Nuclear Baseline and the Management of Organisational Change

A Good Practice Guide

This Good Practice Guide was produced by the cross–industry Organisational Capability Working Group and published on behalf of the Nuclear Industry Safety Directors Forum.

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Contents

1 INTRODUCTION

Globally, many serious accidents and events stem from failures within organisations. In a significant number of cases, events have been caused or made more severe by inadequate consideration of the safety implications of the organisation's structure, allocation of roles, responsibilities and tasking and change management arrangements.

Defining the organisation's structure, staffing and controlling changes have clear business benefits. It can improve resource planning, training and organisation to ensure capabilities and skills within the business are used efficiently and effectively.

Prior to publication of Issue 1 of this Good Practice Guide (GPG) in October 2010 there had been a lack of guidance for the nuclear industry on good practice in these areas. The Safety Directors' Forum (SDF) commissioned this GPG to help organisations define, build, demonstrate and maintain nuclear safety capability and facilitate the sharing of good practice and a consistent industry approach.

Since publication of the first GPG the nuclear industry has evolved with sites moving into decommissioning and care and maintenance at the same time as new nuclear facilities are being developed. Some organisations are in the process of decreasing the nuclear hazards and risks on their sites while others are moving towards active commissioning of facilities. This GPG has been updated to reflect these changes and emphasises the importance of taking a proportionate approach, recognising the different risks that are being faced at sites.

The nuclear landscape has also changed, there has been a greater emphasis placed on environmental protection, conventional safety and security arrangements with new regulation being published. The arrangements used to ensure nuclear safety are now sometimes applied to environmental protection, conventional safety and security arrangements, so this GPG has been updated to outline how this can be achieved.

In the years since publication of Issue 1, individual licensees / Authorisees have faced a range of business challenges including size reduction, merging with other licensees, financial challenge, a national skills shortage and licensing of new build. Good control of baselines and management of organisational change has been fundamental to enabling smooth transitions around these challenges.

This version of the GPG has been produced by a working group set up under the auspices of the SDF and has sought to distil good practice from across a broad spectrum of the UK nuclear industry.

This GPG sets out a capability framework, covering core organisational capability and design issues. It describes how capability requirements for new and existing organisations can be defined and justified. It summarises how to manage capability through analysing, monitoring and mitigating shortfalls and vulnerabilities and managing organisational changes. It defines and includes examples of good practice.

The SDF has endorsed this GPG as an approach the industry are encouraged to implement. SDF recognises however, that a one–size fits all approach would not necessarily be appropriate across all of the disparate UK nuclear industry. Each site is unique, undertakes different activities and is facing different risks, its approach therefore needs to be tailored to its specific situation. Although alternative approaches may be adopted by some licensees, they should remain consistent with the principles in this GPG. The generation and implementation of this GPG is an opportunity to drive standard setting and establish consistent good practice.

Both the Office for Nuclear Regulation (ONR) and Defence Nuclear Safety Regulator (DNSR) have participated in the development of this guidance and it has been reviewed by the Environment Agency to ensure it is compatible with the relevant regulatory requirements and currently represents relevant good practice.

This document will remain under review as experience accumulates. Both the SDF and the working group welcome comments on how the GPG can be improved for potential future revisions. Please see Appendix E for further information on the OCWG members and leaders.

Document Issue	Comment
Issue 1, 2010	Original document focused on nuclear safety and capability.
Issue 2, 2014	Updated to incorporate experience gained by licensees and Authorisees from three years of deployment and guidance on compliance with the changes to the Nuclear Baseline and management of organisational change aspects of Licence / Authorisation Condition 36.
Issue 3, 2017	Updated to a Good Practice Guide rather than a Nuclear Industry Code of Practice, to reflect that the document provides guidance, not instructions that must be followed.
Issue 4, Jan 2024	Updated to an organisational baseline that covers environmental protection, conventional safety and security. Addition of licensee experience and recognition of changing status on nuclear sites.
Issue 4 Sept 24	Change back to a Nuclear Baseline and shows how the approach could be applied to environmental protection, conventional safety and security.
Issue 4 Jan 25	Changes made to incorporate OCWG member comments received.

1.1 Disclaimer

This Good Practice Guide (GPG) has been prepared on behalf of the Nuclear Industry Safety Directors' Forum by the Organisational Capability Working Group (OCWG). Statements and technical information contained in this GPG are believed to be accurate at the time of writing. However, it may not be accurate, complete, up to date or applicable to the circumstances of any particular case and this GPG does not constitute a standard, specification or regulation. The SDF shall not be liable for any direct, indirect, special, punitive or consequential damages or loss whether in statute, contract, negligence or otherwise, arising out of or in connection with the use of information within this Good Practice Guide.

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The editable MS Word original of this document is held by the OCWG Secretary.

1.2 Readers Guide

The document is divided into two main Chapters one on Nuclear Baselines and one on the Management of Organisational Change and a series of appendices. Each section is structured around a diagram outlining the key steps in developing a Nuclear Baseline or undertaking an organisational change. The GPG refers throughout to the regulatory requirements and provides examples of good practice implemented within the industry to meet those requirements.

A series of self–assessment prompt statements is included at the end of each section. These are based on the collective experience gained by the Working Group in the development and implementation of Nuclear Baselines and Management of Organisational Change arrangements. The prompts pick up key features from the section and are aimed at assisting an organisation to test the scope and completeness of their arrangements and documentation.

Throughout the document a series of statements are highlighted with a border round them. These Key Points represent hard won lessons gained by the Working Group. They should be carefully considered in the development of arrangements and documentation. They are aggregated in Appendix F.

Readers are not expected to read the document in one sitting, it is thought that they will refer to the relevant sections when they are developing or implementing their Nuclear Baselines and Management of Organisational Change arrangements.

2 EXECUTIVE SUMMARY

This Good Practice Guide (GPG) aims to help organisations define, build, demonstrate, and maintain organisational capability through the Nuclear Baseline and manage subsequent changes effectively through implementing robust Management of Organisational Changes. It provides a framework for ensuring that nuclear safety capabilities are robust and adaptable to changing conditions. The good practice outlined in this GPG could be applied to environmental protection, conventional safety and security baseline roles. The following paragraphs outline key points from within the GPG.

Governance

Senior management should integrate Nuclear Baseline and MOC governance into the overall company governance structure. Senior Management should be actively involved in the management and monitoring of the Nuclear Baseline, ensure organisational changes adhere to the MOC arrangements and oversee and monitor the implementation of significant organisational changes.

Nuclear Baseline

- **Definition**: The Nuclear Baseline should be a comprehensive record of the organisational structure, staffing, and competencies required to maintain and demonstrate nuclear safety. It should represent a fully capable organisation, not just the minimum required for safe operation and should be maintained as a live tool.
- **Core Capability**: Core nuclear safety capabilities should reside within the licensee organisation, including governance, design authority, intelligent customer functions, and internal regulation.
- **Service Providers**: There are various categories of service providers and roles in supporting nuclear safety and these should be considered within the Nuclear Baseline arrangements. Category 1 service providers should be on the Nuclear Baseline.
- **Organisational Design**: It is important to design organisational structures that support nuclear safety, including clear roles, responsibilities, and accountabilities. Staff on the Nuclear Baseline should be Suitably Qualified and Experienced Persons (SQEPs).
- **Vulnerability Analysis/Monitoring**: It is important to use the Nuclear Baseline as a live tool that enables the organisation to analyse and monitor vulnerabilities in its capability.

Management of Organisational Change (MOC)

- **MOC Process**: It is essential to have a structured process for managing organisational changes, including risk assessment, stakeholder engagement, implementation planning and execution, monitoring of implementation and close out and post implementation review.
- **Categorisation and Approval**: Changes should be categorised based on their potential impact on nuclear safety and the risks of making the changes. The change process applied should be proportionate to the potential risks with higher–risk changes requiring more rigorous scrutiny and approval.
- **Implementation and Review**: The implementation of changes should be monitored including reviewing their impact, tracking risks and KPIs, taking remedial action and capturing lessons learned to improve future changes and the MOC process itself.

Conclusion

By following this guidance, organisations can ensure they have the necessary structures, resources, and processes in place to maintain nuclear safety, adapt to changing conditions and manage organisational changes effectively and safely.

3 OVERVIEW

Purpose and Scope

1 The intention of this Good Practice Guide (GPG) is to help organisations define, build, demonstrate and maintain organisational capability through the Nuclear Baseline and to control subsequent changes to the organisation.

2 Nuclear capability within this GPG includes the skills and capacity to manage nuclear safety.

3 While it is essential to securing nuclear capability, the acquisition of skills and experience by individuals through, for example, a systematic approach to training is outside the scope of this GPG.

4 This GPG represents the industry's understanding of good practice which, if followed, should promote a consistent approach that satisfies regulatory requirements.

Terminology

5 Throughout this GPG the following terminology applies:

- Licensee refers to a licensee or Authorisee[1].
- Licence Conditions (LC) also refers to Authorisation Conditions (AC)[2].
- Environmental Permit Holder is the operator responsible for operating a regulated facility in accordance with environmental permit(s).

6 A complete set of definitions is provided in Appendix A.

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[1] Licensee is the licence holder on a civil sector site, Authorisee is the accountable post-holder identified on the Certificate of Nuclear Authorisation, duly Authorised by the head of the Defence Nuclear Safety Regulator.
[2] Authorisation Conditions are the non-prescriptive goal setting regulations set out by the Defence Nuclear Safety Regulator in DSA02-DNSR to ensure safety across the Defence Nuclear Enterprise where the Ministry of Defence has specific exemptions from statute.

3.1 Background

7 Organisational factors are a significant cause of industrial disasters and serious events, often as a result of inadequate safety culture, which may allow financial, operational and/or commercial pressures to take precedence over safety. One aspect is the erosion of organisational capability as confirmed by the following examples:

- Esso Longford – fatalities arising from a fire and explosion following the transfer of key expertise away from the plant without adequate consideration of potential consequences.
- Fukushima – The Nuclear Accident Independent Investigation Commission concluded 'the root causes were the organizational and regulatory systems that supported faulty rationales for decisions and actions'.
- Columbia disaster – the Columbia Accident Investigation Board concluded 'the safety organisation, due to lack and capability of resources….was not an effective voice for discussing technical issues or mission operations'.
- BP Texas City – the Baker Report concluded, among other shortcomings, 'BP has not always identified resources for strong process safety performance at its five US refineries.'[3]

8 Just as licensees and permit holders will normally make safety cases for the operation of nuclear plants and facilities, the Nuclear Baseline is a significant part of the 'safety case for the organisation'.

9 A nuclear licensee would not modify safety–related plant without prior risk assessment. Similarly, changes to nuclear capability (i.e. structures, human/financial resources, roles/responsibilities, skills) that design, construct, commission, operate and decommission plant need an equal level of consideration from the earliest optioneering stage. Ill–conceived or poorly implemented change can have a major impact on nuclear safety, security, environmental and business performance as illustrated by the examples given above.

10 Safety is a combination of many aspects of business, including plant and processes, management arrangements, quality and the capabilities of the organisation and people within it. Global experience shows the most effective and efficient organisations consider safety, organisational capability and business delivery when making changes to their operations.

11 Accountability for ensuring that human resources are adequate for nuclear safety rests with the Board of the organisation. Specific accountability for governance of this, and for the Nuclear Baseline, should be clear and should rest within the most senior management of the organisation. The process of developing and maintaining the Nuclear Baseline should be facilitated by a suitably qualified and experienced person(s). Line management should be accountable for the accuracy and currency of information within it. These arrangements need to be captured within the business management system.

3.2 Regulatory Requirements

12 Normal business practice should inherently deliver compliance with Licence Conditions (LCs) so demonstration remains only a formality. Add–on or back–fitted compliance arrangements encourage a poor safety culture aimed at the appearance rather than spirit of compliance, which leads to a build–up of latent threats.

13 The Office for Nuclear Regulation (ONR) sets out their requirements for organisations to have, maintain and manage changes to the nuclear capability required to deliver nuclear safety:

- ONR Licence Condition 36[4] – Organisational Capability: The licensee shall provide and maintain adequate financial and human resources to ensure the safe operation of the licensed site.

3 Further examples of how organisational capability has affected performance can be found in: SDF, *Good Practice Guide on Organisational Capability and Resilience*, 2018.
4 ONR, *Licence Condition Handbook*, 2017.

14 The ONR also sets out how its inspectors should evaluate the capability of an organisation and how changes to it are controlled in the following documents:

- NS–TAST–GD–065 Function and Content of the Nuclear Baseline
- NS–TAST–GD–048 Organisational Change
- NS–TAST–GD–049 Licensee Core Safety and Intelligent Customer Capabilities
- NS–TAST–GD–061 Staffing Levels and Task Organisation
- NS–TAST–GD–072 Function and Content of a Safety Management Prospectus
- NS–INSP–GD–036 LC36 Organisational Capability

15 This GPG has been developed to provide practical advice about how licensees can meet these regulations and refers to specific requirements throughout the guidance.

16 The Health and Safety Executive (HSE) and Environment Agency have joint guidance on the creation of an Integrated Management System[5]. The regulators expect licensable and permissible organisations to have in place robust management arrangements to ensure the proper management of the hazards and risks associated with the nature of the work undertaken on the site. The regulators expect the management system to cover organisational structure, capability and management of organisational change:

- Health and Safety Executive and Environment Agency, *Guidance Note Radioactive Substance Regulation: Guidance on the Production and Use of An Integrated Management Prospectus*.

17 The integration of management arrangements is also a requirement of the International Atomic Energy Agency (IAEA) General Safety Requirements[6]:

- IAEA, *Leadership and Management for Safety*, General Safety Requirements No. GSR Part 2, 2016.

18 Since publication of version 1 of this GPG there has been a greater emphasis placed on environmental protection, conventional safety and security arrangements with new regulation being published.

19 All nuclear operators in England, Wales and Scotland have permits issued to them by their national environmental regulator. These permits contain conditions that require the use of "sufficient competent persons and resources" and "adequate…human resources" and require operators to inform their environment agency about significant organisational changes. The Environment Agency has published management arrangements and Generic Developed Principles for nuclear sites. The requirements relating to organisational capability are very similar to those set out in ONR's documentation but focus on environmental capability.

20 The *Radioactive Substances Regulations: Management Arrangements for Nuclear Sites*, v2 2010 states:

> *An organisation's management arrangements should enable it to develop and maintain the resources and competences needed for sound environmental management.*

21 The regulations set out the Environment Agency's expectations and what inspectors should consider when assessing permit holders. The ones relevant to Suitably Qualified and Experienced Persons (SQEPs) are set out in the Table 1. It also sets out how the Agency expects environmental capability to be identified, see below.

[5] Health and Safety Executive and Environment Agency, *Guidance Note Radioactive Substance Regulation: Guidance on the Production and Use of An Integrated Management Prospectus*.
[6] IAEA, *Leadership and Management for Safety*, General Safety Requirements No. GSR Part 2, 2016.

Table 1: Environment Agency Expectations and Considerations on SQEPs

Expectations	Considerations
There should be a process for identifying and appointing SQEPs	Condition 1.1.4 Does the management system contain a means of appointing suitably qualified and experienced people to adequately supervise the disposal of radioactive wastes? Are their names clearly displayed with each copy of the EPR permit.
	Are other SQEPs identified within the management system? These would be identified by the processes suggested in 'Capability'. There is no requirement to post these names as above, but it would be sensible to have a system which identifies all SQEP posts / people. Is such a system in place?
	Do Human Resource systems include environmental responsibilities in job descriptions competence frameworks, training plans, awareness programmes etc?

The assessment of environmental capability requirements should have sufficient breadth and depth. It should identify operational and supervisory roles for work that could have an impact on environmental safety, either immediately or in the longer term. By this we mean that organisations should consider roles that involve:

- *Managing environmental risks. This includes, but is not limited to, work regulated by environmental permits.*
- *Carrying out and supervising routine activities which may have an effect on environmental safety.*
- *Environmental management following emergency situations.*
- *The management, control and supervision of people and processes involved in maintaining environmental safety standards.*
- *Being an Intelligent Customer for the products and services they use. The competence required needs to reflect the nature of the services and type of work being done.*
- *Assessing environmental safety and advising on modern environmental standards, including where these roles are found within specialist teams, such as technical authorities.*

The Environment Agency has also published:

- *Guidance: Management and Leadership for the Environment: Generic Developed Principles*, 2024.
- *Legal Operator and Competence Requirements: Environmental Permits*, 2019.

22 The relevant security regulations and guidance are shown below:

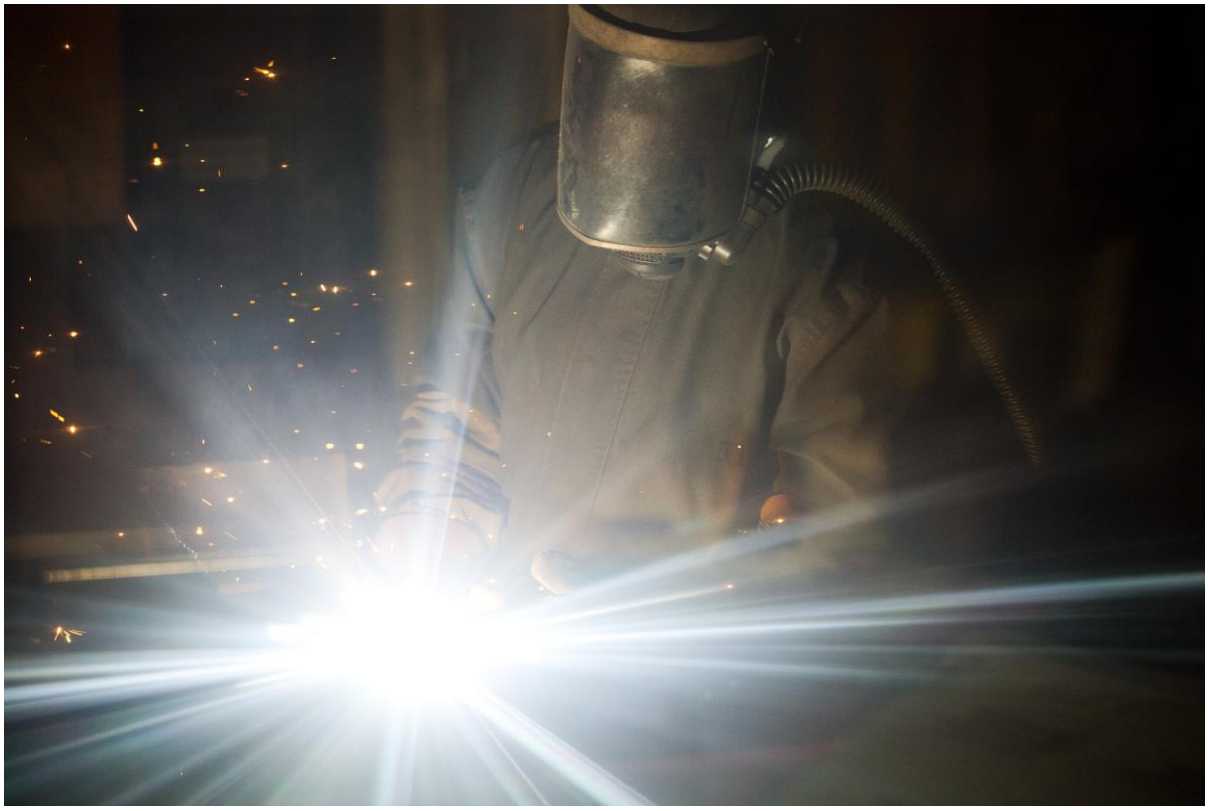
- ONR Security Assessment Principle[7] (SyAP) 1.2 Capable Organisation – The organisation should have the capability to implement and maintain the security of its undertakings.
- CNS–TAST–GD–11.4.6 Managing Changes to Security Standards, Procedures and Arrangements.
- CNS–TAST–GD–1.2 Organisational Security Capability.
- CNS–TAST–GD–4.1 Procurement and Intelligent Customer Capability.

[7] ONR, *Security Assessment Principles for the Civil Nuclear Industry*, 2022.

23 Ministry of Defence requirements relevant to this GPG include:

- DSA02-DNSR Defence Nuclear Safety Regulations of the Defence Nuclear Enterprise.
- DSA03-DNSR Defence Nuclear Safety Regulations of the Defence Nuclear Enterprise - Guidance
- DSyAP2 Nuclear Security Baseline.
- JSP 471 Defence Nuclear Accident Response.
- JSP 628 Security Regulation of the Defence Nuclear Enterprise.

