



# AzSPU Practice for Assessment, Prioritization, and Management of HSSE&O Risks

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## 1. Purpose

This practice has been developed to ensure the following objectives are achieved:

- Effective risk evaluation and management is utilized to help prevent injuries to people, damage to the environment as well as to protect the BP company reputation and minimize business loss from incidents.
- A standard approach is used to support effective and consistent risk management across the AzSPU and in a manner that supports the BP Group approach defined in OMS GDP 3.1-0001.
- Training and regular use of this practice increases competence in prioritizing resources and actions to reduce HSSE&OI risks.
- Credible HSSE and business risks are identified, assessed, ranked and documented in a risk register.
- Risk is actively managed through the application of appropriate prevention, control and mitigation measures, and opportunities to eliminate or mitigate risk at the source are identified and incorporated into a continuous risk reduction program.
- Management and line organizations are actively engaged in the risk management process, with strong understanding of both the key risks and their roles in risk management.

The Practice establishes a process for a) assessing and ranking Health, Safety, Security, Environment & Operations Integrity (HSSE&OI) risks, and b) prioritizing plans for implementation. The established process is consistent with the following OMS GDP's:

- GDP 3.1-0001 on Assessment, Prioritization and Management of Risk, and
- GDP 5.0-0001 on Integrity Management

Application of this practice will help the AzSPU leadership make risk-based decisions and prioritize resources in order to continually reduce HSSE&OI risks throughout the organization. The output of application will be:

- HSSE&OI Risk Registers and Risk Matrices at the following levels:
  - Operating Area level and D&C function level
  - Logistics, PSCM, Subsea Operations and Infrastructure level
  - SPU level
- Clear plans for continuous risk reduction linked to the risk events in the risk registers

## 2. Scope

This document covers the management of all risks related to HSSE & OI. It does not cover management of commercial risks, although during its implementation there could be linkage to financial loss where HSSE&OI risks could result in financial penalty.

This practice encompasses HSSE & OI risk management processes at the SPU level and Operating Area Level, in addition to facility level. This practice shall be applied to facilities that are wholly-owned or operated by BP, for assessment and prioritization

of risks. As such, this practice applies to the following AzSPU operating areas and functions:

- Offshore Operating Areas
- D&C function, including MODU's
- Logistics/Infrastructure operations
- Subsea operations
- Midstream Operating Areas

This practice is not a substitute for other specific risk management processes, such as TRA, MAR, HAZOP, environmental aspects significance screening, health risk assessment, etc; the outputs of these processes shall be used as inputs into the identification of risks in this process. For further information on hazard assessment methodologies please refer to the OMS GRP 3.1-0001 on Selection of Hazard Evaluation and Risk Assessment Techniques.

**Note:** This practice does not apply to major project as that aspect is governed by MPCP.

### 3. Definitions

Refer to document ([AzSPU-HSSE-DOC-00021-2](#)) HSE Definitions for definitions common to this Procedure. Definitions specific to the Procedure are included below (See: [Appendix 5. Definitions](#))

### 4. Roles and Responsibilities

Specific roles and responsibilities are defined for the risk management process as follows:

#### **Operating Areas' Managers, Logistics Manager, SPS Supply Base TL, SOT Manager, Property Services & Housing Manager, Drilling Managers**

They are owners of the respective risk registers. They have accountability to ensure their risk registers are maintained up to date. Also, they will be responsible for providing resources for implementation of the risk management process as described in Section 6

#### **Risk Owner**

A Risk Owner should be assigned to each risk event with accountability to manage it. They will be responsible for:

- Ensuring correct description of the risk event in the risk register
- Supporting assessment of the risk event so that its priority for action can be understood
- Developing any additional risk reduction measures, where needed, and seeking endorsement and resources to implement those measures
- Monitoring the status of the risk, the effectiveness of the existing reduction measures and the progress of any actions in response to further measures
- Providing input into risk register update for that risk.

**Action Owner**

Once the measures to manage the risk event have been endorsed, action owners will be identified and assigned. The action owner is responsible for:

- Implementing the action plan or their assigned part of it
- Achieving the deliverables within the agreed timeline
- Reporting progress to the risk owner
- Advising the risk owner as soon as possible if the action plan or their assigned part of it may not be met, in order to facilitate effective intervention

**Operating Area / Logistics / D&C H&S TLs** will be focal points to support risk management in their areas, and as such, will have good knowledge in risk management process. They will be responsible for:

- Overall management of the risk register and quality assurance of the data contained therein;
- Providing information as needed on the risk management process in a timely manner to inform decision making by relevant Operating Area, D&C management, also by Logistics/PSCM/Subsea Operations/Infrastructure management;
- Consulting with BP Legal, where necessary;
- Providing guidance and coaching in the risk management process, including how to populate and maintain risk events in the risk register and produce reports, how to clearly and adequately describe risk events, how to assess risks and how to create effective risk reduction measures;
- Facilitating risk review workshops;
- Consulting with environmental and health representatives, inviting them to risk review workshops, obtaining Facility 'Environmental Aspect & Impact Registers' and 'Health Maps' and ensuring that significant environmental and health risks are included in the respective HSSE&OI Risk Register.
- Work with SPU Risk Champion to support effective aggregation of the top HSE&OI risks from the Operating Areas, D&C, Logistics, PSCM, Subsea Operations, Infrastructure risk registers into SPU level risk register, also obtain counsel, as needed, to ensure consistency.

**Planning, Performance and Learning Manager** is the SPU Risk Champion and as such is responsible for:

- Developing and maintaining the section of the Local Operating Management System (LOMS) and LOMS Handbook which covers application of the risk management process;
- Collating risk registers from operating areas and other units, and developing a draft SPU level register of top risks to present to SPU Leadership Team;
- Supporting operating areas/facilities in risk identification and categorisation, provide counsel and training in the risk management process;

- Ensuring Facility and Function risks are endorsed at the correct level in the SPU and elevated to the correct level in the organisation if significant;
- Providing training in the risk management process.

