



Ministry  
of Defence



**DE&S SAFETY AND ENVIRONMENTAL PROTECTION LEAFLET 03/2011**

**EQUIPMENT SAFETY AND ENVIRONMENTAL PROTECTION (SEP)  
RISK REFERRAL**

**Guidelines for the Referral of Equipment Safety and Environmental Protection Risks to Senior Authorities**

**Sponsor: DES EngSfty QSEP-Hd**

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**INTRODUCTION**

1. Military operations may exceptionally demand that personnel or environmental receptors are exposed to levels of risk that, in civilian operations, would be considered abnormal. Decisions to tolerate such risks in order to preserve or enable an essential military capability must always be made at appropriate levels of seniority. Whilst the target is always to reduce the risk to Broadly Acceptable levels or Tolerable and ALARP<sup>1</sup>, there are some capabilities that, due to the nature of Defence Capability, will not be able to be reduced any further. This guidance describes a formal process for referring high levels of Safety and Environmental risk from a Product, System or Service (PSS) to senior management and commands. In the case of the highest level risks, Ministers may need to be informed.

2. When developing military capability, the same diligence to risk should be implemented. Equipment on trials, whilst separate from military operations in terms of activity, must also be subject to suitable risk assessment and if needed, risk referral. Where such risks from trial activities occur, they should be referred using guidance from this leaflet.

3. This leaflet should be followed alongside other guidance and should only be used after risk management activities have been completed and it is deemed that any further reduction in risk would be grossly disproportionate in terms of time, effort and money to any perceived benefit in reduction of the risk. Such documents should include but not be limited to:

<sup>1</sup> SEP Leaflet 02/2011 ALARP in the Military Context

- a. Project Oriented Safety Management System (POSMS) SMP07 Risk and ALARP Evaluation and SMP08 Risk Reduction.
- b. Project Oriented Environmental Management (POEMS) EMP01 Environmental Management Plan, EMP04 Environmental Impact Screening and Scoping, and EMP06 Objectives and Targets.
- c. Defence Standard 00-056 Issue 7 (Safety Management Requirements for Defence Systems), noting that some of the requirements of this Def Stan relate to environmental management requirements such as hazardous and restricted materials.
- d. Defence Standard 00-51 Issue 2 Environmental Management Requirements for Defence Systems.
- e. JSP 892 Risk Management.
- f. DSA Regulatory Articles (both High Level and Domain Specific).

It also sits alongside the Operational Dispensation Processes used in each domain to authorise deviation from norms<sup>2</sup> e.g. standards and safety case requirements, which embody similar risk referral principles. The principles in this guidance are fully compatible with the DE&S corporate approach to general risk escalation.

## **BACKGROUND**

4. Military operations may justify a decision to tolerate high levels of risks in order to preserve or enable an essential capability, balancing the identified SEP risk with the counter-risk to people which the capability aims to mitigate. The risk referral process provides an auditable mechanism for formally raising the risk to appropriate levels of seniority

5. The process must record decisions at each stage of the referral process. These decisions may involve the release of funds or changes to operating procedures which mitigate the risk, referral of the risk to a higher-level authority or a decision to tolerate the risk due to exceptional circumstances. Authority to implement these measures will depend on several factors, one of which is the level of delegated SEP authority held. In the case of the most serious, Ministers may be asked to note those decisions taken at the highest level, because they are ultimately accountable for them.

6. Referral of such issues to successive levels in the Duty Holder chain will follow a judgement that further action to mitigate risk to a tolerable level is not reasonably practicable because the resulting loss of defence capability, e.g. by withdrawal of a PSS from service, delaying entry to service and reduction of operational performance, is grossly disproportionate to the benefit of removing or reducing the safety risk. The consequence of loss of defence capability in this context includes harm to people directly or indirectly protected by the capability.

7. This guidance is written for application by DE&S, which is required to manage risks inherent in the PSS it supplies. Where very high levels of SEP risks are identified which the DE&S project cannot mitigate, the process informs users and Capability teams of the risk. The FLC, as the Duty Holder responsible for controlling activities which potentially expose people and/or environmental receptors to the risk, and as the organisation with the duty to manage risks within their area of responsibility, then has the authority to change operations, training regimes etc. to manage the risk.

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<sup>2</sup> These processes authorise change, for which safety risk must be assessed; whereas the DE&S Risk Referral Guidelines are for risks which are found to be very high.

8. The risk referral methodology has been designed to be compatible with similar processes used by both FLCs and operating organisations and provides a means to respond when those processes have been initiated. These operationally-focused processes have primacy over this supporting DE&S process; however, it promotes the referral of risk up the DE&S and FLC Duty Holder<sup>3</sup> chains using consistent submissions by providing a standard format.