24 The arrangements used to ensure nuclear safety capability is available are now sometimes applied to environmental protection, conventional safety and security capability, so this GPG provides guidance on how the arrangements used to control nuclear capability could be applied to these areas.



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4 CHAPTER 1: NUCLEAR BASELINES

4.1 Introduction

25 This chapter gives guidance on constructing a Nuclear Baseline to meet the requirements associated with Licence Condition 36. With the greater emphasis on conventional safety, security and environmental protection several organisations have developed their Nuclear Baseline into an Organisational Baseline that captures the roles required for nuclear and conventional safety, security and environmental protection arrangements, with the ability to isolate the respective roles if necessary. Other organisations maintain separate Baselines for each area, the next section considers the pros and cons of having an Organisational Baseline.

26 The guidance provided in this chapter can be applied to the roles required for conventional safety, security and environmental protection, but this GPG focuses on the Nuclear Baseline.

27 The Nuclear Baseline together with the Safety Management Prospectus (SMP, if produced, see paragraph 64) may be considered as the safety case for the organisation. It should be owned and used by directors and managers at all levels to support safe, effective decision making and help them understand the health of the organisation along with the risks and opportunities this presents. The intended outcome is a tool that provides a clear statement of the required capability and human resources necessary for the efficient and timely execution of nuclear safety against which an assessment can be made, and issues highlighted, as to current adequacy.

28 The Nuclear Baseline should be capable of interrogation to support decision making at all levels. At the local level, it should allow individual managers to identify and address vulnerabilities within their sphere of responsibility. At the strategic level it should provide information about the gross nuclear capability vulnerabilities requiring action. The identification of vulnerabilities associated with the Nuclear Baseline is described in paragraphs 135 – 153.

29 The Nuclear Baseline should show or signpost to other information that shows how the organisation and range of capabilities described are designed to manage the nuclear activities and hazards of the organisation's work and facilities safely.

30 Ideally the Nuclear Baseline should be maintained as a living management tool integrated with the minimum of bureaucracy into the normal staff resourcing processes and the management system. However, this depends on the systems used to develop and manage the Nuclear Baseline. This is best achieved where the Nuclear Baseline is a useful aid for normal business planning, not merely for the purpose of meeting licence conditions.

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4.2 Nuclear Baseline or Organisational Baseline

31 Many of the accidents/events referenced in this guidance, whilst identifying organisational failures, do not have a nuclear aspect to them albeit the actual and potential outcomes may have been significant and catastrophic. Thus, there are clear benefits of considering adoption of an Organisational Baseline approach that looks at roles associated with nuclear and conventional safety, security and environmental protection. However, there are other aspects that must be considered as part of making an informed decision.

Organisational Baseline Strengths

32 In some organisations different arrangements are in place to manage nuclear and conventional safety, security and environmental protection roles. Having an Organisational Baseline can foster a holistic and consistent approach to nuclear and conventional safety, security and environmental protection roles.

33 It could simplify the procedures in place within an organisation by having one set of consistent arrangements in place for managing nuclear and conventional safety, security and environmental protection roles, this could add clarity and aid compliance.

34 It could help organisations to fulfil the regulatory obligations from the different regulators.

35 It could help organisations to identify and/or understand the key roles required to manage nuclear and conventional safety, security and environmental protection and to ensure this capability is protected and vulnerabilities are managed.

36 It could help to ensure that the staff fulfilling roles that could impact the nuclear and conventional safety, security and environmental performance of an organisation are qualified and competent to do so.

37 It could help to ensure that the impact of organisational changes on nuclear and conventional safety, security and environmental protection roles are carefully considered and the associated risks are adequately mitigated.

Organisational Baseline Weaknesses

38 Having an Organisational Baseline could mean there are an increased number of roles that have to be managed, especially if conventional safety is included. This has the potential to significantly increase the scope of the Baseline(s) and could dilute focus away from key nuclear safety roles.

39 Additional manpower resource and effort may be required to manage an Organisational Baseline, manage changes to it and ensure that staff fulfilling baseline roles are Suitably Qualified and Experienced Persons (SQEP).

Organisational Baseline Opportunities

40 Having an Organisational Baseline could provide an opportunity to apply the good practice and behaviours, embedded in established nuclear safety management and control, to other areas.

41 It could provide a potential efficiency, i.e. ability to amalgamate disparate arrangements to either reduce or eliminate potential overlaps (economies of scale, ‘piggy backing’) and close any identified gaps in safety, security and environmental management arrangements.

42 It may help reduce any confusion as to which organisational changes should be subject to formal Management of Organisational Change (MOC).

43 It may help to demonstrate a positive safety, security and environmental protection culture and increase the focus on each of these aspects.

Organisational Baseline Threats

44 Having an Organisational Baseline could potentially dilute the focus on nuclear safety and key messages unless handled proportionately.

45 If inappropriately implemented it could remove emphasis from key roles in each of the disciplines.

46 It could create a lack of clarity regarding the legal, regulatory and mandatory requirement for Baselines and those that the Licensee/Authorisee organisations adopt by choice / good practice.

47 The potential impacts on established processes and arrangements may be under–estimated and potentially wide–reaching (e.g. [formal] appointments, training and competency assessment, Management of Change (MOC) arrangements, internal assurance, reporting and governance arrangements, Intelligent Customer arrangements, project management arrangements, etc). Although some organisations already have these in place for conventional safety, security and environmental protection roles.

48 It could impact contractual arrangements (e.g. where Contractors may maintain their own Baselines that are either linked to or subject to Licensee/Authorisee scrutiny, etc.) which may not support expansion to different areas which could lead to additional cost, conflict/disagreement and/or gaps.

49 There is the potential to confuse should a term be applied generically to more than one specialism, e.g. responsible person, duty holder, etc.

Other considerations

50 Each Site is unique, undertakes different activities and is facing different risks, its approach therefore needs to be tailored to its specific situation. For example, if the focus of the organisation is on obtaining an environmental permit then environmental roles may be of particular importance, whereas if the nuclear and environmental hazards have been removed conventional safety may require more attention. Each Licensee/Authorisee may also possess different risk appetites which may influence their decision to potentially adopt an Organisational Baseline approach or not.

51 The relative maturity, size and complexity of the organisations (i.e. established versus new Licence holders, operating model, etc.) could also be a factor in any choice as to which type(s) of Baselines should or could be maintained. ‘Back–fitting’ within extant arrangements is generally more challenging than starting posts/ratch.

52 Equally, if an organisation (established or otherwise) is experiencing difficulties or challenges with their existing Nuclear Baseline arrangements, i.e. due to culture, engagement, significant organisational change, etc. then it may not be an appropriate time to consider potential scope expansion. If the choice is taken to extend the scope then it may be best to apply a measured, phased approach to implementation.

53 Practical considerations of maintaining an Organisational Baseline, or a collection of separate Baselines per specialism, are also fundamental. A consideration as to whether these can be facilitated by established mechanisms or platforms such as databases, Enterprise Resource Management Systems (ERMS), spreadsheets, documents, etc. or not, needs to be made or will something new be required. The ability to isolate the data for each specialism is an important requirement so that key nuclear safety messages and vulnerabilities are not obscured.

54 ONR acknowledges that some organisations may wish to extend the concept of the Nuclear Baseline by including roles which are beyond the scope of nuclear safety, including conventional safety, security and environmental. Where a licensee chooses to do this ONR expects that:

> *Non–nuclear roles can be filtered out from the Nuclear Baseline data so that the status of nuclear safety organisational capabilities can be readily analysed and vulnerabilities understood[8].*

[8] ONR, *Function and Content of the Nuclear Baseline*, NS-TAST-GD-065, 2025.

55 The education and training of staff on baseline and MOC theory, principles and practices, where there is a low appreciation of the extant nuclear safety requirement, is a further consideration. It could affect morale and/or cause unease if roles are not included on the Organisational Baseline that some staff think should be. This could result in staff feeling devalued.

56 Ultimately it is up to individual organisations to decide on the most appropriate approach for their situation and be able to justify that approach to their regulators. Some organisations include posts/roles on multiple baselines when the role has multiple impacts. Some organisations rate their organisational baseline roles to indicate whether the role is a singleton, highly / scarcely populated etc. If roles sit within multiple baselines they are categorised based on the highest risk nuclear/environmental etc. aspect of the role and appear on that baseline. If the risks change (and therefore the relative rating of the roles) the role can be moved into a different baseline.

4.3 What is a Nuclear Baseline?

57 The Nuclear Baseline can be a document, a database, a system or a combination of them all. The arrangements should be proportionate to the size of the organisation, the nuclear hazards it is dealing with and the complexity of its situation. The Nuclear Baseline should enable an organisation to monitor, manage and control its nuclear capability and its vulnerabilities and demonstrate that it has suitable and sufficient organisational structures, staffing and competences in place to effectively and reliably carry out those activities which could impact on nuclear safety. The Nuclear Baseline should provide a clear description of the current intended staffing levels as a reference point or 'baseline' against which the licensee can assess the potential impact upon nuclear safety of proposed organisational changes.

58 The Nuclear Baseline should set out or provide a route map to:

- The philosophy and methodology for how it is constructed and how assessments regarding the need for nuclear safety roles, and the adequacy of their delivery, are carried out.
- The health of the nuclear capability of the organisation.
- How the organisation is structured in diagrammatic form.
- How nuclear safety is governed and the nuclear safety governance roles required.
- How responsibility, authority and communication flow through the organisation including, where appropriate, through matrix and project organisations.
- To whom the responsibilities of the nuclear site licence, and other key nuclear safety requirements including legal issues such as the Ionising Radiation Regulations, are allocated.
- What human resources it requires in terms of numbers, capabilities and competencies to deliver nuclear safety and the parts of the organisation that support it (underpinning activities).
- How it is demonstrated that these resources and nuclear capabilities are adequate.
- How it is demonstrated that the resources are suitably competent to carry out their roles.
- How the baseline is kept up to date and periodically reviewed and how it links to the management of change arrangements.
- How the baseline is integrated into the wider management system.

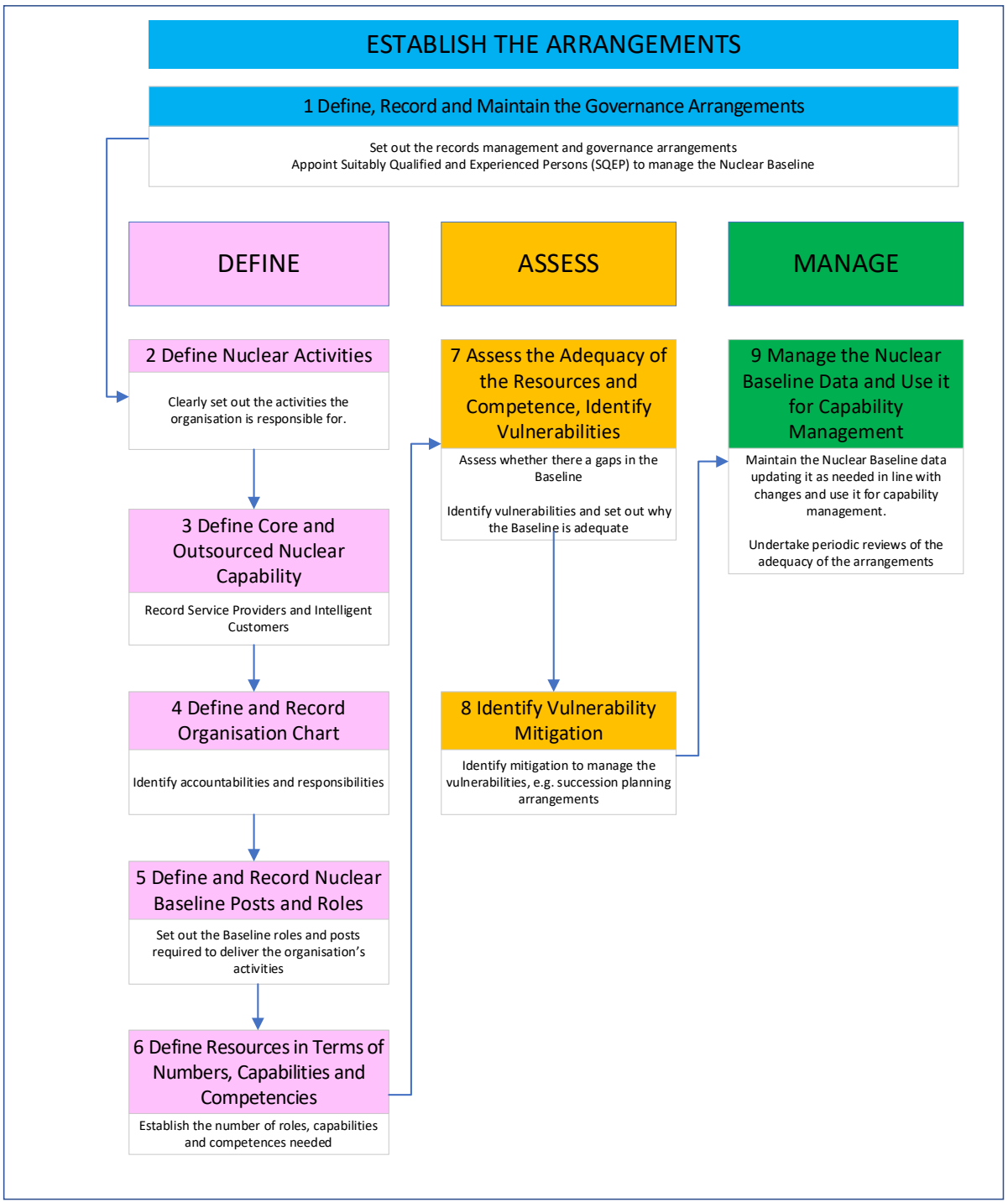
59 ONR[9] expects the functions to be performed by individual departments (and by individuals in those departments, as appropriate) to be clearly set out, leaving no scope for improvisation in normal conditions.

[9] ONR, *Function and Content of the Nuclear Baseline*, NS-TAST-GD-065, 2025.

60 It is good practice to have in place a process to plan the medium and long–term Nuclear Baseline staffing requirements taking into consideration the next phases in the licensed facility's life cycle, known changes in legislation and/or planned changes in the type or scale of work that the organisation is responsible for. forward planning of medium and long term baseline resource is particularly important for new build organisations which are likely to experience periods of rapid growth in an environment where skilled resources are often scarce.

61 Figure 1 outlines the four main phases in developing and managing a Nuclear Baseline: Establish the Arrangements, Define, Assess and Manage. The following sections consider the steps involved in each of those phases.

Figure 1: Nuclear Baseline Process



4.4 Establish the Arrangements

4.4.1 Define, Record and Maintain the Governance Arrangements (1)

62 The ONR Licence Condition 36 Organisational Capability states that '*The licensee shall provide and maintain adequate financial and human resources to ensure the safe operation of the licensed site*' and further states '*The licensee shall make and implement adequate arrangements to control any change to its organisational structure or resources which may affect safety'*.

63 Nuclear safety governance refers to the processes and structures used to direct, manage, supervise, account for, and assure the effectiveness with which an organisation delivers nuclear safety. The approach to governance should be embedded in the way the organisation works and in the leadership and management approaches taken to make it happen. This starts with the Board of Directors who set the organisation's strategic direction, policies, objectives, and oversees compliance and achievement. There should be a clear line of sight, and clear lines of control, traceable from the Board down to frontline safety performance.

64 It is good practice for organisations to produce a Safety Management Prospectus [SMP] (some create a Safety and Environmental Management Prospectus [SEMP]) that sets out expectations regarding leadership and safety culture and describes how directors and managers will demonstrate the appropriate behaviours. The SMP sets out a high–level description of business activities, organisation and resource strategy, together with a summary of management arrangements in place to ensure safety. If a SMP is produced, it should be maintained as a live part of the management system.

65 Organisations should have arrangements to provide meaningful challenges to safety–related decisions and activities. This should include arrangements for challenge and oversight of the licensee Board, as well as oversight of the licensee's activities by the Board. The appointment of non–executive directors provides an independent source of experience and challenge as well as committees such as the Nuclear Safety Committee that often includes independent members and provides challenge to nuclear safety issues and related decisions.

66 Governance is the command and control of safe and secure nuclear operations to defined standards which meet legal and regulatory requirements. Nuclear operations in this context include maintenance, examination, inspection and testing, and the treatment, processing, keeping, storing, accumulating or carriage of any radioactive material or radioactive waste.

67 A Nuclear Baseline, is a requirement for any organisation applying for a nuclear site licence[10] or a Certificate of Nuclear Authorisation[11].

68 The nuclear capability of the organisation and any changes to the structure or amount of capability should be a key consideration of senior management through organisational reviews and governance. The processes for developing and managing the Nuclear Baseline should describe arrangements for the governance and oversight of it. This should include:

- Consideration of vulnerabilities in the Nuclear Baseline.
- Corrective actions to address these in a timely manner.
- Contingency plans to deal with vulnerabilities.
- Looking at the output of self–assessment and assurance.

[10] ONR, *Licensing Nuclear Installations*, 2021.
11 Defence Safety Authority*, DSA02-DNSR Defence Nuclear Safety Regulations of the Defence Nuclear Enterprise,* 2024.

69 The arrangements for the Nuclear Baseline and Management of Organisational Change Processes should be clear and documented. The arrangements should demonstrate there is effective governance, challenge and senior management ownership of the processes. The arrangements should be subject to review by the organisation's internal challenge function. This review should test whether the Nuclear Baseline is readily retrievable and easily interrogated for information useful for the management of nuclear safety and used in practice within the organisation. This must be the case, even if the organisation has an Organisational Baseline; it must still be possible to filter out and interrogate the roles associated with nuclear safety.

70 The Management of Organisational Change process should describe arrangements for the governance and oversight of changes proposed. This should ensure that there is independent (of the change) challenge, as well as proportionate scrutiny based on the risks introduced from the change or the process of change. The organisation's Board/Executive should be involved in assessing the implications of changes which may have a greater potential impact on nuclear safety as part of the licensee's governance arrangements. The governance arrangements should include an oversight process to monitor the effectiveness of the implementation of changes and provide strategic guidance and support for more significant changes and the organisation's Board/Executive should regularly seek assurance that implementation of more significant and complex changes are proceeding satisfactorily.

71 It is good practice for the governance arrangements to:

- Review the implementation of changes and their effectiveness.
- Maintain an overview for consistency, cumulative effects, latent organisational conditions, cultural changes and 'salami–slicing[12]'.
- Consider future developments and their potential impact upon the organisation.
- Look at the output of self–assessment and assurance.

72 This process is greatly assisted by integration of nuclear capability governance into the overall company governance structure, and hands–on engagement of at least some of the senior management.

73 The governance arrangements should ensure that the guidance of this GPG is proportionately followed, with key aspects subject to independent review and assessment. This may be through specific structures or through existing arrangements and should include some level of engagement with the Nuclear Safety Committee established pursuant to LC13.

Key point – Governance of nuclear capability and the Nuclear Baseline should be a key consideration of senior management and should be integrated into the overall company governance structure.

Key point – The Board verifies the adequacy of the organisational capability, monitors nuclear vulnerabilities and the adequacy of mitigations.

[12] Salami slicing refers to dividing a large change into a series of smaller changes, which can mask the scale of the impact of the change.

4.4.2 Appoint Suitably Qualified and Experience Persons to Manage the Nuclear Baseline (1)

74 Suitably Qualified and Experience Persons (SQEP) need to be trained and appointed to manage the Nuclear Baseline and the processes and/or procedures that manage it. There should be acknowledged Baseline process owners whose defined responsibilities should include:

- Ensuring effective processes exist and are applied.
- Reporting on adherence to the process and performance against its requirements and communicating to staff about the process and their role within it.
- Acting upon the information provided by assurance activities, performance indicators, periodic reviews and other operational feedback to improve the process.
- Ensuring interfaces between the Nuclear Baseline and other processes (internal and external) are correctly identified and referenced.
- Ensuring appropriate training is provided to staff about the process and acting as a focal point for all relevant queries and issues from both a technical and compliance perspective.
- Ensuring relevant processes are part of the organisation's management system and any modifications to the processes are correctly documented and records maintained of any change.
- Reviewing whether the activities required by the process have been properly resourced and conducted by SQEPs.
- Ensuring there is a clear escalation route for any concerns associated with the process and/or its execution.