In addition, other specific responsibilities and accountabilities are defined for the following roles:

**AzSPU HSE and Engineering VP** is accountable for:

- the overall risk management process as set out in this procedure
- bringing to the attention of the AzSPU Leader significant changes to HSSE&OI risks within the SPU
- helping Area Operations Managers with risk notification to Segment Chief Executive or equivalent according to process described Appendix 4.

**AzSPU Engineering Authority** is accountable for reviewing and advising to AzSPU on current engineering risks and supporting development of continuous improvement plans. The EA will develop and issue AzSPU Annual Engineering Plan.

A BP **legal representative** will be consulted at least annually to discuss the extent of BP legal involvement in the BP entity's risk management process during the period until the next discussion.

## 5. General Requirements

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 (ALARP) and therefore well below that mandated by applicable statutory laws and regulations.

In the absence of local regulations, BP Group Standards will apply ([Group Defined Practices - Group OMS Library](#) GDP 3.1-0001 Assessment, Prioritization and Management of Risk). In addition, appropriate UK and US regulations and industry best practice have been considered in setting suitable goals and targets.

## 6. Overview of AzSPU risk management process

This practice defines the AzSPU process for identifying, assessing, prioritizing and managing operating risks. This includes a structured risk management process and a consistent method of prioritizing HSSE&OI risks that facilitate aggregation from individual Operating Areas (also Logistics, PSCM, Subsea Operations and Infrastructure) / D&C function to SPU.

The Practice focuses on the items that are coloured in Figure 1, namely risk assessment, prioritization and management.

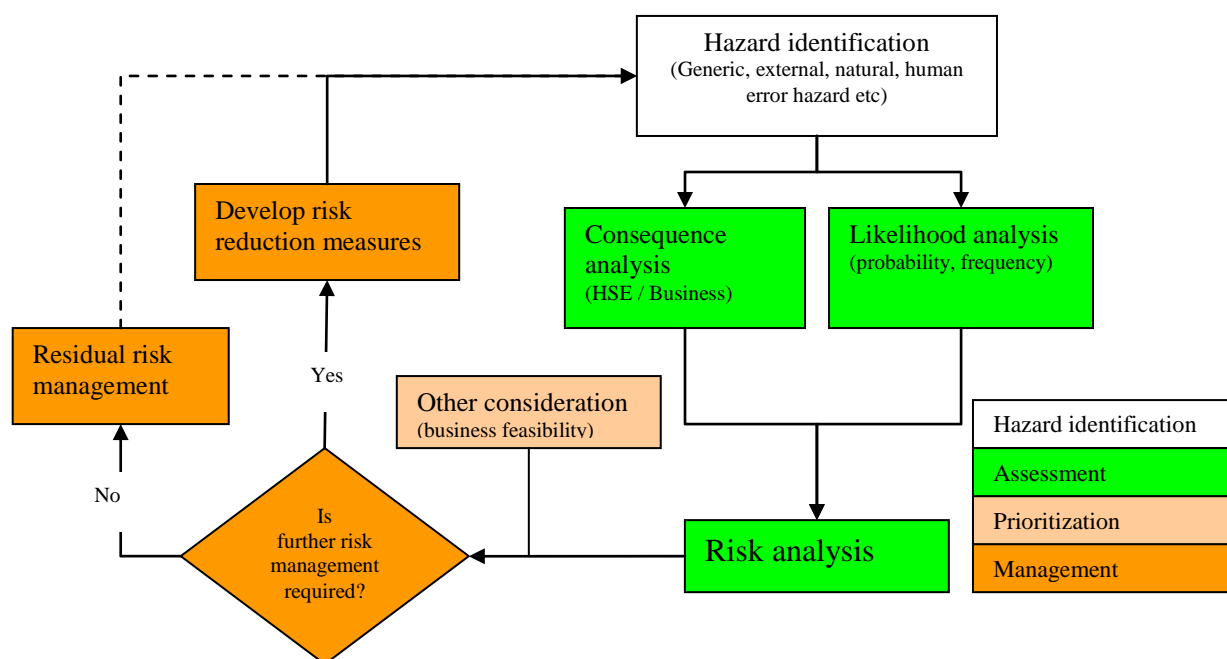
Main components of the Practice are as follows:

- A method of categorizing risks in a consistent way across the SPU to allow comparison and aggregation of risks
- HSSE&OI risk register to capture robust descriptions of each risk event and to rank potential impacts and probability
- SPU-level risk register and risk matrix to support the review and communication of the top SPU risks and to assist in the prioritization of risk management activities.

Identification and assessment of risk events is a key part of the process. HSSE&OI risk events are typically identified and assessed at the operating area and operating facility level. These are then aggregated to SPU level and higher. This allows for a consistent evaluation of risk at various levels within the BP Group.

It should be noted that, this Practice does not establish risk criteria, neither is there any risk criteria endorsed by BP Group or Segment.

**Figure 1 Risk Management Process**



The following is the step-by-step process of how this works in AzSPU:

- Operating facilities compile their risk registers representing the current HSSE&OI risks faced by the individual facilities. These include operational, process and technical risks;
- These risks are reviewed and ranked to Operating Area level risk register (ref Subsection 6.1.1). Each Operating Area shall have in place up to date risk register. These include HSE&OI risks pertinent to operations, as well as risks pertinent to D&C in offshore Operating Areas;
- In addition, D&C function compiles a risk register presenting MODU's risks;
- Also, Logistics, PSCM, Subsea Operations and Infrastructure each will have their registers representing key HSE&OI risks to their assets and operations;
- Those risks, which Operating Areas, also, Logistics, PSCM, Subsea Operations, Infrastructure and D&C have identified as being significant to the SPU, are aggregated to the SPU HSSE&OI risk register (ref Subsection 6.1.2.). These will mainly encompass the risks having severity level E and above;
- The draft SPU risk register and matrix is reviewed and approved by the VP HSE and Engineering and the SPU EA;
- ALT reviews the final SPU HSSE&OI risk matrix. Requests for further action or assurance are then made to the line;
- Where necessary, the SPU's highest risk(s) and associated action plan(s) are notified up to Segment/Group level (see Appendix 4).