9. When risks arise in current operations, urgent decisions must be taken to determine whether the activity can continue. Other risks, such as those that would only arise in defined potential operations or those emerging early in the project acquisition phase, can be managed through decisions in planning rounds.

10. The following principles, in addition to the risk management process identified in para.2 should be followed:

- a. Principle 1 – The risk has not been accepted by the Operating Duty Holder. Where the risk (or residual risk) is not accepted by the Operating Duty Holder it must be referred to an appropriate level for acceptance (or stopping of activity/capability).
- b. Principle 2 – Higher Intervention is required. The risk is considered to be higher than that of the delegated authority and should be escalated higher.
- c. Principle 3 – DE&S personnel are considered to be at risk. Where DE&S personnel are considered to be directly at risk, staff are to ensure the risk is communicated to an appropriate level (noting this should be done in parallel with the reporting to SofS of any Risk to Life).
- d. Principle 4 – Reputational Harm. Where a risk of an accident or incident could result in harm to MoD or the wider UK, the risk should be referred to an appropriate level.
- e. Principle 5 – System of Systems Approach. Risks should be considered as early in the lifecycle as possible however, it is recognised that some risks cannot truly be judged until a sub-assembly/equipment is installed in the final platform. Delivery teams should make every effort to estimate the risk and ensure the overall PSS delivery team are made aware of the risks as early as possible.
- f. Principle 6 – The Risk has not met the gross disproportionality threshold. Any risk that whilst tolerable, has not met the target of further risk reduction costs being grossly disproportionate to the perceived benefit should also be referred for further scrutiny.

## **PROCESS**

11. Referred risks shall be assessed at progressively higher levels of authority and relevant stakeholders must be involved. As a minimum, the stakeholders in the PSS risks will be the Capability Sponsor (Senior Responsible Owner of the capability), DE&S (the manager of technical mitigation) and, most importantly, the Duty Holder(s) or their appropriate representative. The risk evaluation will provide options for further reducing risk and the level and tolerability of residual risk following mitigation.

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<sup>3</sup> In FLC where a Duty Holder is not appointed the term refers to an Accountable Person.

12. For PSS related risks, the referral process starts at the Project SEP Committee (PSC). The risk may be identified by any stakeholder<sup>4</sup>. The first level of screening within DE&S occurs when the PSC refers a risk through the Senior Safety Responsible (SSR) to the DE&S Operating Centre Director (OCD) who, if not able to provide sufficient risk reduction through technical or financial resources, will refer the issue to the Duty Holder to seek new funding to mitigate the risk.

13. The process to seek new funding will require key stakeholder involvement, in particular the Customer. The Planning Round process requires endorsement at every level up to Defence Board and decisions at each stage of the approval process are referred to the risk owner (FLC/User). If a solution is not funded the issue will be referred to the user 2\* representative.

14. The pace of decision making will be driven by operational urgency and the risks associated with continued operations must be balanced against the consequences of withdrawing the capability. This means for PSS employed in active operations, Chief of Defence Staff or the authorised Deployed Commander<sup>5</sup> will have primacy throughout with DE&S and Capability in support.

15. Risks may be reduced through the funding of technical solutions or by revising operations e.g. by withdrawing PSS from service, reducing operational limits such as speed or loading, providing improved information, training and supervision.

16. Organisations that can assist in the interpretation of Regulation and Policy include Operating Centre (OC) safety and environmental teams and the S&EP Team within QSEP which sponsors this publication.

## **APPLICATION**

17. The following section provides more detail on the risk referral process.

18. DE&S Delivery Teams (DTs) determine the levels of risk presented by the PSS which they manage through the application of formal risk identification and assessment. The essential requirement (for safety risk) is to manage the reduction of these risks to levels which are As Low As Reasonably Practicable (ALARP) and tolerable, and establish the levels of residual risk. An equivalent level of residual risk for environmental protection shall be met, ensuring that any significant environmental impacts are prevented or minimised. Appropriate mitigation measures must be considered and, where reasonably practicable, introduced to reduce the severity or likelihood of the hazardous event or impacts, thereby achieving a reduction in levels of overall risk. Whether mitigation is considered reasonable is a function of its cost (financial, effort, resources etc.) and the operational requirement. A full Cost Benefit Analysis should be considered where there is no clear gross disproportionality identified. A further factor which must be considered is the negative consequences for capability of implementing the mitigation. Operational changes or revisions to requirements can only be introduced after consultation with the FLC and the Capability Sponsor. When all reasonably practicable measures have been introduced, the resultant level of residual risk is determined. The decision to tolerate the residual risk must be taken by a Duty Holder with

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<sup>4</sup> For Land Systems the project team would normally be notified of a risk identified in current operations through the Operational Dispensation Process. For Air Systems the Operational Emergency Clearances systems are initiated where equipment will be operated outside of its declared safety target and Sea use the Operational Deficiency system which considers risks when operating outside the design envelope.