75 Coordination of these responsibilities should include:

- Maintaining the Nuclear Baseline.
- Ensuring agreed organisational changes are reflected the Nuclear Baseline in a timely manner.
- Conducting the vulnerability analysis of the Nuclear Baseline and reporting the findings to the relevant Boards and Committees.
- Monitoring that actions associated with managing vulnerabilities are completed and where possible vulnerabilities are mitigated or addressed.

76 Similar arrangements should also be put in place for the Management of Organisational Change process, see Section 5.2.1.

4.4.3 Self Assessment

77 Gather and review evidence to demonstrate:

- That there is appropriate ownership, governance and oversight of the Nuclear Baseline and management of organisational changes.
- There is evidence of proactive engagement and support at the Board and/or Executive level.
- There are clear, up to date and accessible documented arrangements for the Nuclear Baseline that are an integral part of the management system and consistent with accepted good practice including this GPG.
- There is a Management of Organisational Change process that links to the requirement for updating the Nuclear Baseline when agreed changes occur and the Nuclear Baseline process is reviewed and updated on a regular basis.
- The Nuclear Baseline arrangements apply to all aspects of the licensee's activities, including those of the Board or Executive team, that have the potential to affect nuclear safety.
- The Nuclear Baseline process has clear ownership and management, that records are maintained and there are clear governance arrangements in place.

- The roles and responsibilities for implementing the Nuclear Baseline process are clearly defined and those involved in the Nuclear Baseline process have an appropriate level of authority and are trained and assessed as being SQEP.
- That Senior Management (including Board and/or Executive) take responsibility for the Nuclear Baseline and receive periodic updates on the vulnerabilities associated with the Nuclear Baseline and the implementation of the arrangements.
- The Board and/or Executive are involved in monitoring the vulnerabilities associated with the Nuclear Baseline and the actions to manage those vulnerabilities.
- The Board/Executive actively use the Nuclear Baseline arrangements and support the Nuclear Baseline process by communicating to the workforce the importance of having and maintaining the Nuclear Baseline and having SQEP staff.
- The Nuclear Baseline process is being adhered to.
- The Nuclear Baseline is maintained as a live document and updated regularly to reflect any Management of Organisational Changes.
- Periodic reviews consider the effectiveness of the Nuclear Baseline arrangements and the changes that have been implemented.
- The Nuclear Baseline and its associated process is subject to the licensee's independent review and audit arrangements.

4.5 Define

4.5.1 Define Nuclear Activities (2)

78 Licensees in the UK Nuclear Industry cover a broad range of activities ranging from design and construction, through operation and maintenance, to decommissioning, waste management and disposal. They use different operating models and management and commercial arrangements.

79 Each licensee should clearly understand the nuclear capability required to deliver business safely and effectively. This nuclear capability should be documented as part of the management system.

80 The first step in demonstrating a licensee has adequate nuclear capability is to understand clearly the activities being undertaken. Once this has been completed the licensee can identify the organisation, roles and numbers of personnel required to deliver the activities – the Nuclear Baseline.

81 Historically all the capability required to maintain the nuclear safety of a nuclear site would have worked on or near to the site. However, changes in the management of nuclear sites, the bringing together of historic nuclear organisations and the increase in home and remote working means that the nuclear capability may be located both on and off site. All the activities needed to deliver nuclear safety, irrespective of where they are conducted, should be included in the Nuclear Baseline.

82 Over time organisational programmes change which may result in a change in the activities the organisation is responsible for and the capability it needs. It is good practice to review the adequacy of the current Nuclear Baseline and put in place forward planning to deal with evolving capability needs.

4.5.2 Define Core and Outsourced Nuclear Capability (3)

83 A licensee is required to remain in control of the nuclear safety of its activities. This is achieved through its core capability. Core capability is a subset of the Nuclear Baseline and should reside within the licensee organisation. Those fulfilling core capability roles do not need to be directly employment by the licensee organisation the roles can be fulfilled by embedded contractors. (The approach to service providers and their presence in the Nuclear Baseline is discussed in paragraphs 89 – 101)

84 For the purpose of this GPG, the definition of core nuclear safety capability is taken from the NS–TAST–GD–065:

> *the knowledge, experience and resources that the licensee should maintain within its own organisation in order to be able to ensure enduring control and oversight of nuclear safety at all times.*[13]

85 This is exercised through:

- Governance – the command and control of safe operations to defined standards which meet legal and regulatory requirements.
- Design Authority (DA) – the understanding and maintenance of the design intent and its safe operating envelope.
- Intelligent Customer (IC) – an organisation (or individual) that has the competence to specify the scope and standard of a required product or service and subsequently assess whether the supplied product or service meets the specified requirements[14].
- Internal regulation – a healthy, independent challenge and audit function.
- A strong safety culture as described in INSAG–15, including:
    - commitment;
    - compliance with procedures;
    - conservative decision making;
    - open reporting culture;
    - challenging unsafe acts;
    - being a learning organisation.
- Operating and maintaining nuclear plant safely to defined standards.
- Understanding technical issues, e.g. understanding hazards, safety cases, design and maintenance, human factors, and reliability.
- Strong leadership (in the context of this GPG, this will include ownership of the Nuclear Baseline, control and management of organisational change).
- Effective control and supervision.
- An ability to understand and respond to legal requirements.

86 ONR[15] defines safety culture as:

> *The underlying assumptions, which underpin the value placed upon safety by every individual and group at every level of the organisation, which interacts with the organisation's structures and management systems, resulting in behavioural norms that consistently emphasise safety over competing goals.*

87 The licensee's 'Intelligent Customer' (IC) and 'Design Authority' (DA) functions should form part of the core nuclear safety capability. The Nuclear Baseline and supporting documentation should demonstrate that there are enough licensee employees in the licensee organisation to retain the IC and DA capability at the right level without degradation.

Key Point **–** The licensee should understand its core nuclear safety capability and maintain it within its own organisation.

[13] ONR, *Function and Content of the Nuclear Baseline*, NS-TAST-GD-065, 2025.
[14] IAEA, *Nuclear Energy Series-No NG-T-3.10-Workforce Planning for New Nuclear Power Programmes,* 2011.
[15] ONR, *Safety Culture: Definition and Model*, 2024

88 This GPG should be used in conjunction with the GPG – Organisational Capability and Resilience September 2018[16] that describes the drivers for and the importance of actively managing organisational capability. The document provides a framework that can be used to form a broad view of an organisation's capability with respect to nuclear safety (and conventional safety, security and environmental protection) and how to identify areas for improvement. Its purpose is to help licensees to understand what a capable organisation looks like and how it can be maintained.

Service Providers

89 Most licensees use service providers, which include contractors, agency–supplied workers and support from other organisations including parent and partner organisations, to conduct or support their activities. The ONR expects the functions to be performed by external organisations or consultants to be described in the Nuclear Baseline, together with the related lines of communication and authority.

90 The involvement of service providers can be described in three levels as outlined below.

91 **Category 1** service providers undertake an enduring Nuclear Baseline role continuously needed for safe operation. They effectively operate as workforce substitutes for the licensee (embedded contractors) and are in practice part of the licensee's organisation. Therefore, the resource has to be covered by the Nuclear Baseline scope and subject to the associated controls and the Nuclear Baseline should clearly show which roles are being fulfilled by contractors.

92 This might include contractors employed for specific projects over significant periods where they might have an impact on nuclear safety (for example, supporting the design and safety case work for a new facility). These resources may be included in either the licensee's Nuclear Baseline or in a separate Nuclear Baseline that follows the requirements of this GPG and is open to inspection and audit by the licensee.

93 ONR states that[17]:

> *Contract staff should appear as part of the Nuclear Baseline resource when they are embedded within the licensee's organisation or meet the criteria for holding IC roles on behalf of the licensee.*

94 **Category 2** service providers undertake specific tasks under contract that are not needed continuously including the provision of short–term resources. Examples may include crane maintenance or the use of contract safety case authors to cover abnormally high workloads. Such roles will not be appropriate for inclusion in the Nuclear Baseline, but the licensee should be an intelligent customer for this.

95 **Category 3** service providers perform a function over which the organisation has no direct control, such as security forces where these are determined by security plans, emergency services, local authorities and regulators, and are not appropriate for inclusion in the Nuclear Baseline.

96 In order to fulfil nuclear safety obligations, all Category 1 and 2 service providers should be subject to formal arrangements that clearly identify the nature of the work, requirements that should be followed and precautions that should be taken.

97 The licensee organisation should also have defined Intelligent Customer (IC), and control and supervision roles, shown in the Nuclear Baseline, to manage nuclear safety related work carried out by all Category 1 and 2 service providers. The licensee should be able to demonstrate that the range of IC roles is suitable and sufficient to cover the breadth of the contractors' activities.

98 This requirement includes gaining assurance that the service provider organisation has, and continues to have, adequate suitably qualified and experienced personnel (SQEP) and quality assured processes to work safely. Necessary Intelligent Customer interfaces should also be established and maintained.

[16] SDF, *Good Practice Guide on Organisational Capability and Resilience*, 2018.
[17] ONR, *NS-TAST-GD-065 - Function and Content of the Nuclear Baseline*, 2025.

99 An organisation needs to keep the ratio of employees compared to resources provided by service providers under review to ensure the licensee retains core capability, remains able to understand its safety cases and is able to both manage and deliver nuclear safety. Nuclear Baseline and supporting documentation should demonstrate that there are enough direct employees of the Licensee to retain the nuclear safety governance, DA and IC capability at the right level. Consideration should be given to retaining or bringing in–house those controlling and directing functions that are important for delivery.

100 Tenants (those operating under a lease in accordance with LC3) carrying out high hazard activities should either maintain their own Nuclear Baseline, which links to the licensee's Nuclear Baseline, or be included within the licensee's Nuclear Baseline.

101 Contractors who do not need to be included in the Nuclear Baseline, but who may impact on nuclear safety (i.e. those utilised on a project basis), should be managed using the organisation's project management arrangements. In this way the licensee can ensure that the work of the contractors is properly specified, that arrangements are in place to manage the contract, that the contractor uses competent people to carry out the work, and that the contractor's work is subject to appropriate levels of scrutiny and supervision.

Key point – Category 1 service providers should be in a Nuclear Baseline. Contractors who do not need to be included in the Nuclear Baseline, but who may impact on nuclear safety (i.e. those utilised on a project basis), should be managed using the organisation's project management arrangements.

4.5.3 Define and Record the Organisation Chart (4)

Organisational Design Criteria

102 Organisations should be designed from a clear understanding of current and future business activities and their nuclear safety implications. It should enable understanding of dependencies within the organisation and with service providers.

103 Careful consideration needs to be given to the design of an organisation to ensure appropriate functions are identified and resources assigned. It is good practice to define criteria, sometimes referred to as Organisational Design Principles, in the management system and use them to inform the Nuclear Baseline.

Key Point – Careful consideration needs to be given to the design of an organisation to ensure nuclear safety functions are identified and resources assigned.

BAE Systems

104 Organisational Design (OD) criteria (or principles) should:

- Provide a high–level framework with which to design the organisational structures.
- Set out the utilisation factor used by the organisation i.e. the proportion of time that an individual is available to conduct their accountabilities and responsibilities.
- Define and reinforce accountabilities.
- Support business efficiency by having similar activities aligned and organised in a consistent manner to aid mobility of resources.
- Promote consideration of the implications for changing structures when undertaking any organisational change.
- Demonstrate strategic and day to day control.
- Control the balance in the use of internal and external resources.

105 OD Criteria may include:

- Span of control – a leader cannot effectively manage too many direct reports. Span of control should be determined by the nature, variability and complexity of the work and capabilities of direct reports.
- Levels of hierarchy – flat versus hierarchical structure. Flatter structures can aid communication and decision making.
- Roles and responsibilities (including authorities for decision making) – the roles and responsibilities of leaders, individuals and teams should be clearly identified and described with appropriate accountability.
- Decision making – decisions should be delegated to the lowest practicable level to minimise bureaucracy, speed up processes and develop people.
- Functional structure – functional as well as delivery management lines should be considered where they differ, for example in matrix organisations.
- Customer focus – the expectations of customers and stakeholders should be given appropriate priority throughout the design process.
- Maintenance of capability – the functions or authorities accountable for maintaining capability should be defined.

106 While it is evident organisations which have evolved over many years may not meet such criteria, it is good practice to measure them against criteria in order to reveal potential weakness. This will help to provide an impetus for positive change.

107 Implementation of OD can be further supported by the production and maintenance of a set of model structures with consistent post titles (and defined responsibilities) aligned to the defined criteria. These can form a template on which to base new structures and may also be used to monitor organisational drift when compared to the current structures. The logic for any proposed variance from the model structures should be captured and considered whenever organisational change is proposed.

Organisational Structure

108 Organisational structures should be shown in diagrammatic form to help clarify management load, single point vulnerabilities and outsourced activities including the extent of reliance on contractors and/or parent organisations. This representation also greatly facilitates the change management process.

4.5.4 Define and Record Nuclear Baseline Posts and Roles (5)

Extent of a Nuclear Baseline

109 Licensees may have historically differing views on the level of activity that should be captured in the Nuclear Baseline which will range from:

- The minimal level of activity necessary to remain safe and compliant.
- That which is required to sustain normal operations.
- That which is required to sustain accelerated operations.

110 In order to be consistent and meaningful the Nuclear Baseline should represent the 'fully capable organisation', **not** the minimum required for safe operation or shutdown – i.e. that necessary to sustain nuclear safety during normal operations and reasonably foreseeable events. The ONR[18] states that the Nuclear Baseline:

> *Should not be restricted to those roles set out in the site's minimum staffing arrangements nor those roles identified by the licensee as necessary to maintain the facility in an inactive or quiescent shutdown state.*

111 The Nuclear Baseline should consider the resources needed to manage periods of change and potential emergency situations at the current phase of the licensed facility's life cycle. Minimum staffing levels need to be understood so that the organisation knows the minimum number of staff that are needed to be able to operate safely and control operations, however operating at this level is not sustainable and should only occur in adverse circumstances.

112 The way minimum staffing levels is defined depends on the plant being considered and is usually set out in the safety case. It could be defined as the minimum staffing needed to:

- Shutdown the Plant
- Respond to an emergency
- Maintain the Plant in a safe shutdown state
- Perform watchkeeping and respond to an emergency during watchkeeping
- In the case of plants that can't be shutdown, minimise and control operations.

113 Minimum staffing arrangements can also include the supporting services required to operate the site, such as the Site Shift Manager, Fire Service, Access Control etc.

Key Point **–** The Nuclear Baseline should represent the 'fully capable organisation', **not** the minimum required for safe operation or shutdown.

Nuclear Safety Posts and Roles

114 It is sometimes argued that all parts of an organisation support nuclear safety, although the link may be tenuous (for example, catering facilities necessary to feed those who undertake safety–related work). To subject all parts of the organisation to full scrutiny may diminish nuclear safety through diverting resources from high priority issues, as well as devaluing the Baseline arrangements.

115 Equally, the Nuclear Baseline should not be unduly restricted, e.g. to senior levels of management. Staff at all levels can have significant impacts upon nuclear safety and should be included regardless of whether they are 'merely following orders'. The Nuclear Baseline should include all those roles which have the potential to impact upon nuclear safety, both positively and negatively. The ONR[19] expects the Nuclear Baseline to identify the licensee's organisation down to the level where no impact on nuclear safety is observed.

[18] ONR, *NS-TAST-GD-065 - Function and Content of the Nuclear Baseline*, 2025.
[19] ONR, *NS-TAST-GD-065 - Function and Content of the Nuclear Baseline*, 2025.

Key Point **–** Relevant roles at all levels and employment status should be considered for inclusion in the Nuclear Baseline.

116 The move to hybrid working and people working in centralised functions away from sites means that people not working on a nuclear site could be included in a site's Nuclear Baseline. Appendix B sets out illustrative examples of roles that could be included in a Nuclear Baseline and Conventional Safety, Security and Environmental Baselines.

Key point – A nuclear safety post or role is defined as one where an action or inaction by the individual or group:

- undertaking
- supervising
- managing
- governing
- overseeing
- assuring
- challenging
- defining or
- directly supporting

work could pose a direct or indirect impact on nuclear safety, both immediate or latent.

117 A post is a position identified on an organisational structure, a role is a specific work activity/responsibility which may wholly or in part contribute to a post or be assigned to an individual.

118 Some organisations include roles as well as posts on their Nuclear Baseline in order to gain a complete picture of the nuclear capability and evaluate the true impact of any proposed change. However, a large number of roles potentially increases the complexity of the management of the Nuclear Baseline and the Management of Change (MOC) process. It can therefore be beneficial to group roles together, e.g. by assigning them to a post.

119 Roles allocated to nominated individuals, e.g. subject matter experts, should be held as distinct roles and can be identified as such on the Nuclear Baseline. Emergency response roles should be clear within the Nuclear Baseline either as a traceable thread (shadow organisation) or as a stand–alone document.

120 There should be a definition of the competence required to discharge each post/role, taking account of the characteristics of the organisation and its range of activities. The achievement and demonstration of competence, which should cover qualifications, training and experience, should comply with LCs 10 and 12 and be addressed through a systematic approach to training. The training should include all the requirements necessary to effectively discharge the full scope or function of the identified post/roles. These considerations are outside the scope of this GPG.

121 There are a range of approaches used by licensee to determine, sort and categorise which posts/roles should be included on the Nuclear Baseline. Some licensees focus on whether a post/role has immediate direct impacts on safety (e.g. Duly Appointed Persons [DAP], SQEP roles, operators), latent direct impacts (e.g. Designer, Quality Inspectors) or latent indirect impacts (posts/roles that have an indirect route to impact on plant). Others consider the level of impact a post/role can have on nuclear safety and/or the level of training required to fulfil the post/role.

4.5.5 Define Resources in Terms of Numbers, Capabilities and Competencies (6)

The Numbers Required

122 It is necessary to determine the numbers required for each post or role within the Nuclear Baseline. It is helpful for practical purposes to group posts where there is interchangeability, with care not to lose sight of key specific capabilities. In order to serve as a useful reference point, the nuclear safety basis for the defined post/roles and the numbers required need to be understood and recorded. The actual number of people in post is, in effect, a performance measure that should be monitored and risks arising from this managed through the governance process. There should be a process in place to determine whether the numbers defined are indeed adequate for nuclear safety.

123 For existing situations, the resource requirement can be based on available evidence – for example quantitative performance indicators such as workload, overtime or maintenance backlogs when staffing levels were at a certain level may provide sufficient justification. Qualitative feedback can also be important.

124 A new organisation or project without an existing complement will require a different approach. This could include data from similar plants, sites or projects and can be supplemented by first–principle analysis if necessary. Benchmarked data should be used with intelligence about context including performance, relevant processes and the regulatory framework within which they operate. Where more predictive approaches are needed, advice can be sought from a human factors specialist.

125 It is good practice for the minimum staffing levels and the number of posts required on the Nuclear Baseline for normal operations to take into account a utilisation factor. This is the proportion of time that an individual is available to conduct their accountabilities and responsibilities. It should take into account factors such as training, line management, annual leave and sickness that reduce the individual's availability to conduct their accountabilities and responsibilities. If a post holder has non–nuclear safety accountabilities and responsibilities, their availability for nuclear safety related activities should also be reduced accordingly.

126 The numbers actually present on any given day may be less (or more) than the Nuclear Baseline figures without necessarily affecting nuclear safety performance – although it is necessary to understand the vulnerabilities. Short term and temporary absences (training, leave) are a normal part of day to day activities, but long–term absences such as secondments or long–term illnesses[20] which are left vacant should be subject to MOC controls as they may impact nuclear safety.

> **Key point** – The licensee should determine the number of staff required to fulfil the posts and roles identified in the Nuclear Baseline, be able to demonstrate that this is adequate for nuclear safety and monitor and manage the risks arising from any variance.

Competence

127 LC12(1) requires *'the licensee to make and implement adequate arrangements to ensure that only suitably qualified and experienced persons perform any duties which may affect the safety of operations on the site or any other duties assigned by or under these conditions or any arrangements required under these conditions'*.

128 It is necessary to understand the competence needs of the business as well as be able to demonstrate that staff are competent to discharge the full scope or function of the identified post/roles that impact on nuclear safety. This should include roles which have nuclear safety governance responsibilities.

[20] ONR suggests that greater than 4 weeks classes as a longer-term absence, see NS-TAST-GD-065, 2025.

Key Point – The licensee should understand the competence needs of the business and be able to demonstrate that it has sufficient competent persons to be able to maintain control and oversight of nuclear safety activities at all times.