## 6.1 Risk registers

The following risk registers will be developed and maintained in AzSPU

<b>Operating Area Risk Registers (required for each Operating Area)</b>	
Maintained by	Operating Area H&S TL
Owned by	Operating Area Manager
Content	Risks identified through MAR, HAZOP, LOPA, environmental aspects significance screening, health risk assessment, employee concerns, incident investigations, etc. Scope covering both operations and drilling related risk events. No limitation on content, however typically around 30-40.
<b>AzSPU Drilling &amp; Completions Risk Register<sup>1</sup>: MODU's</b>	
Maintained by	Drilling H&S TL
Owned by	VP D&C
Content	Top HSSE&O risk events identified for DDGG, Istiglal and other drilling MODU operations. Note: BP platform drilling risks are included into Operating Area risk registers.
<b>Risk Registers for Logistics/PSCM/Subsea Operations/Infrastructure</b>	
Maintained by	Logistics H&S TL
Owners	Logistics Manager, SPS Supply Base TL, SOT Manager, Property Services & Housing Manager
Content	Risks identified through various risk assessment, audits & inspections, incident investigations, etc. No limitation on content, however typically around 30-40.
<b>AzSPU Aggregated Top HSE&amp;OI Risk Register</b>	
Maintained by	AzSPU Risk Champion
Owned by	AzSPU HSE and Engineering VP
Content	Aggregated 15-18 top risks from all Operating Areas', Logistics/PSCM/Subsea Operations/Infrastructure and D&C function risk registers.

### 6.1.1 Operating Areas', Logistics, PSCM, Subsea Operations, Infrastructure and D&C Registers

Each AzSPU Operating Area, also Logistics, PSCM, Subsea Operations, Infrastructure will establish their HSE&OI risk registers to record and help manage risks. The risk registers will include risks relevant to operations, as well as D&C risks in the given operating area, where relevant.

In addition, D&C function will establish a risk register<sup>1</sup> to record drilling specific risks pertinent to MODUs such as DDGG and Istiglal.

<sup>1</sup> D&C function uses BP RAT tool for recording MODU's risks



The risk registers shall capture the following information as a minimum:

1. A risk title with unique ID.
2. A description of the risk event.
3. The causes.
4. The potential health and safety and environment impacts<sup>2</sup>
5. The potential financial and non-financial business impacts
6. The estimated likelihood of occurrence.
7. The name of the person responsible for managing the risk.
8. The additional actions to further reduce the risk and the names of those responsible for the actions.

The risk registers will be reviewed and updated by each operating area/facility twice a year, or more frequently if new hazard information becomes available. For this purpose, the Operating Area H&S TL, Logistics H&S TL and D&C H&S TL will organise review of their risk registers, involving representatives from Operations, Engineering and HSE as a core review team, plus other disciplines as deemed necessary. The review team will update existing risk management information and also look for outputs of recent safety studies/assessments.

**Note:** When organising offshore Operating Area risk register review, the relevant Operating Area H&S TL will ensure relevant representatives from D&C function are present to provide input on drilling related risks pertinent to BP platforms.

In addition to those directly involved in the review, participants will have consultation(s) with relevant TA's and SME's, as necessary, to obtain further information and professional advice to be able to arrive at better estimation of the risk potential or severity, as well as when discussing the reliability and effectiveness of the existing control and mitigation measures

The Operating Area, Logistics and D&C (also Logistics and SOT) H&S TL will consult with the SPU Risk Champion as needed to correlate their risk rating with cross-SPU risk ranking.

### 6.1.2 Aggregation to SPU level

The SPU level risk register will be developed based on aggregation of risk information from the following risk registers:

- Operating Area Risk Register
- Drilling & Completions Risk Register (MODU's)
- Logistics Risk Register
- PSCM Risk Register
- Subsea Operations Risk Register
- Infrastructure Risk Register

The intent is to provide an aggregated view of risks at the SPU level and to facilitate strategic management of risk and allocation of resources across the organization.

For this purpose, each Operating Area, also Logistics, PSCM, Subsea Operations, Infrastructure and D&C will provide access to the risk information contained in the risk registers to enable aggregation of risks to SPU level.

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<sup>2</sup> NB: information on significant health risks shall be included from relevant Facility 'Health Maps' and significant environmental aspects / impacts shall be included from relevant Facility 'Environmental Aspect & Impact Registers'

### 6.1.3 Review of SPU's top HSE&OI risks

The aggregated SPU top risks draft will be prepared by the Risk Champion. To make it of a manageable size, the AzSPU Top Risks Register will not include risks that have potential less than "E".

Initially it will be reviewed by EA and HSE & Engineering VP. Any potential correlations will be done at this stage. Then the top SPU risks will be reviewed by ALT as part of the SPU Performance Review Process. ALT will review the descriptions of the aggregated risks, risk ranking, any new or planned controls or mitigations and associated actions. Particular focus would be on those risks where combination of probability and consequence place them in the "purple" risk category. Those risks, along with action plans, are reportable to the Segment (see Subsection 6.1.4)

It is quite likely that ranking of the risks are adjusted by ALT during the review. In such cases, the AzSPU Risk Champion will issue notification to the Risk Register Owners about these changes and ensure the risk registers at the Operating Area, Logistics, PSCM, Subsea Operations and D&C levels are updated as necessary.

### 6.1.4. Notification to segment

Process for notification of the highest risks and associated action plans upward to the Segment Chief Executive level will be managed by the AzSPU CFO.

Following the ALT review as described above, the AzSPU Risk Champion will finalise the AzSPU Top HSE&OI risks and issue it to the ALT members involved. When there is any risk (or risks) in the purple risk category, a request will be made to the risk owner(s) to officially complete and submit Action Plan Endorsement document for each of those risks. The risk owners will consult with Legal whilst preparing the Action Plans and ensure Legal has reviewed their submissions.

Once finished the Risk Champion will review those document(s) and pass on to SFO for submission to Segment on behalf of the SPU CFO. The action plans will be submitted for review by SET and signed off by the Segment CEO.

Implementation of endorsed action plans will be assured by the annual planning cycle as well as being within the scope of S&O Audit. Any extensions to an SPU's action plans shall require re-submission for endorsement as part of this annual review process.