<sup>5</sup> See DSA01.2 Chapter 12

the appropriate level of competence and delegation, normally in the FLC or Operating Authority for In-Service PSS.

19. Within DE&S, the preferred method for assessing levels of safety risk is the risk matrix, which combines values of severity and likelihood to categorise risk in the range A to D, where Class A<sup>6</sup> risks are the highest.

20. Due to the differences in risk matrices between the domains, it is required to report the raw data of likelihood and severity as well as the original Risk Classification. This will allow a 'like for like' comparison of risks across the domains at the ExCo or other suitable risk discussion forum.

21. In the case of environmental protection risk and impact, the preferred method is the Environmental Impact Screening and Scoping (EISS) (POEMS EMP04, which describes environmental aspect and impact identification and prioritisation. This approach combines values of severity and frequency to categorise environmental impacts in the range of high, medium and low significance. The environmental aspect and impact priority is then determined by weighing significance with other criteria. This output can be used to identify significant impacts and will determine whether environmental impacts and risks are sufficiently significant to require referral.

22. All of the safety and environmental process described above are primarily intended to aid judgement by ranking risks; the individual risk classifications should not be seen as representing a precise measure of risk. In addition, the classification bands are broad and the boundaries conservatively placed. **Consequently, risk class alone should not be the sole parameter that determines whether risks are to be subject to risk referral action, and the principles can equally be applied to risks of a lower level which would not normally be considered tolerable (for instance, safety risks that are close to the Class A/B classification boundary). In such cases, the decision to refer should be clearly justified. This promotes a conservative approach to SEP risk management but does not prevent imaginative or rapid action. It enables risk management processes and associated risk acceptance guidelines used by the FLCs to be applied to the final decision.**

23. Assessing the tolerability of a risk which DE&S considers to be sufficiently high to justify referral must consider many factors, most of which are related to operational issues. For that reason, DE&S must refer the decision to the user FLC for its operational perspective. The level of risk presented by the use of the PSS is assessed by the user organisation, taking account of the DE&S risk analysis and its own knowledge and influence over the other Defence Lines of Development (DLoDs).

24. At the early stages of a project, DE&S hazard analysis and risk assessment activities and environmental impact screening and scoping are likely to identify a number of hazards<sup>9</sup> and environmental aspects which will be assessed as presenting a high level of risk until mitigation measures can be shown to be implemented. When the DT sees a reasonable prospect of reducing those risks, it will not need to refer them up the Duty Holder chain. As the project matures and mitigation measures are introduced, the level of risk will reduce. The majority of risks will be low, allowing acceptance at DT level. Where risk levels are higher than reasonably practicable<sup>7</sup> risk reduction measures cannot be identified; the risk must be

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<sup>6</sup> A risk which DE&S assesses as 'Intolerable' unless there are exceptional reasons for the activity to take place (POSMS SMP 06)

<sup>7</sup> Reasonably practicable here must take account of the counter-effect of mitigation on capability.

referred to senior levels for decision. Referrals should include a clear description of the hazard, the level of assessed risk and the options available for reducing that risk, including costings. Funding requirements will need to interface with the planning round through Capability.

25. At each stage of the referral process, the FLC or Operating Authority, supported by DE&S, must decide whether it can justify the continued use of the PSS in the circumstances giving rise to the very high risk. If not and the level of risk cannot be reduced, immediate withdrawal of the defined capability must be considered. Where decisions are taken to tolerate a risk, these must be formally recorded. Subsequent to acceptance, hazards which pose a high level of risk should be kept under close review until circumstances change and the level of risk is reduced.

26. OCs are to ensure a Risk reporting process is in place to escalate risk through the Duty Holding Construct that is recorded through all stages of the escalation to point of resolution.

27. The risk referral process is graphically presented at Annex A.

28. When a risk is subject to risk referral, it is to be reported using the information gathered through the OC process to the DE&S Safety, Health and Environmental Committee.

29. DE&S promote an open and just culture towards Safety and Environmental Protection and actively promote staff to be engaged in Safety and Environmental activities. Anyone who feels there is a credible risk to safety or the environment that is not being taken seriously should report issues to any level at any time with their concerns.

#### **RISK REFERRAL DETAIL**

30. Domains are to ensure a standard format of reporting is used across OCs and DTs that includes sufficient detail of the risk being escalated to be understood throughout the review process.

### Annex A - Risk Referral Flowchart