4.5.6 Self Assessment

129 Gather and review evidence to demonstrate:

- That the current and future activities which impact upon nuclear safety and what the organisation is licensed to do are defined.
- That the Nuclear Baseline achieves the goal of assessing, maintaining and demonstrating nuclear safety capability.
- That it is clear how many Nuclear Baseline roles are needed and why.
- That the Nuclear Baseline identifies which roles are held by contractors, that this is kept under review and that succession plans are in place for those roles.
- That the organisation has identified those activities performed by contractors which are outside the criteria for inclusion in the Nuclear Baseline which have the potential to impact upon nuclear safety. There are project management arrangements in place for such contracts which demonstrate that the key principles of the Nuclear Baseline are met (i.e., that work is adequately organised, resourced and controlled by competent people).
- That the Nuclear Baseline identifies the IC and DA capability across the breadth of the organisation's business and these roles are included in succession planning arrangements. That the Nuclear Baseline and supporting documentation demonstrate that there are enough licensee employees in the licensee organisation to retain the IC and DA capability at the right level.
- That the processes to derive and maintain the core capability required to manage nuclear work safely are clearly defined, transparent and testable.
- How the organisation ensures that it has the capability to develop, understand and operate within the Safety Case.
- That the organisational design criteria (if used) are clearly defined, understood and applied.
- The relationship between the organisation's activities and their hazards, the core capabilities, Nuclear Baseline and the Management System is clear.
- Whether the arrangements for the Nuclear Baseline are clear and documented.
- Effective governance, challenge and senior management ownership of the processes to ensure adequacy of the organisation, including the Nuclear Baseline.
- That there are arrangements and SQEP people in place to manage the Nuclear Baseline and ensure that it is accurate and up to date.
- That the Nuclear Baseline accurately reflects how the organisation is structured and populated to deliver the requirements of the organisation's activities, including emergency response.
- That the competence needs of Nuclear Baseline roles is understood, clearly set out and staff are trained and SQEP to be able to fulfil their Nuclear Baseline roles.
- That the Nuclear Baseline is readily retrievable and easily interrogated for information useful to management of nuclear safety and used in practice within the organisation.
- That there are evidence–based projections of future resources required (particularly important for new or changing organisations).

4.6 Assess

4.6.1 Assess the Adequacy of the Resources and Competence, Identify Vulnerabilities (7)

130 Having produced and populated the Nuclear Baseline, it will be necessary to justify that it meets the requirements for a capable organisation. Suitable documentation should be compiled to demonstrate that the Nuclear Baseline accurately reflects how the organisation is structured and populated to deliver the requirements of the organisation's activities, including emergency response. This should be based on operational experience and include evidence–based projections of future resource needs. Suitable performance indicators should be established and used to review and test the adequacy of the Nuclear Baseline.

131 The arrangements for the Nuclear Baseline should be clear and documented. The arrangements should demonstrate there is effective governance, challenge and senior management ownership of the processes. The arrangements should be subject to review by the organisation's internal challenge function. This review should test that the Nuclear Baseline is readily retrievable and easily interrogated for information useful to management of nuclear safety and used in practice within the organisation.

132 Performance indicators should be used to provide reassurance that there are sufficient nuclear safety roles to deliver the organisation's activities effectively. The indicators should include leading measures of performance prior to potential failure. They should address aspects such as quality and timeliness of work activities that could impact on safety performance. Some lagging measures may be used as retrospective learning tools, but these should be in addition to leading indicators. Indicators can also be used to monitor vulnerabilities identified in the Nuclear Baseline.

133 The SDF has published guidance on Safety Performance Indicators[21], examples of indicators that can be used for Organisational Baselines and MOCs include:

- Leading
    - Number of vacancies
    - Proportion of in–house staff to contractors
    - Use of external assistance/contractors/agency staff
    - Actual baseline versus minimum or optimum baseline
    - Number of vulnerabilities identified in the baseline
    - Number of staff on temporary promotion
    - Number of gaps with competency compliance
    - Percentage of approved SQEP in post or role
    - Number of gaps with appointment of duly authorised or appointed person
    - Number of staff holding multiple and/or potentially conflicting roles
    - Number of singleton roles and/or competences
    - Scarce roles and skills
    - Number of vulnerability actions in place
    - Number of live changes being made to the baseline
    - Number of job descriptions not in place
    - Staff demographics
    - Number of staff with less than 1–2 years in the organisation
    - Number of staff with less than 1–2 years in role
    - Number of succession plans in place for Nuclear Baseline roles
    - Number of /age of out of date procedures

[21] SDF, *Development and Use of Safety Performance Indicators*, A UK Nuclear Industry Good Practice Guide, 2016

- Lagging
    - Amount of overtime used
    - Number of safety incidents, near misses etc (especially if fatigue is a factor)
    - Days lost due to work related accidents and events
    - Number of non–compliance with due process events
    - Number of retrospective MOCs completed after the change has already been made or is being made
    - Number of overdue actions related to MOCs
    - Number of maintenance concessions
    - Number of overdue safety actions
    - Number of walkdowns completed against plans
    - Amount of re–work or unsatisfactory deliverables
    - Amount of work delivered late
    - Number of occasions when minimum manning levels were breached or threatened
    - Staff morale as shown through staff surveys and survey trends
    - Results of safety culture survey results and trends
    - Number of whistleblowing incidents and/or anonymous issues raised
    - Long term sickness rates
    - Attrition rates
    - Amount of missed training

Evaluate the Capability Resilience and Identify Vulnerabilities

134 Evaluation of capability resilience is achieved by comparing the current structure and resource level to the Nuclear Baseline. This evaluation will expose immediate shortfalls and vulnerabilities, e.g. vacancies and potential loss of key expertise through retirement. This will identify the need for corrective actions, for example compensating for long–term vacancies or absences, deviation from the Nuclear Baseline (for example due to non–compliance with the MOC process) and endorsing succession or contingency plans. Succession planning and resource strategies should take account of the nuclear safety governance, DA and IC capabilities and the Nuclear Baseline roles fulfilled by contractors.

Nuclear Restoration Services (Dounreay)

Vulnerabilities

135 A vulnerability in the Nuclear Baseline is a current or potential weakness in nuclear capability against the current and future demands. These vulnerabilities can be broadly divided into:

- Individual and specific issues that can only be addressed at a local level (although appropriate supporting policies and a management framework are needed) such as a vacancy or the need for a succession plan for a specific role.
- Issues that concern the organisation as a whole, such as restrictive remuneration, recruitment bans, policies that prevent recruitment of people and generic risks and patterns.
- External factors such as national or regional skill shortages and/or roles that require scarce skills.

136 Identification of vulnerabilities provides information for managers to take appropriate action. It is good practice to conduct the vulnerability analysis at both a local and strategic level to enable local and strategic actions to be put in place to mitigate the vulnerability. It is recommended that the results of such analysis are aggregated and reported through the governance process.

137 The areas of vulnerability outlined below should be explored during the review of the current organisation against the Nuclear Baseline.

Vacancies

138 Resolving vacancies should be an integral part of the succession and recruitment processes, and there may be a requirement to make provisional arrangements to cover vacancies (see Management of Change), otherwise a loss of nuclear capability can occur.

Competence

139 Given an adequately developed competence management system, it should be possible to clearly establish the competence of post– and role–holders. Vulnerability occurs when clusters of post– or role–holders do not possess the required competence or when a key or specific role is not filled by a fully competent person. Consideration should be given against the lead time required to achieve the appropriate level of competence and the level of staff turnover.

140 Some licensees use the VASCR (Valid, Authentic, Sufficient, Current, Reliable) Assessment Principles which ensure that the assessment process itself is valid and when role holders are demonstrating their competence they provide the appropriate evidence. The principles consider:

- Valid – is the assessment process appropriate to the subject or qualification, does it assess only what is meant to be assessed and is the learner's work relevant to the assessment criteria.
- Authentic – the work has been produced by the learner only.
- Current – the work is relevant at the time of assessment (usually within three to six months).
- Sufficient – the work covers all of the assessment criteria and learning outcomes.
- Reliable – the work is consistent across all learners, over time and at the required level.

Knowledge

141 The licensee should be aware of tacit, local or specialist knowledge that can be lost through demographic or other staff turnover. Some organisations have established processes for extracting and recording critical knowledge that is known by long serving staff, e.g. Retention of Critical Knowledge (RoCK) arrangements. These can take a number of formats including recording structured interviews with the person leaving to make a record of their knowledge. Sufficient time needs to be allowed to capture knowledge before a member of staff leaves, however, this is not always possible, especially when notice periods are quite short.

Singletons

142 Singleton vulnerability occurs when the capability of the organisation resides with one individual and relates to technical rather than managerial competence. Where singletons are identified the implications should be considered and appropriate action taken, for example succession, training or contingency planning.

Service Providers

143 Different categories of service provider are described in paragraphs 89 to 95. In exploring vulnerabilities particular attention should be paid to threats arising from undue dependence on Category 1 service providers, a high ratio of contractors to employees and inadequate Intelligent Customer arrangements. This is particularly important if this is manpower replacement for core capability and affects long–term resilience.

144 Where vulnerabilities are identified it may be necessary to mitigate the risk by, for example, strengthening contract terms and oversight, establishing a diverse supplier base and drawing up contingency plans to bring expertise in–house to protect from potential loss of service.

145 External staff may be contracted into the licensee's organisation to provide specific technical expertise, e.g. Category 1 service providers. Reliance on such resource substitutes creates risks relating to security of supply which should be addressed in a similar manner.

146 If service providers undertake control and supervision of aspects of the licensee's operations, there is further risk the licensee may lose control of its safety–related operations. The implications should be considered by the licensee and action taken as necessary such as filling roles with in–house staff or secondees.

147 Similar vulnerabilities may be presented by employees with special contractual arrangements such as 'zero hours' and/or post–retirement contracts.

Secondees

148 Secondments can present a potential vulnerability due to simultaneous loss of a number of staff, and/or loss of SQEP capability should the secondment not be managed well. Formal agreements between the home organisation and the one receiving the secondee should be put in place to manage the use of secondees, the length of their secondment, management arrangements and how they will keep in touch with their home organisation.

Demographics

149 Demographics in this context specifically relates to the age profile of the workforce. Loss of capability may occur when a significant proportion of the workforce is concentrated into a relatively narrow age band which is approaching retirement age, or when there is a cluster of relatively young or inexperienced staff. These demographic issues need to be identified and managed, e.g. redistribution of employees to balance skills and experience, or through training, apprenticeship or recruitment campaigns.

Health Issues

150 Vulnerabilities can emerge as a result of specific health issues, such as long–term sickness and staff on restricted duties. Appropriate monitoring and corrective action should be instigated and may include the reallocation of roles and responsibilities. Sickness levels and shielding of staff looking after vulnerable relatives created challenges during the COVID–19 lock down. Having robust contingency and succession plans helped to mitigate the issues.

Scarce Resources

151 The nuclear industry has identified that there are some skills and capabilities that are scarce and difficult to recruit, train and retain. This can be because it takes a long time for someone to become competent in the discipline and/or there is a lack of people entering the discipline itself. In these cases, it can be difficult to have succession plans and defence in depth for particular roles and different approaches may need to be taken to ensure there is sufficient capability available. For example, an organisation may decide to have greater numbers of a scarce resource either qualified or in pipeline than needed from an activity analysis perspective to provide resilience. Some organisations are working together to develop capability and capacity in areas such as criticality to provide a pipeline of future talent for the industry as a whole. Vulnerabilities can also be caused by fluctuations in the job market and resource availability which should be monitored. This could be exacerbated by targeted recruitment pressures from competing external organisations.

Overloading and Overtime

152 Individuals allocated too many roles may have difficulty managing responsibilities and be susceptible to stress. This may be apparent in the Nuclear Baseline from the evaluation of the total workload that the individual roles bring collectively to each post. Where this is high, typical solutions might be to redistribute roles more evenly within the organisation or to employ additional staff or service providers. However, interrogation of the Nuclear Baseline is not a substitute for line management awareness of workload and stress levels.

153 Similarly, sustained high levels of overtime may indicate inadequate resource levels or overloading which also needs to be addressed.

Example of a Vulnerability Analysis

154 The Nuclear Baseline could be coded to show vulnerabilities, depending on the level of risk e.g. red, amber or green and the mitigation that is in place. Vulnerabilities can be shown against particular types of post or area of the business depending on what is most appropriate for the organisation. Each post (combination of roles) could be assessed against the set of vulnerabilities outlined in paragraphs 135 – 153.

155 Some licensees conduct quarterly reviews of the adequacy of their Nuclear Baselines at a functional level considering the vulnerabilities outlined above and/or associated safety performance measures. This helps functions to manage and monitor their baseline and ensure mitigation is in place. The functional level reviews are collated and considered at an appropriate governance forum to identify any organisation wide vulnerability that needs to be addressed. A particular aspect to monitor is ongoing vulnerabilities that are not being addressed over time, this may indicate that the Nuclear Baseline itself is incorrect or may signify that there are other issues within a function that need to be addressed.

4.6.2 Identify Vulnerability Mitigation (8)

Mitigation of Vulnerabilities

156 Once vulnerabilities have been identified actions should be taken to manage them. This may involve short–term contingency plans to address immediate threats to the business as well as long–term strategies. These actions should be captured and progressed as part of normal business management by providing progress reports to the appropriate management meetings, safety committees and executive meetings where organisational performance is evaluated. Examples of ways to mitigate vulnerabilities are:

- Development of adequate succession plans.
- Elimination of singleton SQEP roles, for example by making roles interchangeable and/or training/recruiting more staff.
- Capability development plans.
- Training plans.
- Apprenticeship schemes and graduate programmes.
- Ensuring the resilience of the supply base.

157 The vulnerability analysis and associated mitigations can be used to produce an evaluation of the vulnerability associated with the baseline posts and roles based on the risk to the business and the mitigation that is in place. An example of this is shown in Table 2.

Table 2: Example of a Vulnerability Analysis

Post/role	No. in Nuclear Baseline	No. in post	Vulnerability	Mitigation in place
Safety manager	1	1	Pending retirement	None – action needed
Principal engineer	1	1	Successors identified.	Successor trained and available to take on role
Senior engineer	2	2	Pending retirement	None – action needed
Engineer	1	1	Singleton without immediate successor.	None – action needed
Technician	1	1	Competence	Competence development plan in place
Safety case author	1	1	Successors identified.	Successor identified and training plan being undertaken
Policy and strategy	1	4		No action needed there are sufficient capable staff
Regulatory interface	1	1	Competence gaps	Competence development plan in place
Totals	**14**	**15**		

RAG Status (for this example):

- Red = Immediate action required. No plan in place.
- Amber = Action/plan underway. Keep under review.
- Green = Under control. No further action required.

Key point – The licensee should ensure that compared with the Nuclear Baseline, resources are adequate and sufficiently resilient to meet the current and future demands. Appropriate corrective or mitigating action should be taken where there are gaps, weaknesses and/or vulnerabilities and these should be monitored through appropriate governance routes.

4.6.3 Self Assessment

158 Gather and review evidence to demonstrate:

- That the Nuclear Baseline is adequate for the organisation's purposes, including the use of performance indicators where appropriate, and in line with the SMP and other relevant documentation.
- That the Nuclear Baseline indicators are being monitored on a regular basis and action taken when needed.
- That the organisation clearly understands its vulnerabilities (including demographics, vacancies, competence, singletons, overload etc.)
- That appropriate contingency / mitigations are identified against vulnerabilities and are being actioned in a timely manner.
- That the effectiveness of the mitigations is being monitored and is reducing the vulnerabilities.
- That there is governance in place to oversee the vulnerabilities and ensure they are being addressed and managed.

4.7 Manage

4.7.1 Manage the Nuclear Baseline Data & Use it for Capability Management (9)

Presenting the Information in a Usable Format

159 Visibility of the Nuclear Baseline and clarity of presentation are essential to ensure all employees understand the impact of changes that could affect nuclear safety.

160 The Nuclear Baseline should be maintained as a live system and subject to change control. Organisations are free to choose a format that best meets their needs. Some organisations have developed single Organisational Baselines that cover roles and posts required for nuclear and conventional safety, security and environmental protection. This has enabled them to identify vulnerabilities and assess changes across the organisation. However, in a larger or more complex organisation this can be difficult to maintain and lead to weak ownership. In such cases the Organisational Baseline may be maintained as separate Baselines for each discipline, but with the ability to collate, present and consistently maintain each individual Baseline to a common standard using the same MOC controls.

Monitoring and Review of the Nuclear Baseline

161 Audits of management arrangements should be included as part of the standard quality programme of an organisation at least annually. Where appropriate, an integrated audit programme should provide assurance that the arrangements are robust. The Nuclear Baseline and the processes managing it should be reviewed and validated periodically to ensure that:

- The Nuclear Baseline still reflects the full scope of the organisation's nuclear activities.
- The Nuclear Baseline is enabling the organisation to manage its nuclear capability and any vulnerabilities associated with it.
- The resource levels are still adequate.
- No unauthorised organisational change has occurred.
- Vulnerabilities are being mitigated and, where possible, addressed.
- The processes governing the Nuclear Baseline are suitable.

Key Point **–** Periodic review of the Nuclear Baseline should be undertaken at least annually to ensure that it is current and accurate and that the processes governing it are suitable.

BAE Systems

Forward Planning

162 A successful business will have a coherent, integrated approach that secures competent resources to maintain and improve the nuclear safety of all its activities linked to its safety cases for operation. For example, there should be clear, direct links between the demands of the safety case, the identified core capability and competence requirements of the business, the Nuclear Baseline and the competence assurance arrangements. The Baseline should be used as an integral part of workforce planning.

163 The Nuclear Baseline should be used as a tool to enable:

- Succession planning for posts and roles contained within the Nuclear Baseline.
- Forward planning and managing changes in the scope or pace of work and activities and therefore the capability needed.
- Management of increases and decreases in capability demand.
- Identification of SQEP requirements for future projects or where projects will complete and release personnel for redeployment.
- Identification of new roles required along with new training or competences.

Management of a Nuclear Baseline

164 The process of developing and maintaining the Nuclear Baseline should be facilitated by a suitably qualified and experienced person(s). Line management should be accountable for the accuracy and currency of information within it. These arrangements need to be captured within the business management system.

165 Nuclear Baseline data is often managed as a subset of a broader HR management system. Practical considerations include:

- How information is captured, e.g. structured questionnaires, interviews, workshops.
- How it is presented and integrated into normal business practices.
- Who the users of the Nuclear Baseline are.
- The format and level of detail they each require.
- What the relevant nuclear activities are.
- Which managers are responsible for them.
- Who plans the associated resource levels.

166 It is important that there is clear governance of, and due process for, the Nuclear Baseline. Key data and information, e.g. scope of work, role definitions and resources should be independently validated by SQEP individuals. The Nuclear Baseline should be the accountability of a suitable senior executive concluding that the organisation is structured and resourced to conduct nuclear activities safely. Independent challenge should be provided.

4.7.2 Self Assessment

167 Gather and review evidence to demonstrate:

- The Nuclear Baseline processes and procedures are robust and being followed.
- Clear Process Ownership and adequate SQEP resource to implement the arrangements.
- That there are periodic audits that demonstrate the management arrangements are robust.
- That there is evidence that the Nuclear Baseline is maintained and up to date reflecting the current organisation and there are triggers for its review as part of the organisation's management of change process.
- That there is a periodic review of the Nuclear Baseline to ensure it reflects the full scope of the organisation's nuclear activities, resource levels are still adequate, vulnerabilities are managed and no unauthorised change has occurred.

- That the Nuclear Baseline is used to enable succession planning, identify capability requirements for future projects, define new roles and/or new competencies and used to inform decision making.
- Senior management involvement in governance of capability.
- That the Nuclear Baseline provides an appropriate reference point for the licensee's management of change arrangements made under LC 36.

Sellafield

5 CHAPTER 2: MANAGEMENT OF ORGANISATIONAL CHANGE (MOC)

5.1 Introduction

168 Organisational change is a normal and inevitable part of business undertakings. This can be from minor limited changes through to reorganisations, change in ownership and expansion or contraction. These changes need to be managed, with the risks identified and controlled such that the changes do not adversely affect performance. The purpose of the Management of Organisational Change (MOC) process is to effectively control these changes such that they are considered, well planned, carefully executed and that benefits are realised without compromising nuclear safety. It is imperative that the organisation retains the necessary capability and capacity to resource all of the organisational demands (e.g. Nuclear Baseline) which can be considered as the safety case for the workforce. The MOC process should be a part of the licensee's management system.