### 6.1.5 Risk Management Matrix

As part of the Group Planning process, the AzSPU will produce or update a Risk Management Matrix (RMM). The RMM document presents the SPU leadership's view of the key risks facing the SPU reported against each of the *Group Risk Categories* along with the list of activities which respond to these risks. It includes the most significant risks to the SPU (i.e. with an HSSE or Business Impact of "E" or above), placed in the appropriate Group Risk Category. The process for maintaining and updating the RMM is driven by the CFO.

The AzSPU Risk Champion will add the SPU's updated top HSE&OI risks into the RMM and review with the CFO. The following details will be added to the RMM:

- Risk Impact
- Controls which reduce the likelihood
- Specific contingencies which limit the impact of the SPU key risks
- Specific monitoring activities carried out by Line management and Functions to monitor whether controls and contingencies are working as intended to manage the risk
- Assurance activities which external independent organisations undertake to consider whether controls, contingencies and/or monitoring activities are designed well and working as intended.

Risk owners will support the Risk Champion with provision of the above details for each risk.

## **6.2. Identification of Risks**

AzSPU business operations involve a wide spectrum of activities. HSSE and integrity risks are inherent to the nature of these activities. It is important to understand these risks so reasonable measures can be implemented to prevent accidents or limit their consequences to people, company assets and the environment.

There are a number of potential triggers that identify when the potential for risks might be considered and evaluated. These triggers include, but are not limited to the following:

- Brownfield projects
- Facility changes – MOC process
- New standards requiring new hazard and risk studies
- Serious operational excursions outside of established safe operating envelopes
- Audit identified deficiencies should be examined for impact on risk
- An incident within the SPU or Group highlighting a risk not previously identified or fully assessed.

Operating Areas and D&C, also Logistics, PSCM, Subsea Operations, and Infrastructure shall identify operating risk events associated with health, safety, environment and business impacts. These will be identified utilizing methodologies and tools in use in AzSPU, such as MAR, TRA, HAZOP/HAZID, Environmental Aspect & Impact Registers, Health Maps, etc. [GRP 3.1-0001](#) should be used to support selection of tools for evaluating (identifying and understanding) hazards and assessing risks.

Identified risk events will be registered in the Operating Area's and D&C risk registers, also Logistics, PSCM, Subsea Operations, Infrastructure risk registers. The length of the risk register at this level is not regulated, but typically would be around 30-40 risk entries. Risk events that would require endorsement of the action plan at the Operating Area Manager, Drilling Manager, Logistics Manager, SPS Supply Base TL, SOT Manager, Property Services & Housing Manager or higher shall appear on the respective risk registers.

Proper description of risk events in the risk register is important for further stages of the risk management. When including a risk event into the risk register, it shall be included with a description of a tangible outcome. Risk events should not be confused with causes or failures in risk reduction measures, such as poor contractor performance, lack of training, etc - these are not risk events.

Where any integrity-related risk is included in a risk register, the risk when included shall reflect the condition of the facility.

## 6.3 Assessment of Risks

Identification and assessment of risks are part of standard processes and tools, such as HAZOP, TRA, MAR, QRA, environmental aspects significance screening, health risk assessment, etc as mentioned above. These specific processes and methodologies are described within the respective procedures and ETPs/STPs.

The risk information from these tools is then collated and used to update the risk registers. This part of the process is described below in the following subsections.

### 6.3.1 Risk Review Process

To review the risk information from above sources for inclusion into the risk registers, Operating Areas, Logistics, PSCM, Subsea Operations, Infrastructure and D&C will use facilitated discussions with participants familiar with their facility's day-to-day operations. It is the responsibility of the Operating Area H&S TL, Logistics H&S TL and D&C H&S TL to ensure right participants are gathered for the risk register review sessions. This would include engineering, HSE, Operations and other disciplines (e.g. DC&I) as necessary.

**Note:** When organising for review of the offshore Operating Areas' risk registers, the Operating Area H&S TL will ensure relevant representatives from D&C function are present to provide input on drilling related risks pertinent to the platform under review.

The review participants will work on and update the existing risk register, using risk information from other risk identification and assessment studies as mentioned above. The outcomes of the assessment should be used to update the information in the risk registers.

For the SPU level risks, the participants will plot the aggregated top risks on a risk matrix to support decision-making and the understanding of the relative significance of HSE&OI risks. They will use the BP Risk Matrix for this purpose (Appendix 3). Although, HSE and business impacts will be shown on the same risk register, these will be plotted on different risk matrices.

It should be noted that, only top risks with minimum severity level of E and ranking 9 and above, will be considered for aggregation and plotting on the SPU Risk Matrix.

### 6.3.2 Impact identification and evaluation

For some hazards, multiple risk events may exist, each with their own potential HSE and business impacts and associated frequencies/probabilities. In this case, the risk

event with the highest notification and endorsement level (see Appendix 4) shall be selected and recorded as the representative risk. Where there is more than one risk event with the highest notification and endorsement level, the one with the highest risk rating shall be selected.

The full range of HSE and business impact types should be considered and may be recorded for each risk event. However, where one or more impact types are clearly dominant and sufficient to drive prioritization and effective risk reduction, the other impact types need not be determined and recorded.

If multiple risk events exist for a particular hazard, then consideration may be given to viewing these as separate risks.

### 6.3.3 Assessment and categorisation

For each risk event, an assessment of its likelihood and potential impact(s) shall be made using the BP Risk Matrix (see Appendix 3). Assessments shall include:

- The probability/frequency criteria or the qualitative descriptions of likelihood to assign a Level (1 to 8) for the likelihood of occurrence of the risk.
- The impact criteria given in Appendix 1 and Appendix 2 to assign a Level A to H to the potential impact(s) of the risk.
- A risk rating 1 to 15.

The assessment shall take into account and record the risk reduction measures that are currently in place, their effectiveness, and other factors that could change the probability / frequency of a risk event or its impact. If such a risk reduction measure has a defined performance standard, the standard shall be considered when assessing its effectiveness.

Where a risk event has both potential HSE impacts and potential business impacts, these shall be separately assessed to support effective prioritization.

