by sheeting or other means?			
When shot blasting in the vicinity of sensitive equipment, such as electrical equipment, is the area totally enclosed by sheeting or other means?			
Is access by unauthorised persons prevented?			
Are drains in the vicinity of shot blasting operations covered?			
Is only non-silica shot blasting medium used?			
Are compressors and other equipment in good mechanical condition?			
Is the hose between the shot blasting machine and the operator of sufficient length to ensure that the operative feeding the machine with is clear of any dust arising from the nozzle?			
Is the nozzle of the hose fitted with a dead-man's handle?			
Is the nozzle earthed?			
Are operatives wearing correct PPE including face masks, hearing and eye protection?			
Is efficient ventilation provided to remove airborne contamination when work is performed in a confined space?			

Name	Signature	Date
Site Supervisor		
Safety Officer		

Control Tier: &lt;&lt;2&gt;&gt;

Document Number: &lt;&lt; AZSPU-HSSE-DOC-00063-2&gt;&gt;

Revision Date: &lt;&lt;05 November 2010&gt;&gt;

Print Date: 2/1/2011

PAPER COPIES ARE UNCONTROLLED. THIS COPY VALID ONLY AT THE TIME OF PRINTING. THE CONTROLLED VERSION OF THIS DOCUMENT CAN BE FOUND AT <http://docs.bpweb.bp.com/dkazspu/component/hssesms>

## Revision/Review Log

Revision Date	Authority	Custodian	Revision Details
09 Sept 2004	CHSSE Manager	CHSSE Team Leader	Initial issue as controlled document
18 June 2007	Alan McNulty (CHSSE Manager)	Esmira Akhundova (CHSSE Team Leader)	<p><b>General:</b> Throughout the procedure the document numbering for referred procedures has been changed.</p> <p><b>Section 1. Introduction:</b> Inclusion of 1.2 Scope, 1.3 Company Requirements, 1.4 Stopping Unsafe Work, 1.5 Deviations, 1.6 Document Review, 1.10 SSOW Specific Cross References (new doc control numbers).</p> <p><b>Section 2. Responsibilities:</b> Is now "<u>Definitions</u>".</p> <p><b>Section 3. Auditing and Monitoring:</b> Is now "<u>Roles and Responsibilities</u>". Additions to the responsibilities of SM, SC, OIM, Area Authority, Performing Authority and Employees.</p> <p><b>Section 4. Is now Auditing &amp; Monitoring:</b> Heading - Each business asset shall; <u>Installation</u> has been added after site in the first bullet point. The recommended frequency of Audit for supervisor / Area Authority changed to <u>a minimum of 2 per week</u>. OIM entered into the third bullet point of the second paragraph.</p> <p><b>Section 5. Risk Assessment Levels:</b> Is now "<u>Competency, Training and Awareness</u>". 5.3 Records: Added to paragraph – "<u>Risk Assessments shall be uniquely numbered and retained (preferably in electronic format)</u>".</p> <p><b>Section 6. Is now Risk Assessment Levels:</b> 6.1 General, The word <u>significant</u> removed from the first bullet point. 6.3.1 Table 1: Classification of Heavy Lift incorporated. 6.4 Level 2 Risk Assessment Team, Third paragraph. Removed the words, "<u>and consist of persons having intimate knowledge and experience of the task or equipment to be used</u>". Added to bullet point one "<u>who will act as TRA Team Leaders</u>". 6.4.1 "Normal Level 2 Risk Assessment", 4 additional bullet points added.</p> <p><b>Section 7. The Stages of Risk Assessment:</b> Hazard Checklists moved to Appendix A of the procedure. Added to Hazard Checklist – Isolations: <u>Electric Shock</u>. 7.1.1 L1RA: Added – "<u>recorded in box 1 of the permit</u>". 7.5 Evaluate the Risk: - <u>Probability Guidelines re-worded</u>. 7.8 "Re-evaluate the Risks for Acceptability". The table giving guidance for the residual risk criteria changed to reflect the Risk Matrix in 7.5. 7.10 "Task Inspection Checklist" is an additional paragraph. 7.11 Toolbox Talks: Additional bullet point added.</p> <p><b>Appendices.</b> 9 appendices included to the document as follows:</p> <ul style="list-style-type: none"> <li>• Level 2 Risk Assessment Checklists</li> <li>• Risk Assessment Chart</li> <li>• Level 2 Risk Assessment Form: Added at the bottom of Task Description "I the TRA Leader confirm that the TRA has been reviewed to ensure that the risks identified are relevant and that all control measures are in place". Also, name, date and signature.</li> <li>• Risk Assessment Flow Path</li> <li>• Risk Hierarchy Examples</li> <li>• Task Inspection Checklist (example)</li> <li>• Procedure Summary</li> </ul>