169 Some organisations that have developed an Organisational Baseline have extended their management of organisational change arrangements to consider the potential impact of changes on conventional and nuclear safety, security, safeguards and environmental protection roles. The guidance outlined in the following sections can be applied equally to other disciplines that require suitably qualified and experienced personnel to conduct work to ensure compliance with regulatory requirements. Some organisations also use their management of organisational change arrangements to manage changes to their management system arrangements made under LC 17.

170 It is important that risks resulting from the change, as well as risks arising from implementing the change (transition) are explored and considered at the earliest opportunity and appropriate mitigations put in place. This could involve discussion and consultation with workforce representatives, regulators and other stakeholders. Additionally, leadership should demonstrate their commitment to the MOC process, by using it and monitoring the implementation of the organisation's arrangements and the cumulative impact of multiple changes. The MOC process should be applied to changes at all levels in the organisation, including the very top of the organisation (i.e. the Board or Executive team), where changes have a potential impact on nuclear safety.

171 It is good practice for the MOC arrangements to cover important enabling and support functions such as human resources, finance and procurement where these have the potential either directly, or through consequential change, to impact on the licensee's management of nuclear safety.

172 The MOC process should be integrated with the normal human resource (HR) management processes, including staff and TU consultation. Sensitivity may be needed around the coordination of the MOC and HR processes and it is important to ensure that information about role changes are handled confidentially and information is not shared inappropriately prior to staff consultation. The MOC process should be proportionately applied (depending on the potential impact on nuclear safety) in a timely manner using competent people with an understanding of the MOC process and experience of the area affected by the organisational change.

173 It should be clear how the MOC process relates to other change processes within the organisation, for example, safety case and plant change processes as these changes can affect the capability needs and Nuclear Baseline. Consideration should also be given to how the changes could affect licence and permit conditions and other arrangements.

174 Some licensees have introduced overarching change processes to ensure that the correct change management processes, controls and governance are applied when a change is being proposed. The processes ask a series of questions to ensure the appropriate change management arrangements are followed.

175 Examples of the questions are outlined below:

People: Does this change impact the organisational structure, roles & responsibilities, contingent labour, required capability/capacity, and/or equality?
For example: Number and/or type of baseline roles, competences or training requirements, core capability, Intelligent Customer capability, use of contractors, workload for individuals / teams, could it introduce potential for a loss of organisational knowledge or skills, long term vacancies which have an impact on EHSS. Could the change impact shift timing or arrangements, job titles, behaviours, health and wellbeing, or equality.

Security: Does this change impact security?
For example: Does the change have the potential to impact any current or planned physical security measures, such as; security system design, contract security guard force, fences/gates/doors, clear or sterile zones, alarm systems (including detectors), CCTV camera views, access control infrastructure, or any policies, procedures or processes listed as evidence within the Nuclear Site Security Plan.

Environmental, Health and Safety and Radiological Protection: Does this change impact Environmental, Health and Safety or Radiological Protection?
For example: Does the change have the potential to impact any Environmental Permit including permit compliance, Environmental Legislation, any Environmental, Health and Safety Management arrangements and / or organisational arrangements, Nuclear Site Licence arrangements, any conventional safety control (examples - fire management, PUWER, Legionella etc), occupational health (example – noise, dust etc) or any radiological protection system or control.

Information Security: Does this change mean we are creating new sensitive data or sharing sensitive data with new people or systems?
For example: Does the change require new applications or the use of new web–based applications such as Software as a Service.

Emergency Arrangements: Does this change affect the Site Emergency Arrangements?
For example: Changes to the nuclear safety case, infrastructure, operations, Operational Technology, site–based staff, Minimum Safety Persons Levels, baseline Emergency Arrangement role holders, Incident Control Centres.

Plant, Infrastructure, and Building Management: Does this change impact any infrastructure?
For example: Leachate plants, packaging plants, vaults, research laboratories, maintenance facilities, heavy equipment, offices, land usage and site allocation.

Operational technology: Does this change impact Operational Technology?
For example: radio system for on site, strain gauges, flow meter, seismic measuring devices, embedded computer systems.

Design: Does this change require or impact any existing or proposed design requirements, design, or safety case of any existing or future assets?
For example: design requirements, design drawings, safety case, controlled design documents.

Safety Case: Does this change require or impact the safety case of any existing or future assets?
For example: Impacts an existing safety case scope, assumptions or requirements or introduces new chemotoxic, radiological, nuclear or environmental hazards either while implementing the change (i.e. during construction, commissioning, decommissioning, demolition) or at the end point of the change.

Integrated Management System: Does the change require or impact any existing or proposed Management System Arrangements and/or Records? Including upstream and downstream processes.
For example: Procedures, processes, work instructions, guidance, policies, forms, templates, operational instructions (i.e. snow clearing, decontamination), analogue records, digital records, archived records.

Information Technology (IT) System: Does this change impact IT/IT Systems?
For example: Radio or telecoms systems for offices or site, could it affect mobile phones, software, hardware, infrastructure or network, live services, block firewall access, systems support.

Personal Data: Does this change mean that we collect more personal data, collect new personal data or use personal data in a different way.
For example: Using HR records to populate other non HR systems or exchanging our staff information with suppliers.

Information Governance: Does the change require a change in Information Asset Owners or information access?
For example: Does the change require a change in information asset owner or add to the information already in a system owned by an Information Asset Owner. Does the change require additional access permissions to be granted to applications (super users) or administrator permissions.

Commercial: Does this change require or impact any existing or proposed contracts, frameworks, or partnerships?
For example: project commercial contracts, contract variations, sourcing strategies.

Lifetime Plan Baseline: Does this change affect any document pack artefacts of the Lifetime Plan Baselines?
For example: Lifetime Plan Baseline documents, scope, schedule, estimates, risk register and/or supporting documentation.

5.2 Governance

176 The MOC process should describe arrangements for the governance and oversight/scrutiny of changes proposed. This should ensure that there is independent (of the change) challenge, as well as proportionate scrutiny based on the risks introduced from the change or the process of change. The organisation's Board/Executive should be involved in assessing the implications of changes which may have a greater potential impact on nuclear safety as part of the licensee's governance arrangements. The governance arrangements should include an oversight process to monitor implementation and provide strategic guidance and support for more significant changes. The organisation's Board/Executive should regularly seek assurance that implementation of more significant and complex changes is proceeding satisfactorily. The regulators[22] (ONR and/or DNSR for nuclear safety) may need to be consulted about changes with large implications (see Table 4).

[22] For changes associated with Organisational Baselines the Environment Agency, Scottish Environment Protection Agency or Natural Resources Wales may need to be consulted for changes to roles associated with environmental protection, ONR for security and the HSE for conventional safety roles.

5.2.1 Ownership and Coordination of the MOC Management Arrangements

177 In a similar way to the Nuclear Baseline there should be acknowledged process owners whose defined responsibilities should include the process activities outlined in Section 5.3 for the Management of Organisational Change process. Coordination of these responsibilities should include:

- Maintaining a register of change submissions.
- Ensuring organisational changes are categorised and assessed by an appropriately authorised person or body.
- Monitoring that actions associated with the changes are completed in a timely manner.
- Verifying that all organisational changes are satisfactorily closed–out including updating the Nuclear Baseline.
- Maintaining records of all MOCs.

5.2.2 Self Assessment

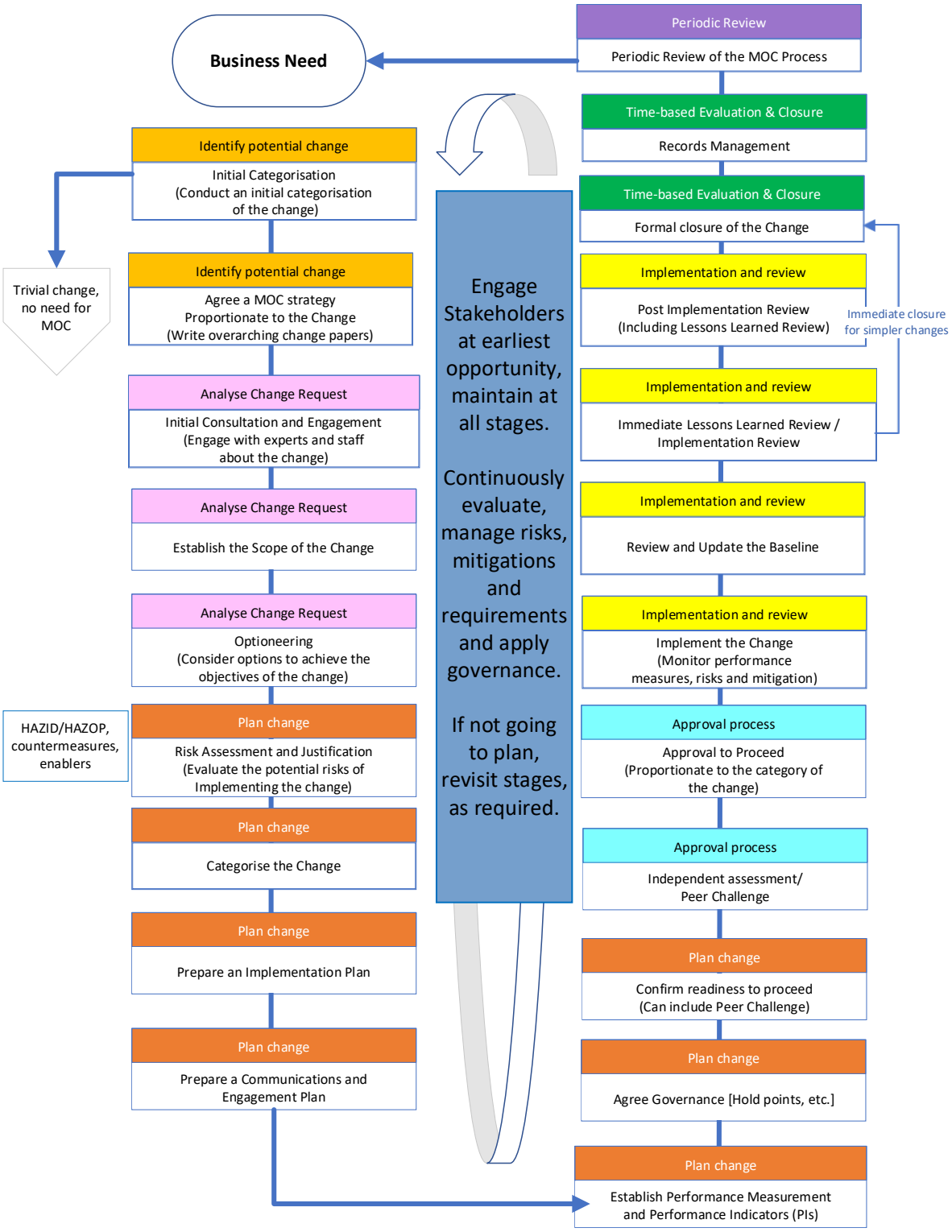
178 Gather and review evidence to demonstrate that:

- There are clear, up to date and accessible documented arrangements for the MOC that are an integral part of the management system and consistent with accepted good practice including this GPG.
- The MOC arrangements reference the Nuclear Baseline and include a process for updating the Nuclear Baseline on a regular basis.
- The MOC arrangements apply to all aspects of the licensee's activities, including changes at Board or Executive team level, that have the potential to affect nuclear safety.
- The MOC process has clear ownership and management, that records are maintained and there are clear governance arrangements in place.
- The roles and responsibilities for implementing the MOC process are clearly defined and those involved in the MOC process have an appropriate level of authority and are trained and assessed as being SQEP.
- That Senior Management (including Board and/or Executive) take responsibility for the MOC process and receive periodic updates on the status of organisational changes and the implementation of the arrangements.
- The Board and/or Executive are involved in assessing the impacts of significant changes and provide strategic oversight of significant changes.
- The Board/Executive actively use the MOC arrangements and support the MOC process by communicating to the workforce the importance of having and following a robust change process.
- The MOC process is being adhered to and changes are being completed in a timely manner.
- All change proposals are logged in a change register and records are maintained on key decisions associated with significant changes.
- Periodic reviews consider the effectiveness of the MOC arrangements and the changes that have been implemented.
- The MOC process is subject to the licensee's independent review and audit arrangements.

5.3 The MOC Process

179 The diagram below outlines the steps in a MOC process. There may be iteration between the different steps, especially during the initial steps when the change is being defined, options considered, stakeholders engaged and the approach to managing the change agreed. The following sections outline the activities that take place in each of the steps. As soon as a potential change is identified its potential impact on the Nuclear Baseline should be considered and the need for a Management of Organisational Change Case determined.

Figure 2: Management of Organisational Change Process



5.4 Identify Potential Change

180 Change is an essential part of business improvement which prevents the organisation becoming complacent and stimulates development. The MOC process begins with recognition of drivers for change to nuclear capability or the organisational structure, whether due to changes in life cycle, internal aspiration to improve or external factors such as stakeholder requirements, market conditions or legislation.

181 It is important to identify why there is a need for change and what the change is aiming to achieve. Sometimes organisations can jump to proposed solutions before considering what they are trying to achieve and the potential options to achieve it. Clearly articulating why change is needed is also important for staff and stakeholder engagement. Some licensees require the reasons for change and what the change is trying to achieve to be outlined as part of the MOC process.

5.4.1 Initial Categorisation

182 All proposed organisational changes, irrespective of the extent of the change, should be subject to an initial assessment and consideration of whether the change could potentially impact on nuclear safety and therefore a Management of Organisational Change Case is needed.

183 Note: The default assumption should be that all proposed organisational changes have the potential to impact on nuclear safety unless it can be justified otherwise.

184 An initial consideration of the categorisation of the change should be performed and this provisional categorisation (i.e. indicative risk rating) should be used to inform the MOC approach that will be followed.

185 If the change only has the potential to have trivial impacts on nuclear safety then the full rigour of a comprehensive MOC case may not be required.

186 Some examples of when the MOC process may not be needed are:

- Routine ‘like–for–like’ personnel changes i.e. when replacing one post or role holder with another post or role holder, where there is no detrimental impact on specific baseline requirements or competency standards/SQEP requirements. For this level of change, assurance of competency will be managed in accordance with local training and competency arrangements.
- Short term absences or vacancies (i.e. where interim resourcing arrangements are in place and being managed and monitored). ONR suggests that greater than 4 weeks classes as a longer–term absence, see NS–TAST–GD–065, 2025.

187 Organisational changes that are considered to have no implications on nuclear safety should progress in accordance with routine HR processes and guidelines as advised by local specialists.

5.4.2 Agree a MOC Strategy Proportionate to the Change

188 Early advice should be sought from appropriate SQEP resource on the application of the MOC process. If a MOC assessment is required, then consideration should be given to the strategy and approach for managing and controlling its application (e.g. timescales, phases, hold–points, potential risks, initial categorisation, stakeholder engagement and communication, governance routes etc.). This will provide an early indication of the level of risk, effort and resource required if the change is to be implemented. Simultaneous changes will require special consideration when undertaking the risk assessment. If the decision is taken to proceed then it is good practice to include the justification and reasoning for the change, perceived benefits, options considered and rationale for the option selected in the MOC assessment.

189 Some organisational changes are more complex because:

- The change impacts different aspects of the organisation and/or multiple departments.
- The scale of the change and/or the potential impacts are significant.
- There is uncertainty regarding the final end–state of the change.
- It is going to take a long time to implement the change and/or the change needs to be implemented in stages or phases.
- There are a series of safety–significant changes scheduled over a period of time.
- The change interacts with ongoing changes and creates significant cumulative impacts.

190 The regulators expect licensees or Authorisees to proactively discuss significant, large-scale, complex changes with them at an early stage. This allows the licensee/Authorisee to share its intentions with the regulators and for them to provide advice and guidance, as appropriate, understand the business drivers and to schedule and prioritise their own resources as appropriate

191 In these cases an 'Organisational Change Strategy Paper' (or 'Paper of Principles') and/or 'Overarching Organisational Change Proposal' may be required. These are used to provide a high–level overview and assessment of the change(s) and set out an appropriate strategy and approach for managing, governing and controlling the overall scope of the change(s) and the cumulative impact on nuclear safety and the Nuclear Baseline. These papers ban provide useful methods to communicate with the regulators, Nuclear Safety Committees and Board.

192 If required, these high–level overarching documents should be supported by individual, and more detailed, MOC assessments.

193 Making a phased change can also enable the Nuclear Baseline to be reviewed on a regular basis and updated so it is aligned with what is happening 'on the ground', rather than waiting until the end of a large change to update it. Appendix D outlines the different elements/activities that can make up the different papers that can be developed as part of large or complex MOCs. Each of the papers is written at a different level of detail and it is not necessary to produce several types of paper, one may be sufficient on its own as long as it sets out clearly the trajectory to the end point of the change, the way it will be split up into MOCs, and any risks which might arise from the totality rather than the individual, subsidiary MOCs. The purpose of these documents should be clarity of the intent of the change, the associated risks, and how they will be mitigated through effective local and corporate actions in implementation plans, and appropriate Hold Points.

194 The MOC process should govern the registration, initial categorisation, assessment, final categorisation, governance, approval or endorsement and post–implementation review of any proposed change to the organisational structure or resources that have the potential to impact nuclear safety. The routine process steps set out in the following paragraphs may not be suitable for application to large–scale, novel or complex changes. The licensee should retain the ability to adapt the process where appropriate.

195 The following provides examples of when the nuclear safety aspects may be considered through the MOC process, proportionate to their potential impact:

- Sale, acquisition or merger of any part of the organisation that could impact on licensee activities.
- Large–scale downsizing or outsourcing of capabilities from the licensee organisation, whether or not baseline posts or roles, that could affect the ability to undertake licensee activities in a safe and controlled manner.
- Long–term shutdown and/or decommissioning of licensee facilities or work areas.
- Permanent changes to, or having an impact on, Nuclear Baseline posts or roles.
- Changes that could impact on emergency response arrangements and capabilities that support licence or permit activities.
- Changes to governance structures and arrangements.
- New projects (i.e. construction, commissioning, decommissioning and demolition) that require new or additional posts, roles or processes.

- New initiatives that could significantly increase the scope and/or workload of operational facilities, functions, departments and individuals (e.g. growth/expansion, plant life extension, upsizing, change of operations, introduction of new product, changes to shift patterns and/or other working practices, implementation of IT systems etc.).
- New programmes, processes, systems, IT and ways of working etc. that introduce changes to requirements, capabilities, roles, responsibilities, training and/or competence requirements for posts and roles.
- Changes resulting in transfer of accountabilities, responsibilities and duties of posts and roles.
- Changes to IC or DA capabilities or arrangements.
- Long–term vacancies (e.g. sickness, maternity leave, secondments, career breaks etc. for key roles) that have an impact on posts, roles or arrangements.

196 Questions to consider include:

- How long will the arrangements be in place?
- Is the change only affecting routine work?
- How critical is the post/role to the delivery of nuclear safety.

5.5 Analyse the Change Request

5.5.1 Initial Consultation and Engagement

197 Once the requirement for organisational change has been identified and understood, it is good practice to initiate initial consultation between those accountable for the area proposing the change and other relevant stakeholders (including HR, organisational change specialists, safety representatives, internal and external regulators and any key customers as appropriate). The aim of this engagement is to discuss the rationale and suitability of the proposed change, identify and agree appropriate options and the strategy to deliver its objectives and to enable early consideration of any potential impacts on nuclear safety and enablers or mitigations at a high level. A balance needs to be achieved between the need to follow the MOC process, HR processes and staff consultation and regulatory requirements. These different processes have slightly different requirements and need to be coordinated and managed carefully to ensure that the staff affected are treated appropriately.

198 Recognising that change can be unsettling, further consultation and discussion with other stakeholders who may be affected by the change (including staff at all levels) should be undertaken. Those affected by the change should be engaged at the earliest opportunity to ensure timely input at this preliminary stage of the organisational change process and to achieve buy–in for the change. This level of engagement can take considerable time and effort and should not be underestimated.

Key point – Stakeholders at all levels should be actively engaged at the earliest opportunity and throughout all parts of the organisational change process.

5.5.2 Establish the Scope of the Change

199 Early consideration should be given to the scope and complexity of the proposed change, including how it will affect the number and type of baseline roles, to identify any potential impacts on other parts of the licensee organisation as a consequence of the change. This will also enable better understanding of possible interactions and conflicts with other organisational changes that are being implemented or proposed and any associated risks with managing the transition.