There are two sets of probability and frequencies, also likelihood descriptors are available in the BP Risk Matrix (Appendix 3) and users can use any of these for assessment. However, preference should be given to quantitative values which may be obtained from other safety/technical studies, such as MAR review, etc. Any quantitative values used to determine the impact (A to H) and probability / frequency (1 to 8) levels are held in the register to substantiate why a particular category was selected. When generic industry historical data is used to support the assessment of a risk, consideration should be given to the factors that could alter its impact or the probability.

A more in-depth analysis should be applied to a risk which has been identified as important (e.g., a risk with potential for multiple fatalities) and merits further detailed review. The outcomes of the assessment should be used to update the risk assessment in the risk register.

Assessed risks shall be notified to the appropriate leader as determined by the endorsement levels described in Section 8.

## 6.4 Risk reduction plans and endorsement

All operations and functions must actively seek measures to further reduce risk and prioritise these in relation to their risk reduction benefits. Also, they shall test and maintain the continued effectiveness of existing risk reduction measures on which the assessment is based.

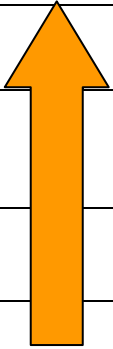
The Operating Area, Logistics, PSCM, Subsea Operations, Infrastructure and D&C risk registers should include information about new risk reduction measures and this should be in the following format:

Newly developed risk reduction measures shall be associated with a clear set of deliverables and a timeline for completion (the action plan), using the principle of continuous risk reduction combined with local business judgement.

The action plan shall take into account the risk rating and how quickly action is needed and can be taken. The action plan should include specific deliverables that need to be completed, names of those who are defined as responsible for completion, review dates and target completion dates. The risk register should have a reference to the action plan

The action plan is subject to endorsement by the appropriate Operating Area Manager, Logistics Manager, SPS Supply Base TL, SOT Manager, Property Services & Housing Manager and D&C Managers, as defined in **Appendix 4**. The endorsed action plan shall be incorporated into business plans or operating management systems, actions entered into Traction for tracking them through completion.

**Table 1: Types of Risk Reduction Measures**

Type of Risk Reduction Measure	Examples	Increasing Effectiveness
Elimination	Eliminated by use of substitution (e.g. use of different chemical reactants, cancelling an activity, or deferring or limiting an activity to reduce the exposure to hazards)	
Prevention	Prevented at source (e.g. use of alloys that are resistant to corrosion)	
Control	Controlled through design features or administrative procedures (e.g. fire/gas detection and emergency shutdown)	
Mitigation	Mitigated by protection of personnel (e.g. use of Personal Protective Equipment (PPE))	
Emergency Response/ Contingency Plans	Mitigated through effective Emergency Response or Contingency Planning	

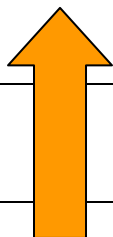


Resources and budgets to implement and maintain identified risk reduction measures shall be prioritized and obtained via the annual planning process. If the need for risk reduction measures is identified outside the annual business planning process, facilities should consider whether any modification is needed to the annual plan and associated resources.

The effectiveness of risk reduction measures should be assessed using [Table 1](#).

For each risk, a range of control/mitigation options will be considered to ensure it is addressed in the most practical way. Controls should be assessed according to their reliability based on the guide in [Table 2](#) Control Types. Reliance upon administrative or procedural controls alone should not form the basis for longer-term risk reduction plans.

**Table 2: Control Types**

Control types	Examples	Increasing reliability
Passive measures	Preventing a shore tank overflowing during a discharge operation from a ship by installing a tank that is larger than the ship's capacity.	
Active measures	Preventing a shore tank overflowing during a discharge operation from a ship by installing a high level shutdown system.	
Administrative or procedural controls	Preventing a shore tank overflowing during a discharge operation from a ship by relying on operator monitoring and control.	

The new controls, when implemented, should reduce the risk to a more tolerable level and/or bring it to within acceptable criterion. Even if the risk level is within acceptable criteria, it is good practice to establish if further risk reduction measures can be implemented.

When prioritizing risk reduction measures, HSE and business impacts should be considered separately. For HSE impacts, the prioritization should take into consideration the effectiveness of the risk reduction measures in lowering the HSE risk rating. When prioritizing measures solely aimed at reducing business impacts, the prioritization should also take into account the cost of the measure.

#### 6.4.1 Annual Engineering Plan

AzSPU EA will review top technical risk information from the SPU level Risk Register and include the summary information into the Annual Engineering Plan.

#### 6.4.2 Communication of risk reduction measures and their importance

Importance of the risk reduction measures put in place to manage the identified risks, and the reasons for them will be communicated to relevant people in SPU. For this reason, a risk management process awareness package will be prepared and rolled out to sites with help from H&S TL's. The package will include brief information about



the Operating Areas' updated top risks and associated mitigation and control measures

Also, the updated Operating Area level risk registers will be placed in Dk and be accessible to all SPU employees. A link to the registers in Dk will be included into the awareness pack.

Also, a brief version of the risk register would typically be posted in operational sites for attention of employees

In addition, information about planned risk mitigation activities and programmes will be included into Annual Operating Plans, Annual Engineering Plan, Annual Marine Plan, and communicated as per existing protocol.

## **6.5 Monitor and Review**

The Operating Area risk registers, also Logistics, PSCM, Subsea Operations, Infrastructure risk registers and D&C risk registers shall be reviewed and updated at least biannually, or more frequently when there is a change that adds new risk or materially changes an existing risk. The following factors should be considered as potential triggers for updating the facility risk register:

- Organization change (including engaging new suppliers and contractors).
- Brownfield projects
- Facility changes
- Regulatory changes
- Serious operational excursions outside of established safe operating envelopes
- Other incidents highlighting a risk not previously identified or fully assessed
- New Standards (internal and external) requiring new hazard and risk studies.

Risk owners should notify the appropriate Operating Area H&S TL, Logistics H&S TL, and where relevant the D&C H&S TL, when such a change occurs. The H&S TL then will ensure the risk entry is updated. Any updates will be communicated to the appropriate people for action.