Control Tier: &lt;&lt;2&gt;&gt;

Document Number: &lt;&lt; AZSPU-HSSE-DOC-00063-2&gt;&gt;

Revision Date: &lt;&lt;29 December 2010&gt;&gt;

Print Date: 2/1/2011



05 Dec 2008	Yuliy Zaytsev, Safety&Compliance Systems Manager	Adalet Mamedov, Central Safety TL	<ul style="list-style-type: none"> <li>• RTC Pre-Task Risk Assessment Form</li> <li>• Feedback &amp; Improvement Suggestions</li> </ul> <p>Authority position/name and custodian position/name have changed to reflect org changes in HSE&amp;TD as of December 1st 2008.</p>
02 April 2009	Yuliy Zaytsev, Safety&Compliance Systems Manager	Niyaz Mamedov, HSE Systems – Control of Work Advisor	<p><b>Paragraph 3.1</b> additional bullet is added.</p> <p><b>Paragraph 6.3</b> is shortly amended in regard to AA's responsibility for making decision on L2 RA.</p> <p><b>Paragraph 7.11</b> reflects now requirement that people involved in the task fully understand TRA where English language is not the first one for the work team.</p>
14 April 2009	Yuliy Zaytsev, Safety&Compliance Systems Manager	Niyaz Mamedov, HSE Systems – Control of Work Advisor	<p><b>The changes relate only to Marine operations, Offshore.</b></p> <p><b>Paragraph 1.6</b> deviations related to Marine Operations are to involve MA</p> <p><b>Section 2</b>, definition is given to MA</p> <p><b>Paragraph 3.7</b> roles &amp; responsibilities of Marine Authority</p> <p><b>Paragraph 6.3.1</b> Mandatory L2 RA Table is added with 4 possible marine related operations</p>
09 September 2009	Yuliy Zaytsev, Safety&Compliance Systems Manager	Niyaz Mamedov, HSE Systems – Control of Work Advisor	<p>Section 5, Training and Competency Requirements, is reworded in compliance with CoW Training Policy.</p>

29 December 2010	Yuliy Zaytsev AzRPU Offshore Health and Safety Manager	Elman Shikhkerimov AzRPU CoW/Safety Systems Lead	<p>The numbering of the Procedure is entirely changed.</p> <p><b>Section 2 Definitions</b> updated with IL and DRE abbreviations</p> <p><b>Section 3 General Requirements:</b> additional lines added, which refer to relevant group standards</p> <p><b>Section 5 Risk Assessment Levels:</b> Requirement for minimum L2 Risk Assessment team involvement changed inline with GG HITRA 3.1-0002 Note section has been updated inline with GG</p> <p><b>Sub-section 5.3: Normal Level 2 Risk Assessment</b> <b>Table 2 - Advisory Level 2 Risk Assessment</b> has been adjusted with additional tasks</p> <p><b>Sub-Section 5.4 Level 2 Risk Assessment Team</b> updated, including minimum numbers of people requirement</p> <p><b>Paragraph 5.3.1 Operational Risk Assessment</b> ORA process describing section has been significantly altered in line with industry best practices, with the main aim to improve overall controls over the process</p> <p><b>Paragraph 5.3.4 Safety Overrides Risk Assessment</b> New paragraph added to point out SORA process</p> <p><b>Paragraph 5.7.2 Determining the additional controls required</b> updated with requirement to have emergency response plans in place before the task commences, if identified by RA.</p> <p>During the review some of the "should" statements have been replaced with "shall" in order to meet requirements of Control of Work GDP 4.5-0001 In addition to Paper based Risk Assessment process, ISSOW electronic PTW system risk assessment database info added throughout the procedure.</p> <p><b>APPENDIX D: Risk Assessment Flow-path</b> HSE team member role in L2 RA process has been slightly updated</p>
------------------	---	--	--