200 The resilience and robustness of the organisation, given that other changes may have happened or be happening, may also be a factor in the timing and scope of the change. Change fatigue can have a detrimental impact on safety, security and environmental performance as well as impacting staff health and wellbeing.

5.5.3 Optioneering

201 In many cases, it may not be necessary to introduce extensive wholesale change to existing structures, resources, roles and/or responsibilities and it is likely that a number of alternative options will be available to address the business need and to realise any associated benefits. Organisations do not always undertake a structured consideration of the options available to achieve their change. It is good practice to consider a range of options and compare them to determine which is most suitable to achieve the organisation's goals. The following questions could be considered when deciding on the appropriate option and strategy to deliver the proposed change:

Why do we need to change?

- What problem are we trying to address and/or what is the desired outcome and what do we want to achieve by changing?
- Why is change necessary?
- What are the consequences to the business of not changing?

What are the options?

- Is organisational change the only solution to address the issue?
- What are the available options, and which one offers the simplest and most efficient and effective way to achieve the desired outcome(s)?
- Are there potential nuclear safety implications of the options being considered?

What are the potential impacts?

- Who or what might be affected by the change and who should be consulted (internally and externally)?
- What systems are impacted?

202 Both qualitative and quantitative approaches to optioneering may be necessary. There are a range of techniques that can be used to compare options including SWOT analysis (Strengths, Weaknesses, Opportunities and Threats). Consideration can also be given to how well the options meet the change drivers and their safety, cost and time implications to identify which would be most suitable.

Key point – The MOC approach and governance should be proportionate to the risks associated with the change and its potential impact on roles affecting nuclear safety. For complex, compound changes there should be an overarching change proposal setting out the means of controlling risks.

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5.5.4 Self Assessment

203 Gather and review evidence to demonstrate:

- That there is early consideration of the scope of the change, how it will affect the number and type of baseline roles and an initial categorisation assessment has been completed to inform the MOC approach taken.
- That initial consultation and engagement is taking place between those responsible for changes and relevant stakeholders.
- That the MOC process is being applied proportionately and that complex changes are being managed appropriately.
- The Board/Executive is aware of the need to discuss more significant, large–scale, complex changes with ONR at an early stage.
- Where multiple changes coincide or form part of a larger plan, these are managed together; avoiding 'salami slicing' and ensuring cumulative effects are considered.
- That suitable options have been considered for each change and the preferred option is appropriately justified.
- Communication mechanisms are in place to communicate the reasons for, and progress with, implementation of significant changes to the workforce on a regular basis.

5.6 Plan the Change

5.6.1 Risk Assessment and Justification

204 In identifying potential risks, the originator of the assessment should involve all appropriate stakeholders. The risk assessment needs to:

- Consider risks and consequences should the change be ill conceived or poorly implemented (few organisational changes go 100% to plan).
- Consider existing baseline vulnerabilities and how this change may affect them.
- Consider both the long and short–term risks.
- Consider risks to different stakeholder communities, e.g. managers, supervisors etc.
- Consider the change itself and its implementation.
- Consider the risks associated with introducing changes in different phases.
- Consider any interaction with other ongoing changes and any cumulative and/or cross cutting risks that may arise**.**
- State how the identified risks are to be managed through 'enablers' (to prevent the risk materialising) and countermeasures, contingency plans and/or actions (to mitigate the consequences).
- Where there are multiple changes, whether part of an overarching plan or merely coinciding, consider the overall cumulative impact.

205 The types of risk which may need to be considered include:

Structure

- Provision of funding/resources.
- Organisation design, e.g. number of layers and spans of control.
- Governance arrangements.
- Control and supervision arrangements.

Accountability

- Clarity of accountability and authority.
- Use of consistent post/role titles.
- Roles and responsibilities.
- Potential conflict between roles and priorities.

Resources

- Method of resourcing, e.g. replacing licensee staff with service providers.
- The number and retention of SQEP resources.
- Maintenance of core capability.
- Availability, e.g. location and shift changes.
- Competence levels, including the need to review competence requirements for changing work methods/processes and any associated need for staff training.
- Resources to implement the change.
- Staff turnover, gaps in the structure, e.g. vacancies.
- Resources and competences needed for safe operation/shutdown/ fault recovery of the plant, system or equipment.
- Technical and operational supporting resource.
- Effects of multi–skilling.
- Vulnerability e.g. singleton or scarce posts or expertise. Will this impact existing Nuclear Baseline vulnerabilities or create new ones.
- Increased dependence upon service providers and/or contractors.
- Retention of Intelligent Customer capability.
- Corporate memory, including loss of critical or historical knowledge.
- Resources and competence required for nuclear emergency response.
- Impact on the ability to operate in compliance with the limitations and conditions of the Waste Management Licences.
- Impact on the ability to operate in compliance with Environment Legislation and permits.

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- Impact on the arrangements to implement the nuclear site Licence Conditions, environmental permits and any other regulatory requirements.
- Compliance arrangements, e.g. will the transfer of role holders to another department leave a gap?
- Would revision to procedures or instructions be needed to reflect the change?
- Management of service providers' arrangements.
- The impact on resource demands of changing procedures or instructions.
- Will important communication and working relationships be affected?
- Changes to the arrangements for Safety Representatives.

People factors

- Safety culture and behaviour, for example potential changes to motivation, prioritisation, morale or team working.
- Networks and interfaces.
- Workload and stress.
- Change fatigue.

206 Licensees use different methods to conduct their risk assessments and the level of detail can vary too. Some have forms that contain a series of questions about the risks that could be associated with a change. MOC owners have to complete the questions to determine the risks that may be associated with their change. Other organisations list the potential risks and ask owners to consider each of them. Some licensees are very explicit about the factors that need to be considered in risk assessments, others are less prescriptive, but the wording of the risk assessment procedures indicate the sorts of risks that should be considered.

207 It has been observed that people factors often have the biggest impact on how staff react to and embrace any changes. It is beneficial when implementing changes to consider the potential people impacts carefully and involve a range of staff in those discussions to ensure that the risks are understood and mitigation is put in place. Some licensees consider whether the time between initial staff awareness of the change and the change being fully implemented could have a negative impact on performance, as changes with long implementation times can negatively impact staff morale. If this is the case maintaining good lines of communication during such periods becomes even more important.

208 A model that can be used to consider the impact on staff is the SCARF model[23], this enables assessment of how a change impacts on:

- **Status**: How staff see themselves and how others see them, how important they feel.
- **Certainty**: How confident staff are about the future and their role.
- **Autonomy**: How much control staff perceive they have over their work and career.
- **Relatedness**: How connected staff feel to others, how changes affect their relationships.
- **Fairness**: How reasonable staff feel decisions that affected them have been and how they are being treated in relation to others.

209 Some licensees consider additional risk factors, some:

- Explicitly name the licence conditions, environmental legislation and permits that should be considered when evaluating risk so the potential impact of the change on the organisation's ability to comply with requirements is assessed.
- Consider if the change may impact on the ability to comply with company law and any impacts on occupational health.
- Consider issues relating to property including access, assets, records and the site boundary.
- Consider whether the changes could affect safety cases and other documentation such as Operating Instructions and/or the integrated management system.

210 Some licensees use Hazard and Operability studies (HAZOP) or Hazard Identification (HAZID) assessments[24] to consider the potential risks associated with High Category changes or when the change is complicated or could impact a range of departments. The process involves a structured brainstorming exercise with representatives from the main affected stakeholders and chaired by an independent chairperson. The impact of the change on stakeholders (all affected parties in the change) is explicitly considered in the assessment, recognising that different stakeholders will be affected differently by the change and this needs to be considered. The HAZOP Guidance documents contain a list of keywords that should be considered as part of the assessment with a sentence about what should be considered in relation to it. The key words cover the risk categories outlined above. Templates for capturing the outputs of the discussion ensure the risks, their cause, consequences and mitigation are captured.

211 The impact of the unmitigated risks should be considered initially and then actions should be developed to mitigate the risks. The actions should be set out in the change implementation plan and some licensees load them into action trackers so they can be monitored.

[23] The SCARF Model was created by David Rock in 2008, D. Rock, 'SCARF: A Brain-Based Model for Collaborating With and Influencing Others,' *Neuroleadership Journal*, 1, 1-9, 2008.
[24] HAZOP/HAZID assessments enable a structured and systematic examination of a complex system, or change in order to identify hazards to personnel, equipment or the environment and operability problems.

212 Some licensees provide forms to be completed that try to ensure that mitigation is put in place to address each risk that is identified. An example is provided below.

Table 3: Example Risk Assessment and Mitigation Plan

Identified risks *(risks resulting from the change being ill conceived or poorly implemented)*	**Consequences**	**Proposed preventative measures or mitigation**	**Evidence that preventative measures have been implemented**
Staff fail to understand advantages of the change	Poor morale leads to loss of key staff and/or decrease in safety performance	Series of presentations to staff and 1:1s explaining the reasons etc for the change	Meetings in diaries, feedback recorded and acted upon

213 Some licensees set performance indicators to monitor whether the mitigations are working (for example, safety performance indicators and staff turnover rate). It is important that the risks associated with a change, especially a change that takes time to implement, are reviewed on a regular basis to ensure that the mitigations are working and that no new risks have arisen as the implementation has progressed that require additional mitigations.

214 If the change has the potential to impact staff workloads then it is good practice to conduct workload assessments of those staff impacted as part of the mitigation actions.

5.6.2 Categorise the Change

215 All changes (including temporary ones) that may have a potential impact on nuclear safety should be categorised in relation to the unmitigated risks arising from the change should it be ill conceived or poorly implemented. Before submission of the MOC the categorisation should be confirmed by an independent SQEP to ensure the appropriate level of scrutiny and approval.

Key point – All changes (including temporary changes) that may have a potential impact on nuclear safety should be categorised in relation to the unmitigated risks arising from the change should it be ill conceived and/or poorly implemented.

216 Initial categorisation of the change is beneficial to the author / sponsor in establishing the MOC approval expectations including timelines, required supporting documentation, potential stakeholder engagement and planned committee review e.g. MOC Committee and/or Nuclear Safety Committee.

217 The MOC assessment for organisational change with a potential impact on nuclear safety must be formally approved before it is implemented[25]. Management arrangements should therefore enable low–category MOC submissions to be produced and independently approved promptly, with minimum bureaucracy, in the interests of continuing with normal business.

218 LC36 requires changes to be categorised according to their nuclear safety significance but does not mandate a mechanism by which licensees should do this. It is common practice within the UK nuclear industry to follow a similar approach to the example below. Some organisations use the descriptors, as shown in Table 4, others give a numerical score and others used categories A to D. For changes that are borderline between categories ONR and DNSR expect the licensee to take a conservative position and consider the change at the higher level.

[25] Note this may not be possible if the change involves someone leaving the organisation, if they have a short notice period.

219 For those changes requiring regulator agreement or scrutiny it is important to engage with the regulators in a timely manner to enable early input to the changes. Guidance on this is set out in TAG 048.

Table 4: Example of Categorisation of Changes

Category	Definition	Level of scrutiny	Approval level
Major effect	Change with a major nuclear safety impact. This includes: ▪ Large scale downsizing or outsourcing of a nuclear safety significant function. ▪ Change that affects the legal basis of the licence.	▪ Independent assessment by SQEP. ▪ Relevant Committee for endorsement. ▪ Regulator for agreement.	Licensee/ Director/ Board member / Chair of relevant committee
Significant effect	Change with a significant nuclear safety impact. This includes: ▪ Wide ranging change resulting in significant transfer of responsibilities and accountabilities. ▪ Changes that affect a whole directorate or large groups of staff including size, shape and function of the group (this includes addition or reduction of core capability)	▪ Independent assessment by SQEP. ▪ Relevant Committee for review. ▪ Regulator scrutiny.	Functional director / Chair of relevant committee
Minor effect	Change with a minor nuclear safety impact. This includes: ▪ Change within a Business Unit/Directorate with nuclear safety responsibilities. ▪ Change that has a minor impact on the company's emergency response organisation.	▪ Independent review by SQEP. ▪ Relevant committee for review.	Sponsor / Chair of relevant committee
Insignificant effect	Change with negligible nuclear safety impact: ▪ Change in a function/ department/individual post with little or no impact on nuclear safety.	▪ Line manager or MOC co–ordinator, or other nominee. ▪ Independent review of categorisation	Line manager / Head of Function
Below Scale	Change that that will not have the potential to impact nuclear safety	▪ Line Manager, or other nominee	Line Manager, or other nominee

5.6.3 Prepare an Implementation Plan

220 The sponsor for the change should champion it from start to finish ensuring due process is properly executed with sufficient SQEP resources allocated. This should result in greater efficiency and less bureaucracy.

221 Key committee dates and relevant stakeholders should be identified and engaged throughout the MOC production and approval. This should include trade unions, where applicable, and other impacted areas of the business.

222 Changes should not be 'salami–sliced' into smaller units without careful consideration of the consequences on overall nuclear safety. This is because several minor changes might combine to produce a major impact. This does not preclude the phasing of large–scale changes by producing an overarching change proposal, supported by subsequent more detailed proposals.

223 The cumulative effect of other smaller changes should be considered as part of the MOC preparation. Although not 'salami–slicing' other changes may have an impact on the overall safety especially on human behaviour and the Nuclear Baseline.

224 An overarching change proposal should set out the end vision, phases and hold points, governance links and dependencies between different aspects of the change and arrangements for cumulative impact assessment.

Key point – All changes should be assessed and approved in advance of being implemented and not 'salami–sliced' into smaller units.

225 There should be a golden thread from the proposed change and its scale and complexity to the documents produced about the change and the governance, oversight and approval route required. It is good practice for the MOC submission (with reference to the Nuclear Baseline) to include:

- A description of the current situation compared to the proposed with clear start and end points. Including organisational charts pre and post change can help.
- Reasons and justification for the change, including the desired benefits.
- Discussion on optioneering, i.e. options considered, option selected and rationale for selection based on desired benefits.
- Categorisation.
- Proposed criteria by which success will be measured.
- Indication of which Nuclear Baseline roles will be impacted (e.g. any changes in roles and responsibilities or scope, any increases or decreases in the number of Nuclear Baseline roles).
- Assessment of potential risks.
- Potential interaction with other changes.
- The proposed preventive measure or mitigation for the identified risks.
- Implementation plans, including necessary enabling actions, preventive measures and means of mitigation to address the risks; and a potential exit strategy and/or consideration of how the change could be reversed if required.
- Communication and staff engagement plans.
- Monitoring and review requirements.

226 Implementation plans can be stand alone documents or included in the MOC assessment. They should include identification of pre–change actions (activities that must be achieved prior to implementation) and post–change actions (activities that can be conducted during or following implementation). Where deemed necessary, 'hold points' can be utilised to check a change is still on track prior to entering the next phase. 'Shadow working' periods and pilot studies have also been deployed as a tool to test methods of working, e.g. effective interfaces prior to full implementation.

227 Some organisations have electronic systems to store MOC documents others use their document management systems. It is important to ensure that MOC documents are saved and maintained for a period of time after changes have been implemented, as a record of decisions made. Access to MOC documents may need to be restricted while changes are being developed and implemented to ensure confidentiality is maintained and to align with HR requirements.

228 All proposed actions should utilise the SMART (Specific, Measurable, Achievable, Realistic, Timely) principle with the proposed action and target date agreed with the actionee.

229 Implementation plans typically include mitigation to address risks for example:

- Conducting handovers where individuals change post/role.
- Review and completion of training.
- Completion of communication plans (refer to guidance below).
- Arrangements to monitor the effect of the change including any broader impacts.
- Review and update arrangements prior to close out.
- Contingency planning.
- Completion of administrative update forms such as staff structure data (position management), asset ownership, training records, document owner and review data.
- Timing and requirements for post–implementation review, feedback and close–out.
- Avoiding unduly lengthy periods of uncertainty in implementing the change.

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5.6.4 Prepare a Communications and Engagement Plan

230 Internal and external stakeholders should have been identified during the initial consultation phase, but should be reviewed in light of the risks that have been identified. Stakeholders might include 'blue–light' services, local authorities, local liaison committees and trade unions etc. The SCARF Model (see paragraph 208) can be used to consider the impact on stakeholders and therefore who should be engaged and how.

231 The change needs to be understood and 'bought into' by staff and other stakeholders rather than aggressively 'sold'. It is important to consider how some messages may be received and, where necessary, after all views have been considered, lead people through any early negativity as quickly as possible. This will have a positive impact on the change curve from a human behaviour point of view.

232 When thinking about what to communicate and when it is useful to consider:

- What does the audience want to know?
- What does the audience need to know?
- What can we tell them?
- When will we be able to tell them more?
- How do we want the audience to feel after receiving the communication?
- What do we want the audience to do after receiving the communication?

233 Occasionally political and legal requirements may limit what and when information may be communicated however, even in these cases there should be strong adherence to the change control process.

234 Some organisations use the 5W/H model to consider what information should be communicated (Who, What, When, Where, Why and How). Where a communication plan would be useful, consider the following questions:

- Who will be impacted by the change?
- What is the goal of the change, what is it trying to achieve?
- What other changes does this change relate to?
- What is the value/benefit to the organisation/function/individual of the change?
- When will the change take place, is there a timeline for the change?
- Where is the change occurring? Site, division, office etc.
- Why is the change being made?
- How will staff be affected by the change?
- How have staff views been considered and responded to during decision making?
- How will concerns be captured, considered and as appropriate acted upon?
- How will communication be sustained for the duration of the change?

235 Practical issues to consider include:

- Communication will probably be iterative as the change messages can vary over time as assessed/determined via ongoing communication and engagement.
- Engagement needs to be aligned with the formal HR processes and procedures and any formal staff consultation that is required.
- Have all audiences and their key issues been identified?
- Has the appropriate level of consultation been identified with the people likely to be affected by the change?
- What involvement is needed from senior management in communicating the change?
- Has a mechanism for feedback to/from senior management been established?
- Is the communication timely?

5.6.5 Establish Performance Measurement and Performance Indicators

236 The effectiveness of the change should be monitored and reviewed through (where appropriate) the use of performance indicators.

237 Both leading and lagging performance indicators should be considered. Paragraph 133 outlines the sorts of indicators that can be used.

238 These metrics may be used before, during and after the change to understand the impact. They should also form part of the Post Implementation Review.

5.6.6 Agree Governance (Hold points etc)

239 The implementation of organisational change should follow a change control process where the rigour of the control is proportionate to the category of the change. Senior managers often strive for fast timescales when driving organisational changes and in some cases deadlines can be unrealistic. Undue haste can lead to poor design and implementation and should be challenged, however, changes that are being implemented very slowly can also introduce additional stress/workload issues to staff impacted by the change.

240 The management of change may have a number of pre–requisites or hold points that need completing before the MOC can be implemented. This may involve additional committee or board agreement to commence, readiness reviews or hold point panels. Hold points can also be established at key points in the change implementation plan.

241 Where additional governance or hold points have been identified prior to implementation these should be completed before implementation progresses to the next stage. It is good practice to set hold points at key points during the change and to ensure that there is clear evidence that actions have been completed and that the change is progressing well before the next stage is allowed to start. Hold points are also a good opportunity to review the risks identified and consider if they have materialised and whether the mitigation is working. Performance indicators can also be reviewed at hold points to see if the change is having a negative impact on performance.

5.6.7 Confirm Readiness to Proceed

242 The Change Sponsor should work with the person managing the change to ensure that all the prerequisites have been completed and that the change is ready to implement. This could include arranging peer challenge to check the readiness. In some organisations the change sponsor needs to authorise implementation of the change. For lower category changes the Sponsor's approval may be all that is required to enable implementation, but for higher category changes there may be a more formal approval process.

5.6.8 Self Assessment

243 Gather and review evidence to demonstrate that:

- Structured risk assessments are being undertaken that consider the full range of potential risks, both from the change itself and its implementation, any cumulative risks caused by related changes, and that mitigation is being put in place.
- The quality of the risk assessments is checked and challenged.
- An appropriate and understandable categorisation methodology is in place and being used consistently across the organisation.
- Arrangements include the need to engage with the regulators about higher category changes.
- Changes are being categorised appropriately and that the categorisation is checked and challenged.
- Implementation plans are being developed that include actions to mitigate and monitor the risks.
- Communications and engagement plans are being developed and implemented.
- Performance measures and/or indicators are being identified along with plans to monitor them and implement actions to mitigate impacts if needed.