The progress and closure of actions relating to risks and the effectiveness of these actions are monitored by the Risk Owner, and where necessary, corrective actions are developed. Where corrective actions result in a change to the action plan, the revised action plan shall be subject to the notification and endorsement process as discussed in previous sections above.

## **7. Legal Note**

This practise is believed not to constitute conflict with the existing local legislation in Azerbaijan and Georgia. However, in the event of a possible conflict between this practice and applicable legal and regulatory requirements identified in the future, the applicable legal and regulatory requirements will be followed.

## 8. Key documents/Tools/References

- GDP 3.1-0001 Assessment, Prioritization and Management of Risk
- GDP 5.0-0001 on Integrity Management
- GRP 3.1-0001 Selection of Hazard Evaluation and Risk Assessment Techniques
- [AzSPU-HSSE-DOC-00021-2](#) AzSPU HSE Definitions

## Appendix 1. Risk Framework - HSE Impact Levels

SEVERITY		HEALTH AND SAFETY	ENVIRONMENTAL
A	Levels A-C maintain the visibility of risks with the potential for catastrophic impact even if their probability of occurrence is extremely low. The upper level of this framework is defined by the most severe level of impact ever seen in industry.	Comparable to the most catastrophic health/ safety incidents ever seen in industry.  The potential for 100 or more fatalities (or onset of life threatening health effects) shall always be classified at this level.	<ul style="list-style-type: none"><li>Future impact, e.g., unintended release, with widespread damage to any environment and which remains in an "unsatisfactory" state for a period &gt; 5 years.</li><li>Future impact with extensive damage to a sensitive environment and which remains in an "unsatisfactory" state for a period &gt; 5 years.</li><li>Future impact with widespread damage to a sensitive environment and which can only be restored to a "satisfactory"/agreed state in a period of more than 1 and up to 5 years.</li></ul>
B		Catastrophic health/ safety incident causing very widespread fatalities within or outside a facility.  The potential for 50 or more fatalities (or onset of life threatening health effects) shall always be classified at this level.	<ul style="list-style-type: none"><li>Future impact with extensive damage to a non-sensitive environment and which remains in an "unsatisfactory" state for a period &gt; 5 years.</li><li>Future impact with extensive damage to a sensitive environment and which can only be restored to a "satisfactory"/agreed state in a period of more than 1 and up to 5 years.</li><li>Future impact with widespread damage to a non-sensitive environment and which can only be restored to a "satisfactory"/agreed state in a period of more than 1 and up to 5 years.</li><li>Future impact with widespread damage to a sensitive environment and which can be restored to an equivalent capability in a period of around 1 year.</li></ul>
C		Catastrophic health/ safety incident causing widespread fatalities within or outside a facility.  The potential for 10 or more fatalities (or onset of life threatening health effects) shall always be classified at this level.	<ul style="list-style-type: none"><li>Future impact with extensive damage to a non-sensitive environment and which can only be restored to a "satisfactory"/agreed state in a period of more than 1 and up to 5 years.</li><li>Future impact with widespread damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of around 1 year.</li><li>Future impact with extensive damage to a sensitive environment and which can be restored to an equivalent capability in a period of around 1 year.</li><li>Future impact with widespread damage to a sensitive environment and which can be restored to an equivalent capability in a period of months.</li></ul>
BP's commitment to health, safety and the environment is paramount; this is reflected in BP's HSE goal of "No Accidents, No Harm to People, and No Damage to the Environment". No accident, injury, or loss of containment causing damage to the environment is ever “acceptable” to BP. BP is using this framework (equivalents of which are used throughout industry) to support the consistent prioritization of actions to eliminate or mitigate HSE risk and as part of BP's Performance Improvement Cycle to deliver continuous risk reduction.			
D	Very major health/ safety incident  The potential for 3 or more fatalities (or onset of life threatening health effects) shall always be classified at this level.  30 or more injuries or health effects, either permanent or requiring hospital treatment for more than 24 hours.	<ul style="list-style-type: none"><li>Future impact with extensive damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of around 1 year.</li><li>Future impact with localized damage to a sensitive environment and which can be restored to an equivalent capability in a period of around 1 year.</li><li>Future impact with widespread damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of months.</li><li>Future impact with extensive damage to a sensitive environment and which can be restored to an equivalent capability in a period of months.</li></ul>	
E	Major health/ safety incident  1 or 2 fatalities, acute or chronic, actual or alleged.  10 or more injuries or health effects, either permanent or requiring hospital treatment for more than 24 hours.	<ul style="list-style-type: none"><li>Future impact with localized damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of around 1 year.</li><li>Future impact with extensive damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of months.</li><li>Future impact with localized damage to a sensitive environment and which can be restored to an equivalent capability in a period of months.</li><li>Future impact with extensive damage to a sensitive environment and which can be restored to an equivalent capability in a period of days or weeks.</li></ul>	
F	High impact health/ safety incident  Permanent partial disability(ies)  Several non-permanent injuries or health impacts.  Days Away From Work Case (DAFWC)	<ul style="list-style-type: none"><li>Future impact with localized damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of months.</li><li>Future impact with immediate area damage to a sensitive environment and which can be restored to an equivalent capability in a period of months.</li><li>Future impact with extensive damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of days or weeks.</li><li>Future impact with localized damage to a sensitive environment and which can be restored to an equivalent capability in a period of days or weeks.</li></ul>	

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SEVERITY	HEALTH AND SAFETY	ENVIRONMENTAL
<b>G</b>	Medium impact health/ safety incident Single or multiple recordable injury or health effects from common source/event.	<ul style="list-style-type: none"> <li>• Future impact with immediate area damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of months.</li> <li>• Future impact with localized damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of days or weeks.</li> <li>• Future impact with immediate area damage to a sensitive environment and which can be restored to an equivalent capability in a period of days or weeks.</li> </ul>
<b>H</b>	Low impact health/ safety incident First aid Single or multiple over-exposures causing noticeable irritation but no actual health effects	<ul style="list-style-type: none"> <li>• Future impact with immediate area damage to a non-sensitive environment and which can be restored to an equivalent capability in a period of days or weeks.</li> </ul>