- That there are arrangements to control the implementation of approved changes, including the use, as appropriate, of hold points.
- Checks are in place to ensure changes are not being implemented until all the prerequisite actions have been completed and the change is ready to implement.
- Changes are not allowed to progress past hold points which have been set during the planning unless there is clear evidence that actions have been completed, risks are being managed, there has been no significant negative impact on performance indicators and the change is progressing well.

5.7 Approval Process

5.7.1 Independent Assessment / Peer Challenge

244 All management of change proposals should be subject to some degree of independent oversight. The level of scrutiny should depend on the category of the proposed change (see Table 4). Many licensees find it helpful to have a Management of Change Committee that provides oversight and decision making.

245 Use of a Management of Change Committee, screening meeting or similar can help steer the assessment, provide useful advice and/or a peer challenge that can identify consequences, interfaces and risks that may not be evident to the author and sponsor of the change.

246 Higher category changes should be subject to full licensee due process which may include independent assessment and Nuclear Safety Committee review, followed by submission to the regulators for notification or agreement.

247 Lower category changes can be processed without necessarily being submitted to a safety committee. Non–committee approval removes a large resource overhead given the considerable number of small organisational changes likely to occur in the running of a licensed site, however there should still be some form of independent review. It is also good practice for a management of change or other safety committee to conduct retrospective reviews of the totality of organisational changes to address the cumulative effect of changes.

248 Some licensees consider conventional and/or nuclear safety, security, safeguards and environmental protection when approving management of change cases which may involve additional assessments such as Radioactive Waste Advisor (RWA) assessments.

249 It can be beneficial to obtain peer reviews of management of organisational change assessments either from people within the licensee organisation who have experience of doing assessments, but are not involved in the current change, and/or from peers in other licensee organisations. Peer reviews can provide independent insight into the change and the potential risks associated with it.

250 Lack of awareness of the MOC process and how it helps to ensure the safe operation of an organisation and its facilities has often led to the MOC process not being followed when organisational changes are being considered and implemented. It is essential that senior managers understand their responsibilities in this regard. Experience shows there are still many retrospective MOCs undertaken as senior managers do not comply with the MOC arrangements because of a lack of understanding of the importance of the process and their role within it.

251 It is important to ensure that those conducting the MOC assessments and those involved in the review and approval process are SQEP to do so. Several licensees have introduced tiered training programmes that provide employees with different levels of awareness and training about the MOC process, its aims and objectives and key aspects that need to be taken into account in conducting assessments. Ensuring staff are aware of the MOC process and their role within it is key to its successful implementation.

5.7.2 Approval to Proceed

252 Notwithstanding the pre–requisites or hold points detailed above there may need to be an additional approval 'to proceed' to implementation of the change once the MOC is approved.

253 Confirmation may be required of the readiness to implement including:

- The MOC is approved on the relevant document system.
- All comments have been resolved and updated in the MOC.
- All items that need to be completed before implementation have been completed.
- All stakeholders have been engaged.
- An appropriate implementation and communication plan is in place.
- A post implementation review is planned where appropriate.

5.7.3 Self Assessment

254 Gather and review evidence to demonstrate that:

- Proportionate independent scrutiny and/or peer challenge is taking place prior to the implementation of changes.
- Proportionate governance is being followed to approve changes for implementation.
- Changes are only being implemented when all the prerequisites have been completed.

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5.8 Implementation and Review

5.8.1 Implement the Change (Monitor Performance Measures, Risks and Mitigation)

255 The sponsor of the change should make adequate arrangements to monitor the safe implementation of the proposed change taking appropriate corrective action where required to mitigate risk.

256 As defined by the implementation plan the change should be monitored against identified risks and success criteria, with planned reviews as appropriate. This should include speaking to affected parties and stakeholders.

257 Governance may be in place to monitor the implementation and performance measures which will require regular updates and the interaction with other emerging changes and any cumulative impacts. This is often the case on the higher category MOCs that result in significant / major change to the business.

258 Monitoring of the implementation of the change should consider:

- Are actions on track for completion?
- Are the mitigation measures managing the risks?
- Is information about the performance measures highlighting any issues that need to be addressed?
- Have any new risks emerged that need to be mitigated?
- Is the communication to stakeholders working effectively?
- Has there been any stakeholder feedback that needs to be addressed?
- Have any other changes arisen that interact with this change and cause cumulative impacts that need to be mitigated?

259 All proposed changes to approved proposals (proposed revisions to action / review completion dates or scope of the change) should be controlled, where necessary with resubmission of part or the entire proposal, to ensure that emergent changes are suitably risk assessed and controlled.

Key Point: Change implementation needs to be monitored to control variance and prevent deviation from the plan. Risks and performance measures should be monitored, so issues can be identified and mitigated quickly.

Key Point – Effective oversight should be in place to assess and control the cumulative effect of multiple changes.

5.8.2 Review and Update the Baseline

260 Once the actions in the MOC have been completed then the Nuclear Baseline must be updated to reflect the changes. If the MOC has been implemented in stages or phases, then the Nuclear Baseline may be updated at the end of a key stage or phase of the change, where applicable. For significant changes it may be necessary to provide the updated Nuclear Baseline to the regulators, it may also be useful to make internal stakeholders aware of the updated Nuclear Baseline and which members of staff now hold Nuclear Baseline roles. Nuclear Baseline roles should not be moved to new incumbents until there is suitable evidence to show that they are SQEP to undertake the baseline role, or any gaps are being managed/mitigated until they are fully SQEP. The time required to obtain the relevant ‘experience’ to fulfil a Nuclear Baseline role should not be underestimated. Changes to the Nuclear Baseline may also trigger the need to update other HR systems and documents. The management system and its content may need to be updated, for example its hierarchy/structure, section and/or process owners as well as processes and procedures. Particular attention should be paid to approval routes within procedures.

5.8.3 Immediate Lessons Learned Review / Implementation Review

261 Once the MOC is implemented the implementation should be reviewed and may consider the following questions:

- Was the change implemented as planned and on schedule or were there deviations from the original plan? Has this been fully addressed?
- Have actions identified as necessary been completed?
- Have the risks anticipated been avoided, and benefits realised?
- Were any new risks identified that were not on the original MOC?
- Were all interdependencies identified?
- Are revised roles and responsibilities clear?
- Have any additional/unexpected issues or training needs been identified?
- Have there been impacts from interactions with other changes, and how have they been managed?
- Have there been impacts on performance indicators?
- Have the performance measures and risk indicators routinely been monitored and communicated to the relevant committees?
- Was the communications plan effective?
- Was there any need to activate contingency plans?
- Has there been any impact on morale that could adversely affect the business or safety culture?
- What lessons can be learned from this change that might be useful for future changes and/or improving the MOC process?

262 For higher category changes (see Table 4) an independent close out review (possibly by the internal assurance function) or post implementation review may be undertaken to provide assurance that the change has been adequately controlled and implemented. ONR expects[26] Senior management to be engaged in the review process and how their leadership and commitment is demonstrated to the workforce. If the review finds the change was ill–conceived and/or poorly implemented, additional actions may be required to address any issues identified. This may prompt a further review, further MOC action or even a reversal of the change.

Key point – Lessons learned from organisational changes should be captured and disseminated appropriately.

5.8.4 Post Implementation Review (Including Lessons Learned Review)

263 To check that changes have been successfully implemented, some licensees undertake post implementation reviews a few months after changes have been implemented, usually within 6 months of the completion of the change. These could be undertaken by the MOC process owner or the organisation's independent assurance function and may vary depending on the categorisation of the change, see Table 4.

264 The reviews look at the effects of the change on the staff involved, concentrating on the positive and negative impacts on people's role, workload, communications and management, as well as reviewing whether the change met the anticipated benefits of the re–organisation. If post implementation reviews are not completed then it is not possible to determine whether changes have been implemented effectively and there is a lack of opportunity for the organisation to learn. Further changes may build on the original change, assuming that it was successful which could increase any negative impacts of the original change and/or exacerbate any mistakes made.

[26] ONR, *Organisational Change*, NS-TAST-GD-048, 2024.

265 The review looks at the potential impacts on managers and their first and second reports. Different options and/or combinations can be used for the reviews including:

- A survey of those affected by the change.
- A group interview/discussion can be held with selected personnel impacted by the change.
- One to one interview with the Project Director or/and Project Manager of the change.
- One to one interviews with direct reports.

266 As there are specific outcomes required from these interviews/discussions a formal structure is used to ensure consistency across all of the interviews. The background to the MOC review and the purpose of the meeting is outlined before running through a series of structured questions which can include:

- In the time leading up to the re–organisation how would you rate the communications regarding the re–organisation? (1 = No communication, 5 = Good communication)
- What communications did you have with management during the re–organisation? Were they effective?
- What, if any, input did you have into the re–organisation and changes to your role?
- What impact, if any, has this change had on your role? (Is your new role clearly defined?)
- What impact, if any, has this change had on your workload? (1 = Much less, 2 = A little less, 3 = Much the same, 4 = A little more, 5 = Much more)
- What positive aspects have come from the change?

267 Some organisations undertake lesson learned or learning from experience (LFE) reviews on the completion of large organisational changes. These can be conducted by a range of people including the MOC process owner or Organisational Learning team and should follow the LFE arrangements in place within the licensee. The LFE review usually involves those who have been responsible for implementing the change as well as those affected by the change. The LFE reviews should consider the performance indicators that were established for the change and any impact on those indicators from implementing the change and how that was managed.

268 Questions that can be considered in LFE reviews include:

- What went well as part of the MOC that we would want to replicate in future?
- What could have been improved?
- What would you do the same in the future because it had a positive impact on the change and its implementation?
- What would you do differently to help to prevent problems?
- How well did the MOC process work? How easy was it to follow?
- What was learned about communications and stakeholder engagement?
- What was learned about working with sponsors and Members of the Executive?
- What was learned about the governance and approval process?
- Did the change have any impact on performance indicators (both positive and negative)?

269 The findings of these reviews should be turned into tangible actions including developments of the MOC processes and procedures which can be completed as part of any annual reviews or regular updates that are undertaken.

5.8.5 Self Assessment

270 Gather and review evidence to demonstrate that:

- Actions associated with changes are being tracked and completed in a timely manner.
- Risks and performance measures are being monitored during the implementation of changes and that additional actions are being implemented to address any negative impacts arising from the changes.
- The Nuclear Baseline is being reviewed and updated so it is in line with the changes that have been implemented.
- Immediate implementation reviews are being conducted to ensure that actions have been completed and lessons can be learned.
- Post implementation reviews are being conducted to evaluate the effectiveness of changes and identify lessons that can be learned.
- The MOC process is being updated in light of the lessons learned.

5.9 Time–based Evaluation and Closure

5.9.1 Formal Closure of the Change

271 A check should be carried out on the close–out of implementation plan actions before the change is considered closed. It is good practice to set a target date for this as part of the implementation plan, and to ensure that arrangements allow for transparency and audit. Formal closure should only occur once there is evidence that all the actions have been completed and all the relevant systems have been updated, including the Nuclear Baseline and any related HR systems. Some licensees do not formally close out changes until the post–implementation review has been completed.

5.9.2 Records Management

272 A register of all organisational changes should be maintained. Relevant changes can then be reviewed when assessing further organisational change; this also enables the totality of change to be reviewed for potential cumulative impacts. The document may also form the basis of performance indicators used to measure, monitor and review the effectiveness of the MOC process itself, as it can show how many MOCs are open and the progress with the implementation of changes. In some organisations the MOCs and the register of the changes are classed as documents that need to be retained for long periods of time (up to 30 years).

5.10 Periodic Review

5.10.1 Periodic Review of the MOC Process

273 It is good practice to do a periodic review of the changes that have occurred to consider the cumulative impacts and whether there are any trends or issues that need to be addressed and whether the planned benefits from changes are being achieved. Some organisations provide a regular (quarterly, six monthly, yearly) summary of all the changes to their Nuclear Safety Committee, so they can reflect of the changes made, their adherence to the MOC process and their success. This can help to ensure LC36 compliance and provide confidence to the Board.

274 It is also good practice to periodically review how the MOC process is working, whether it is achieving its objectives and being followed, this often occurs on at least an annual basis. Each step of the process and its implementation should be considered and any issues with its implementation identified. The results of post–implementation reviews and LFE should be fed into the periodic review. It can also be useful to consider how the MOC process aligns, as far as is reasonably practical, with this GPG and any regulatory good practice. The review should result in tangible actions to address any issues identified e.g. staff training, improvements to the procedure, improved links with other procedures, additional resource to manage the MOC process etc.

275 The reviews should include those who have used the MOC process and/or been impacted by changes managed through the process, as well as reviewing the outcomes of the changes themselves.

276 The review should consider the number of retrospective MOCs done after the change has already made or is being made (i.e. non–compliance and lagging process compliance).

Key Point – Periodic reviews should be conducted to evaluate the effectiveness of the MOC process and compliance with it.

5.10.2 Self assessment

277 Gather and review evidence to demonstrate that:

- Close out reviews are planned and implemented.
- MOCs are being formally completed and closed
- The relevant records are being managed and maintained.
- Periodic reviews of the MOC process and the changes that have been made are being undertaken including consideration of the cumulative impact of changes.

EDF Operations

APPENDIX A: DEFINITIONS

Authorisee	Is the accountable post-holder identified on the Certificate of Nuclear Authorisation, duly Authorised by the head of the Defence Nuclear Safety Regulator (DNSR-Hd) to operate in compliance with the Authorisation Conditions, Further Authorisation Conditions and Transport Condition set out by DNSR in DSA02-DNSR. The role of Authorisee cannot be delegated to any other person, in whole or in part, formally or informally.
Capability	The sum of the knowledge, expertise and capacity of an organisation to achieve its goals.
Contractor	Any organisation or individual person that provides a product or service for a licensee under a commercial contract that is: not in the licensee's direct employment or formally seconded to the licensee, are subject to licensee's Intelligent Customer oversight and are employed by companies external to the licensee.
Competence	The combination of knowledge, qualifications and experience necessary for an individual to perform a specific role competently.
Core Safety Capability	This capability is a subset of the Nuclear Baseline and should reside within the licensee organisation, but does not necessarily require direct employment by the licensee organisation (for example, embedded contractors). Core Safety Capability is the knowledge, experience and resources that the licensee should maintain within its own organisation in order to be able to ensure enduring control and oversight of nuclear safety at all times. The licensee's 'Intelligent Customer' (IC) and 'Design Authority' (DA) functions should form part of the core safety capability.
Design Authority	A defined function within the licensee's organisation with responsibility for establishing, understanding and maintaining the design intent and its safe operating envelope.
Design Intent	The intended use of a piece of equipment or plant.
Embedded contractor	Individuals or members of contractor organisations that are subject to the licensees onboarding and competency processes and are trained and work to the licensees arrangements and established organisational culture. These personnel do not need to be subject to supervision different from that of a normal employee. Embedded Contractors can be part of the core safety capability and can act as an Intelligent Customer.
Environmental Permit	Holder is the operator responsible for operating a regulated facility in accordance with the environmental permit.

Intelligent Customer	The capability of an organisation to understand where and when work is needed; specify what needs to be done; understand and set suitable standards; supervise and control the work; and review, evaluate and accept the work carried out on its behalf; and own the outputs.
Justification	Utilising evidence to demonstrate that relevant requirements are met, e.g. the changes will be beneficial to meet the need or the resources are sufficient.
Licensee	A corporate body in possession of a nuclear site licence granted under the Nuclear Installations Act 1965. For the purposes of this GPG the term also includes the separately defined term 'Authorisee'.
Normal operations	The range of normal activities undertaken by the business and including preparedness for emergency situations. It should include sufficient margin to allow for leave, sickness, training etc., and may also include an element for succession/ demographic planning dependant on the specific needs of the business.
Nuclear Baseline	Specifies nuclear posts, roles and associated structures that are required to carry out normal operations and the required numbers. It is the means by which the licensee demonstrates that its organisational structure, staffing and competencies are, and remain, suitable and sufficient to manage nuclear safety throughout the full range of the licensee's business. It also provides the foundation from which organisational changes can be assessed in accordance with the licensee's arrangements made under Licence Condition (LC) 36.
Nuclear Baseline post/role	A post or role where an action or inaction by the individual or group undertaking, supervising, managing, defining or directly supporting work which could pose an immediate or latent threat to nuclear safety. The Nuclear Baseline should include all such posts and roles at any level within the organisation which should be determined from the work to be undertaken.
Nuclear Safety	The achievement of proper operating conditions, prevention of accidents and mitigation of accident consequences, resulting in protection of workers, the public and the environment from undue radiation risks.
Operations	Maintenance, examination, inspection, testing and operation of the plant and the treatment, processing, keeping, storing, accumulating or carriage of any radioactive material or radioactive waste. For the purpose of this GPG operations includes decommissioning.
Organisational Baseline	Specifies conventional and nuclear safety, security, safeguards and environmental protection posts, roles and associated structures that are required to carry out normal operations and the required numbers.

Organisational Baseline post/role	A post or role where an action or inaction by the individual or group undertaking, supervising, managing, defining or directly supporting work which could pose an immediate or latent threat to conventional and nuclear safety, security, safeguards and/or environmental protection. The Organisational Baseline should include all such posts and roles at any level within the organisation which should be determined from the work to be undertaken.
Organisational capability	The concept of organisational capability relates to the combination of organisational structures (shape and size), functional specialisms, competence (both individual and collective), resource capacity, processes, management arrangements and systems to conduct defined activities. Organisational capability is defined in the context of multiple factors including the operating lifecycle stage of the facility.
Organisational change	Any change to organisational structure or resources. For the purposes of this GPG this would also include any change which may have an impact upon the organisation's capability.
Organisational Culture	The collective beliefs, values, attitudes and behaviour of an organisation that influence its conduct. (BS ISO 30400:2022)
Outsourcing	The transfer, wholly or in part, of organisational capability from the organisation to an external service provider.
Post	A position identified on an organisational structure.
Role	A specific work activity/responsibility which may wholly or in part contribute to a post or be assigned to an individual.
Safety Culture	The assembly of characteristics and attitudes in organisations and individuals which establishes that, as an overriding priority, protection and safety issues receive the attention warranted by their significance. (https://vocabulary.iaea.org/iaea–safety–glossary.htm)
Service provider	Any person or organisation not in direct employment of the organisation that provides a service to that organisation. This includes contractors.
Utilisation factor	A business planning assumption of the proportion of time that an individual is available to conduct their accountabilities and responsibilities. This factor should take account of factors (such as leave, training and sickness) that reduce the individual's availability to conduct their accountabilities and responsibilities. Note: The utilisation factor is the assumed availability of an individual to conduct all activities. Should the post holder have non–nuclear safety accountabilities and responsibilities, their availability for nuclear safety related activities should be reduced accordingly.

APPENDIX B: EXAMPLES OF BASELINE ROLES

Potential Nuclear Baseline Roles

The following tables include examples of roles that could be included in organisational baselines. These lists are not prescriptive or exhaustive. They provide guidance on the types of roles that should be considered when carrying out a review and have been developed from reviewing regulatory guidance and the baselines that exist within nuclear organisations.

Work category	Examples of roles that may be in a Nuclear Baseline
Undertaking (Hands–on work with radioactive materials)	• Chemists • Control room operators • Emergency responders • Engineering technicians • Glovebox/cell workers • Health physicist • Health physics monitor • Maintainers • Nuclear lift operators • Process workers • Roles undertaking discharge monitoring • Source owner • Transport operators
Defining (Includes policy setting, interpretation, specification)	• Process owners • Specifying arrangements to support standards/policy/ process setting
Directly supporting	• Approved dosimetry service • Assessing / certifying nuclear competence • Criticality advisers • Health physicists • Record keeping • Research and development resources that support the existing nuclear safety capability • Safety case authors • Training providers offering role–specific training within the Nuclear Baseline (if internal or the IC role if outsourced)
Supervising (Includes control and supervision)	• Confined space supervisor • Duly authorised person • Radiation protection supervisor • Safe system of work issuers • Superintending officer for waste disposal • Supply chain management • Team Leaders

Work category	Examples of roles that may be in a Nuclear Baseline
Managing[27] (Includes reviewing, challenging, assuring, oversight, governance and leadership)	• Authorisee / Licensee • Authorisation group chair • Authorised person (electrical) • Building owner • Chemistry services managers • Commissioning managers • Construction managers • Dangerous goods safety advisor/site movement liaison officer • Design authority • Directors (executive and non–executive, role dependant, e.g. HR director) • Emergency planning • Environmental managers • Excavation inspector • Independent inspectors • Independent peer review • Intelligent Customers • Line managers in a relevant post/role • License condition holders • Logistics managers • Manager of tenanted facilities • Management of the contractors carrying out nuclear safety related activities • Members of the site licence company senior team • Members of safety committees, including Chairs • Project managers • Radiation Protection Advisor • Radioactive Waste Advisor (EPR16 and EASR2018)[28] • Radioactive Waste Advisor (IRR17)[29] • Roles that interface or manage the interface with external organisations • Safeguards (Nuclear Materials Accountancy) • Safety case assessors and advisors • Safety case owner • Safety Manager (nuclear) • Security • Senior authorised person (electrical) • Shift managers

In general roles in the following departments or directorates would not be expected to be captured within the Nuclear Baseline unless specific individuals are carrying out nuclear safety specific roles or are responsible for, or contribute to, the fulfilment of licence conditions – finance, commercial, procurement, programmes and general administration/non–nuclear trades.