## Appendix 2. Risk Framework - Business Impact Levels

SEVERITY*	Non-Financial Impact	Financial Impact (EQUIPMENT DAMAGE, BUSINESS VALUE LOST)
<b>A</b>	Public or investor outrage on a global scale. Threat of global loss of license to operate.	>\$20 billion
<b>B</b>	Loss of license to operate a major asset in a major market – US, EU, Russia. Intervention from major Government – US, UK, EU, Russia. Public or investor outrage in major western markets – US, EU. Damage to relationships with key stakeholders of benefit to the Group.	\$5 billion - \$20 billion
<b>C</b>	Loss of license to operate other material asset, or severe enforcement action against a major asset in a major market. Intervention from other major Government. Public or investor outrage in other material market where we have presence or aspiration.	\$1 billion - \$5 billion
<b>D</b>	Severe enforcement action against a material asset in a non-major market, or against other assets in a major market. Interventions from non-major Governments. Public or investor outrage in a non-major market, or localised or limited “interest-group” outrage in a major market. Prolonged adverse national or international media attention. Widespread adverse social impact. Damage to relationships with key stakeholders of benefit to the Segment.	\$100 m to \$1 billion
<b>E</b>	Other adverse enforcement action by regulators. Limited “interest-group” outrage in non major market. Short term adverse national or international media coverage. Damage to relationships with key stakeholders of benefit to the SPU.	\$5m - \$100 m
<b>F</b>	Regulatory compliance issue which does not lead to regulatory or other higher severity level consequence Prolonged local media coverage. Local adverse social impact. Damage to relationships with key stakeholders of benefit to the Performance Unit (PU).	\$500k-\$5m
<b>G</b>	Short term local media coverage. Some disruption to local operations (e.g., loss of single road access less than 24 hours).	\$50k - \$500k
<b>H</b>	Isolated and short term complaints from neighbours (e.g., complaints about specific noise episode).	<\$50k

The colours in the above table are for use on a Risk Management Matrix (RMM). This is a tool used by BP group leadership to report and manage SPU, segment and BP group risk. For those risk events which are included in the RMM, the following guidance applies:

- Risks with Impact levels C and above are recorded on the BP group RMM.
- Risks with Impact levels D and above are recorded on the Segment RMM.
- Risks with Impact levels H and above are recorded on the SPU/Operating Area RMM.

In some cases, Level D impacts may be elevated to BP group impact. For risks in category D, the segment Chief Executive Officer (CEO), Chief Operating Officer (COO) or Strategic Performance Unit Leader (SPUL) will determine whether a particular risk should be elevated.

## Appendix 3. BP Risk Matrix

	Likelihood of Risk Event							
	1	2	3	4	5	6	7	8
Severity Level	A similar event has not yet occurred in our industry and would only be a remote possibility	A similar event has not yet occurred in our industry	Similar event has occurred somewhere in our industry	Similar event has occurred somewhere within the BP Group	Similar event has occurred, or is likely to occur, within the lifetime of 10 similar facilities	Likely to occur once or twice in the facility lifetime	Event likely to occur several times in the facility lifetime	Common occurrence (at least annually) at the facility
A	8	9	10	11	12	13	14	15
B	7	8	9	10	11	12	13	14
C	6	7	8	9	10	11	12	13
D	5	6	7	8	9	10	11	12
E	4	5	6	7	8	9	10	11
F	3	4	5	6	7	8	9	10
G	2	3	4	5	6	7	8	9
H	1	2	3	4	5	6	7	8
Frequency	$10^{-6}$ /yr or lower	$>10^{-6}$ to $10^{-5}$ /yr	$>10^{-5}$ to $10^{-4}$ /yr	$>10^{-4}$ to $10^{-3}$ /yr	$>10^{-3}$ to $10^{-2}$ /yr	$>10^{-2}$ to $10^{-1}$ /yr	$>10^{-1}$ to 1 /yr	$>1$ / yr
Probability	$10^{-6}$ or lower	$>10^{-6}$ to $10^{-5}$	$>10^{-5}$ to $10^{-4}$	$>10^{-4}$ to $10^{-3}$	$>10^{-3}$ to $10^{-2}$	$>.01$ to 0.1	$>.1$ to 0.25	$>.25$

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## Appendix 4. Notification and Endorsement levels

### Required Actions:

Once a risk has been assessed, refer to Section 5 of this practice on how to respond to the risk. For continued operation at a risk and severity level described in the table below, the identified leader shall be notified within a period defined by the Segment, and the action plan for implementation of risk reduction measures shall be subject to that leader's endorsement. The posts which correspond to "facility leader" shall be defined.

Risk Category	Identified Leader for Notification and Endorsement
PURPLE	Segment chief executive or equivalent
BLUE	Operations VP, Midstream VP, D&C VP
TURQUOISE	Operating Area Manager, Logistics Manager, SPS Supply Base TL, SOT Manager, Property Services & Housing Manager
WHITE	No leader for notification/endorsement identified for these risks

## Appendix 5. Definitions

The terms associated with this specific document are defined in this section. Some terms may already be defined in the [Group OMS Glossary](#) or the [BP HSE Reporting Definitions](#) document. The definitions for those terms contain a link to the appropriate document.

Term	Definition
<b>Action Plan</b>	A plan to implement risk reduction measures with a clear set of deliverables and a timeline for completion.
<b>Annual Plan</b>	<a href="#">Group OMS Glossary</a>
<b>Assess</b>	The phase of the risk management process in which further information is gathered about each identified risk. Assessment will include estimating the likelihood and impact of specific risks and their combined effect.
<b>BP Entity</b>	An organizational unit within BP which may be a Performance Unit, Business Unit, Strategic Performance Unit, Segment or some logical sub-group of one of these, which shall be defined by the Segment, Function or Region. Each BP entity operating on OMS will have a consistent Local Operating Management System (LOMS) documented in an LOMS Handbook.
<b>BP Entity Leader</b>	Leader of BP entity.
<b>Business Value Loss</b>	<a href="#">BP HSE Reporting Definitions</a>
<b>Continuous Improvement</b>	<a href="#">Group OMS Glossary</a>
<b>Continuous Risk Reduction</b>	The principles of continuous improvement applied to reducing risk.
<b>Contractor</b>	<a href="#">Group OMS Glossary</a>
<b>Entity Level Risk</b>	<a href="#">Group OMS Glossary</a>
<b>Facility Level</b>	The most appropriate level in the organization at which effective risk management takes place.
<b>Frequency</b>	The number of times an event occurs over a period of time, usually a year.
<b>Hazard</b>	Condition or practice with the potential to cause harm to people, the environment, BP's reputation, assets or business impact.
<b>Identify</b>	The phase of the risk management process in which the risk events are identified and articulated. Risk events can be identified in many ways, including from established functional processes.
<b>Impact</b>	The harm to people, the environment, BP's reputation, assets or business impact if a risk event should occur.
<b>Implement</b>	<a href="#">Group OMS Glossary</a>
<b>Incident</b>	<a href="#">BP HSE Reporting Definitions</a>
<b>Legal and Regulatory Requirements</b>	<a href="#">Group OMS Glossary</a>
<b>Local OMS Handbook</b>	<a href="#">Group OMS Glossary</a>

<b>Term</b>	<b>Definition</b>
<b>Major Accident</b>	<a href="#">BP HSE Reporting Definitions</a>
<b>Major Accident Risk (MAR) Assessment</b>	<a href="#">BP HSE Reporting Definitions</a>
<b>Monitor</b>	The phase of the risk management process concerned with monitoring the effectiveness and progress of the risk management process, applying corrective action as appropriate.
<b>Operating</b>	<a href="#">Group OMS Glossary</a>
<b>Operating Management System (OMS) Framework</b>	<a href="#">Group OMS Glossary</a>
<b>Opportunity</b>	A measure of the benefit to business performance in terms of the product of the likelihood (probability or frequency) and the magnitude of its impact. Applicable to projects where a baseline set of performance expectations have been established that through superior performance can be bettered (e.g., faster schedule, lower capex, and greater production).
<b>Opportunity Event</b>	Occurrence of an unplanned set of circumstances with an associated benefit to business performance. For the purposes of this document, opportunity events are only applicable for projects.
<b>Performance Improvement Cycle (PIC)</b>	<a href="#">OMS Part 3 - OMS Performance Improvement Cycle</a> <a href="#">Group OMS Glossary</a>
<b>Principles</b>	<a href="#">Group OMS Glossary</a>
<b>Probability</b>	Likelihood of occurrence of an event, taking into account existing measures that are in place. Probability is usually considered over a fixed period, for example over the phase of a project or one-year.
<b>Process Safety</b>	<a href="#">Group OMS Glossary</a>
<b>Residual Risk</b>	The level of risk that remains when risk reduction measures are taken into account.
<b>Respond</b>	The phase of the risk management process in which actions/measures are planned, approved for action and implemented.
<b>Risk</b>	<a href="#">Group OMS Glossary</a>
<b>Risk Aggregation</b>	Grouping of a number of risk events with similar causes and/or consequences under a single description. Aggregation of risks can be done at all levels within the organization (e.g., site, Performance Unit (PU), Strategic Performance Unit (SPU), segment or BP group). It is useful in identifying where more general and wide ranging risk reduction measures address multiple scenarios and/or multiple assets.
<b>Risk Assessment</b>	The process by which the impact and likelihood of a risk is assessed.
<b>Risk Event</b>	Occurrence of an unplanned set of circumstances with an undesired impact in terms of harm to people, the environment, BP's reputation, assets or business impact.
<b>Risk Management</b>	The overall process by which risks are identified, assessed, prioritized for action and the risk status and actions/ measures are tracked to completion.

Term	Definition
<b><i>Risk Reduction Measures</i></b>	<a href="#">Group OMS Glossary</a>
<b><i>Risk Register</i></b>	<a href="#">Group OMS Glossary</a>
<b><i>Workforce</i></b>	<a href="#">Group OMS Glossary</a>

## Appendix 6: Risk Register Proforma

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Operating Area/Facility HSSE&OI Risk Register												Owner:					
												Last updated:					
ID No	Risk Title	Risk event description	Causes	Existing Control measures  <i>Plant: Process: People:</i>	Existing Mitigations	Risk Before				Risk Owner	Additional action(s) to further reduce the risk	Action Owner	Target completion date	Risk After			
						Potential HSE impacts (denote H, Sa, Se, Env in bracket)	Potential Business Impacts	Likelihood of occurrence	Risk					Potential HSE impacts (denote H, Sa, Se, Env in bracket)	Potential Business Impacts	Likelihood of occurrence	Risk
						A to H	A to H	1 to 8	1 to 15					A to H	A to H	1 to 8	1 to 15

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## Revision/Review Log

Revision Date	Authority	Custodian	Revision Details
<<26-Sep-08>>	Mattson, Greg	McNulty, Alan	Initial Issue
<<23-Apr-09>>	Mattson, Greg	Zaytsev, Yuliy	Custodian position/name has changed to reflect org changes in HSE&TD
14 September 2010	Barnes, Mike	Adalat Mamedov	<p>The Practice has been updated to ensure its alignment with the new GDP 3.1-0001 Assessment, Prioritization and Management of Risk, issued on October 2009, also with GDP 5.0-0001 on Integrity Management</p> <p>Main change is about clarity around the roles, some of which are standard roles across the E&amp;P Segment</p> <p>Also, in the new practice HSE and business risks shall be classified distinctively. There might be cases when multiple risk events may exist for some hazards, each with their own potential H, S, E and Business impacts and associated frequencies/probabilities. In these cases, separately for HSE and Business impacts, the risk event with the highest notification and endorsement level will be selected and recorded as the representative risk</p> <p>Format of the risk registers have been changed too</p> <p>Risk Reduction plans notification and endorsement levels have changed: for risks with severity levels H, G &amp; F no notification and endorsement needed now above the Operating Area Manager level, even if the risks are ranked 9 or 10.</p> <p>Also, provided clear description on upward notification of risks and submission of the action plan endorsement documents</p> <p>The requirement was introduced to include information on significant health risks from relevant Facility 'Health Maps' and significant environmental aspects / impacts from relevant Facility 'Environmental Aspect &amp; Impact Registers'.</p>

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