[27] It is possible that a role in a Head Quarters or other division can impact on the management of work.
[28] *The Environmental Permitting (England and Wales) Regulations*, 2016 and *Environmental Authorisations (Scotland) Regulations*, 2018.
[29] *The Ionising Radiations Regulations*, 2017.

Potential Environmental Baseline Roles

The following table includes examples of potential Environmental Baseline roles.

Work category	Examples of roles that may be in an Environmental Baseline
Undertaking (Hands–on work with radioactive materials)	• Aerial Effluent Co-ordinator • Control room operators • Dangerous Goods Safety Adviser • Emergency responders • Engineering technicians • Environmental Assessor • Environmental Permit condition holders • Environmental Specialists (Radiological) • Environmental Specialists (Non Radiological) • Health physicist • Health physics monitor • Liquid Effluent Co-ordinator • Local Clearance Coordinator • Plant Solid Waste Coordinators • Plutonium Contaminated Materia; Coordinator • Roles undertaking environmental discharge monitoring • Senior Environmental Sustainability Advisor • Site Clearance Coordinator • Source owner • Sustainability appraisal assessors • Transport operators
Defining (Includes policy setting, interpretation, specification)	• Process owners • Specifying arrangements to support standards/policy/ process setting
Directly supporting	• Environmental safety case authors • Research and development resources that support the existing environmental safety capability • Training providers offering role–specific training within the Environmental Baseline (if internal or the IC role if outsourced)

Work category	Examples of roles that may be in an Environmental Baseline
Supervising (Includes control and supervision)	• Appointed Suitably Qualified and Experienced Person (ASQEP) under the Environmental Permitting (England and Wales) Regulations[30] • Duly authorised person • Environmental Co-ordinator • Head of Environment and Sustainability • Supply chain management • Supervising office (waste disposal) • Team leaders
Managing (Includes reviewing, challenging, assuring, oversight, governance and leadership)	• Corporate Radioactive Waste Advisors • Design authority • Directors (executive and non–executive, role dependant, e.g. HR director) • Environmental managers • Environmental / Radiation Manager • Environmental safety case owner • Environmental safety case assessors and advisors • Independent inspectors • Independent peer review • Intelligent Customers • Line managers in a relevant post/role • Manager of tenanted facilities • Management of the contractors carrying out environmental safety related activities • Members of the site licence company senior team • Members of safety committees, including Chairs • Non– radioactive waste advisor • Project managers • Radiation Protection Advisor • Radiological Protection Manager • Radioactive Waste Advisor (EPR16 and EASR2018)[31] • Radioactive Waste Advisor (IRR17)[32] • Roles that interface or manage the interface with external organisations • Safety Manager (environmental) • Shift managers • Waste sentencing

[30] The Environmental Permitting (England and Wales) Regulations 2016.
[31] The Environmental Permitting (England and Wales) Regulations 2016 and *Environmental Authorisations (Scotland) Regulations*, 2018.
[32] The Ionising Radiations Regulations 2017.

Potential Security Baseline Roles

Work category	Examples of roles that may be in a Security Baseline
Undertaking (Hands–on work)	• Area / Access controller • Building controller • Counter Intelligence Officer • Cyber operations manager • Emergency responders • Emergency communications officer • Incident controller • Information security advisor • Information security analyst • Intelligence Analyst • License Condition / Defence Security Conditions Owners • Protective security advisor • Personnel security and aftercare manager • Personnel security coordinator • Reception staff • Security Adviser • Security and safeguards development manager • Security guards • Security Officer • Source owner • Transport operators
Defining (Includes policy setting, interpretation, specification)	• Nuclear security operations lead • Process owners • Protective security operations lead • Security and Safeguards Development lead • Specifying arrangements to support standards/policy/ process setting
Directly supporting	• Export control coordination • Research and development resources that support the existing nuclear security capability • Security liaison officer • Security safety case authors • Training providers offering role–specific training within the Security Baseline (if internal or the IC role if outsourced)
Supervising (Includes control and supervision)	• Chief Information Security Officer • Duly authorised person • Head of Security and resilience • Incident supervisor • Personnel security team leader • Security Manager • Site emergency controller • Superintending officer for waste disposal • Supply chain management • Team leaders

Work category	Examples of roles that may be in a Security Baseline
Managing (Includes reviewing, challenging, assuring, oversight, governance and leadership)	• Authorisation group chair • Building owner • Dangerous goods safety advisor/site movement liaison officer • Design authority • Directors (executive and non–executive, role dependant, e.g. HR director) • Emergency planning • Export control • Independent inspectors • Independent peer review • Intelligent Customers • Line managers in a relevant post/role • Logistics managers • Manager of tenanted facilities • Management of the contractors carrying out nuclear security related activities • Members of the site licence company senior team • Members of security committees, including Chairs • Project managers • Radioactive Waste Advisor • Roles that interface or manage the interface with external organisations • Safeguards (Nuclear Materials Accountancy) • Security case assessors and advisors • Security case owner • Security Manager • Security vetting

Potential Conventional Safety Baseline Roles

Work category	Examples of roles that may be in a Conventional Safety Baseline
Undertaking (Hands–on work)	• Asbestos Co–Ordinator • Appointed Crane Engineer • ATEX[33] Maintenance (E&I) • ATEX Maintenance (Mechanical) • Authorised Person Electrical (LV) • Authorised Person Electrical (HV) • Display Screen Equipment Assessor • Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) Verifier • Fire Watcher • Laser Safety Officer • Maintenance Schedule Owner and Coordination • Manual Handling Assessor • Mechanical Handling (Power Operated Vehicles) • Pendant Crane Operations • Provision and Use of Work Equipment Regulations (PUWER) Assessor • Slinger • Source Owner and Radiochemical Reference Material Administration • Working at Height Rescue
Defining (Includes policy setting, interpretation, specification)	• Approved Dosimetry Service (ADS) Data Entry • Building Owner (Fire Nominated Person) • Confined Space Control, Arrangements and Rescue
Directly Supporting	• Asbestos Coordination • Control of Substances Hazardous to Health (COSHH) Editor • Contract Representative • Control of Major Accident Hazards (COMAH) Assessment • COSHH Risk Assessor • DSEAR Risk Assessor • Fire Risk Assessment • Qualified Person (IRR17)[34] • Radiation Protection Adviser (RPA) Nominee • Temporary Works Coordination
Supervising (Includes control and supervision)	• Confined Space Supervision • Confined Space Work Controller • Dangerous Goods Safety Advice • Excavation Certificate Controller • Lifting Operations Supervisor • Nominated Person (Electrical) • PUWER Lead • Safety Harness Inspector • Safe Systems of Work (SSoW) Isolating Authority (Electrical) • SSoW Isolating Authority (Process) • Radiation Protection Supervisor • Temporary Works Supervision

[33] ATEX is the name commonly given to the two European Directives for controlling explosive atmospheres: Directive 99/92/EC (also known as 'ATEX 137' or the 'ATEX Workplace Directive'). The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) implement the requirements of this Directive in Great Britain (England, Scotland and Wales).
[34] The Ionising Radiations Regulations 2017

Work category	Examples of roles that may be in a Conventional Safety Baseline
Managing (Includes reviewing, challenging, assuring, oversight, governance and leadership)	• Appointed Person (Lifting) • Appointed Person (Asbestos) • Client (Organisation Representative) • Contractor Superintendent (Non–Construction) • Confined Space Permit Issuer • Consigning Management • Dangerous Goods Consignment (Consigning, Packing, Loading & Filling) • Duty Holder Legionella • Excavation Permit Issuer • Hot Works Permit Issuer • Intelligent Customer • Principal Designer (Organisation Representative) • Principal Contractor (Organisation Representative) • Radiation Protection Adviser • Receiving Manager (Non–Construction) • Responsible Person (e.g. ATEX, Confined Space, DSEAR, Laser, Legionella, Working at Height, Roof Access, Permit, Work Permits) • Roof Access Certificate Issuer • Senior Authorised Person Electrical • Safe Systems of Work (SSoW) (e.g. Single Point Accountable, Local Site Authority, Area Authority, Permit Issuer)

APPENDIX C: REGULATORY REFERENCES

International Atomic Energy Agency (IAEA) Guidance

The IAEA sets out general expectations of nuclear licensees in the following 'INSAG' publication:

- *Managing Change in the Nuclear Industry: The Effects on Safety*, INSAG–18 (Managing Change in the Nuclear Industry).

More detailed practical guidance is provided in:

- *Managing Change in Nuclear Utilities*, IAEA–TECDOC–1226 (Managing Change in Nuclear Utilities).

The IAEA expects nuclear operators' management systems to integrate safety, health, environmental, security, quality, human–and–organizational–factor, societal and economic elements. The IAEA notes that management arrangements should be:

- *an integrated set of infrastructural elements necessary to provide the capability for performing a specified function or task. Such elements may include authorities and responsibilities, organization, coordination, personnel, plans, procedures, facilities, equipment, training and contracts.*

UK Legal Requirements

Under the Nuclear Installations Act 1965 (as amended) the Office for Nuclear Regulation issues nuclear site licences. These have standard Licence Conditions – Licence Condition 36 concerns the management of organisational capability. Full details of the standard nuclear site Licence Conditions are found on the ONR website.

Office for Nuclear Regulation (ONR) Guidance

The ONR publishes Safety Assessment Principles to provide its inspectors with a framework for making consistent regulatory judgements on nuclear safety cases:

- *Safety Assessment Principles for Nuclear Facilities*, 2014 Edition, Revision 1, January 2020 (Safety Assessment Principles [SAPs])

ONR also publishes internal technical guidance used by its inspectors on the HSE website:

Technical Assessment Guides (TAGs) – Nuclear Safety (full list) | Office for Nuclear Regulation

Specific guidance relevant to this GPG relating to nuclear safety includes:

NS–INSP–GD–010	Training
NS–INSP–GD–012	Duly Authorised and other suitably qualified and experienced Duly Authorised and other suitably qualified and experienced person
NS–INSP–GD–036	LC36 Organisational Capability
NS–TAST–GD–027	Training and assuring personnel competence
NS–INSP–GD–036	Organisational capability
NS–TAST–GD–048	Organisational change
NS–TAST–GD–049	Licensee core safety and intelligent customer capability
NS–TAST–GD–061	Staffing levels and task organisation
NS–TAST–GD–065	Function and content of the Nuclear Baseline
NS–TAST–GD–072	Function and content of a Safety Management Prospectus

NS–TAST–GD–077	Supply chain management arrangements for the procurement of nuclear safety related items or services
NS–TAST–GD–079	Licensee design authority capability
NS–TAST–GD–080	Nuclear safety advice and independent challenge.

Guidance relating to security produced by the ONR includes:

Security Assessment Principles for the Civil Nuclear Industry, v1, 2002 (Security Assessment Principles [SyAPs]).

CNS–TAST–GD–1.2	Organisational security capability
CNS–TAST–GD–3.1	Identification and analysis of security tasks and roles
CNS–TAST–GD–3.2	Sufficiency and competency of personnel delivering security
CNS–TAST–GD–4.1	Procurement and intelligent customer capability
CNS–TAST–GD–4.3	Oversight of suppliers
CNS–TAST–GD–11.4.6	Managing changes to security standards, procedures and arrangements

See: Technical Assessment Guides (TAGs) – Nuclear security | Office for Nuclear Regulation

Health and Safety Executive (HSE) Guidance

The HSE has published general external guidance for the high hazard industries on organisational change:

- *Organisational Change and Major Accident Hazards,* Chemical Information Sheet CHIS7, HSE Books, 2003 (Organisational Change and Major Accident Hazards)

The HSE has published a research report setting out a methodology for calculating minimum staff requirements in control rooms:

- *Assessing The Safety of Staffing Arrangements for Process Operations in the Chemical and Allied Industries,* Contract Research Report 348/2001, 2001 (CRR348).

HSE and Environment Agency Guidance

The HSE and Environment Agency have joint guidance on the creation of an Integrated Management System (Integrated Management Prospectus for Nuclear Licensed Sites).

- *Guidance Note Radioactive Substance Regulation: Guidance on the Production and Use of An Integrated Management Prospectus, 2008.*

The regulators expect licensable and permissible organisations to have in place robust management arrangements to ensure the proper management of the hazards and risks associated with the nature of the work undertaken on the site. The regulators expect the management system to cover organisational structure, capability and management of organisational change. They expect the management system to describe:

- *How the organisational structure meets the nuclear safety, security and environmental management needs of the business. The structure should reflect current and foreseeable activities and should show how key responsibilities are allocated. We would expect new organisations to plan for and establish a structure based on principles that reflect the full range of activities they intend to perform. Similarly, established organisations should have in place appropriate arrangements for the management of change – both changes in the organisation and in the nature of the work.*
- *How the right structure, resources and competences exist to deliver the nuclear safety, security and environmental protection needs. This should include arrangements to help assess and put in place the structure, resources and competences necessary to ensure an*

organisation continues to be a capable and responsible operator. Organisations that hold Nuclear Site Licences prepare and implement a Nuclear Baseline for nuclear safety. Where possible we would encourage such operators to include environmental capability needs within an integrated Nuclear and Environmental Baseline. Alternatively, organisations may choose to demonstrate this in some other manner e.g. through one document or in a number of documents with a plan to show how they fit together.

- *The organisation's approach to managing change. This should provide a link to the licensee's arrangements for compliance with LC36 and for the maintenance of the Nuclear Baseline. It should also describe arrangements to assess the significance of proposed changes in relation to the RSA93 Authorisation.*

Environment Agency Guidance

All nuclear operators in England, Wales and Scotland have permits issued to them by their national environmental regulator. These permits contain conditions that require the use of "sufficient persons" or "adequate…human resources" and require operators to inform their environment agency about significant organisational changes. The Environment Agency has set out the competence it requires organisations to have to be able to hold an environmental permit including technical, environmental and financial competence:

- *Legal Operator and Competence Requirements: Environmental Permits*, 2019. (Legal Operator and Competence Requirements: Environmental Permits)

The Environment Agency has published management arrangements for nuclear sites that set out guidance aimed at its regulators and support its assessment of environmental management arrangements at nuclear licensed sites. These documents cover what the Environment Agency expects in relation to a range of topics including organisational structures, how staff are trained and managed, how competence and capability is controlled and how contractors are managed.

- *Radioactive Substances Regulations: Management Arrangements for Nuclear Sites*, v2 2010. (Management Arrangements at Nuclear Sites)

The requirements are very similar to those set out in ONR's documentation but focus on environmental capability. Chapter 6 outlines the Environment Agency's expectations in relation to environmental capability, it repeats the encouragement to include environmental capability needs within an integrated Nuclear and Environmental Baseline and sets out the requirements that:

- *An organisation's management arrangements should enable it to develop and maintain the resources and competences needed for sound environmental management.*
- *An organisation will need arrangements to help assess and put in place the structure, resources and competences necessary to ensure they continue to be a capable and responsible operator. This can then form the basis for day to day management and a sound reference point for assessing the impact of changes.*

Chapter 7 sets out the Environment Agency's expectations around managing changes, including changes to organisations and competences. The expectation is that changes are assessed and categorised accordingly and that:

- *Management Arrangements should describe the approach to managing change of the organisation, systems, resources and competences.*
- *There is a process in place for control of changes which have the potential to impact on environmental performance, including (but not limited to):*
    - *Strategic changes to an organisation e.g. ownership, composition of the Board or executive team*
    - *Organisational structure which may affect compliance with the permit*
    - *Capability including resource levels and in–house capability*
    - *Facility, plant and equipment changes*

- *The system has clear guidance for what constitutes a change, how significant the change is and when this needs to be notified.*
- *Significant changes must be notified to the Environment Agency in advance.*

The guidance also sets out the sorts of roles that the Environment Agency believes organisations should consider as part of their Environmental Baseline, these are included in Appendix B.

The Environment Agency has set out management and leadership developed principles (MLDPs).

- Guidance: Management and Leadership for the Environment: Generic Developed Principles, 2024 (Management and Leadership for the Environment)

The principles describe how the Environment Agency expects an operator to manage its business and provide leadership to ensure that the business minimises its impact on people and the environment from the use of radioactive substances. MLDP 3 focuses on capability and what the Environment Agency expects organisations to consider to meet its expectation that:

- *Organisations should have the capability to secure and maintain proper protection of people and the environment.*

Ministry of Defence Requirements

Ministry of Defence requirements relevant to this GPG include:

DSA02-DNSR	Defence Nuclear Safety Regulations of the Defence Nuclear Enterprise.
DSA03-DNSR	Defence Nuclear Safety Regulations of the Defence Nuclear Enterprise – Guidance
JSP-471	Defence Nuclear Accident Response.
JSP-628	Security Regulation of the Defence Nuclear Enterprise.

APPENDIX D: THE CONTENTS OF OVERARCHING MOC PAPERS

Element	Optioneering paper / Business case	Principle papers	Overarching MOC	MOC (Assuming other papers are required)
Ownership of Change	Y at strategic / sponsor level	Y at strategic / responsible Manager level	Y at strategic / responsible Manager level	Y at detail / operational / responsible manager lower level
Clear definition of the problem/ drivers for change/potential safety implications	Y at high level, should flow as golden thread in lower level documentation	Y at high level, should flow as golden thread in lower level documentation	Y at high level, should flow as golden thread in lower level documentation	Y at more detailed level
Interfaces / dependencies/cumulative	Y at strategic level	Y other MOCs across organisation within this group of MOCs	Y other MOCs across organisation within this group of MOCs	Y at local level and within the group of MOCs
Justification for the change	Y high level	Y high level	Y high level	Y lower / local level
What is the vision / What does good look like / end goal /objectives	Y Strategic level	Y Strategic level	Y Strategic level	Y for this element of the change
Options to meet objectives (stakeholder considerations)	Y Strategic level/Organisational	No	Y departmental / directorate	Y local / functional level
Pro and Cons / Risks and Benefits of options	Y Strategic level/Organisational	Indicative risks	Y departmental / directorate	Y local / functional level
Preferred option, scope, Justification	Y Strategic level/Organisational	Y	Y departmental / directorate, including what is not going to change	Y local / functional level
Hold points/phasing	N	Y where relevant	Y across the whole set of changes	Y in the implementation plan for this element of the change
Risk assessment/ cumulative	Sometime seen in strategy paper at high level on chosen option but generally No	Indicative risks	Y high level risks including interfaces, cumulative risks, update if necessary from local MOCs. (Potentially still indicative risks if it precedes the lower level, detailed MOCs)	Y local / functional level
Implementation/responsibilities	Definition of responsible person	Y, high level.	Responsibilities at individual MOC level, assign implementation plan owners	Assign action owners
Communications/engagement	Y at strategic level	Y, May reference development of a Comms strategy	Y to the scope of the whole change	Y to scope of individual MOC
Categorise	N	No	Y Cumulatively across whole change	Y for individual change
Governance /	Y	Y	Y depending on category for whole change	Y depending on category of individual change
Approvals	N	Y	Y	Y
Indicators / Success Criteria	Y at strategic level (success criteria)	When identified yes, may come later through MOC's. Significant (Site wide) changes usually cover this though.	Y success criteria and monitoring of key specific risks from the risk assessment, may need update from local MOCs	Y success criteria and monitoring of key specific risk from risk assessment for individual MOC
Review Learn Improve	N, could be covered as part of overarching MOC	Y	Y across whole change	Y at local level and needs to feed into overarching MOC review
Close out	N, can be done as part of the overarching MOC	Y	Y	Y

APPENDIX E: CONTRIBUTORS

Current Working Group Post Holders

Des Wright	NNL	(Sponsor)
Elizabeth Atherton	NWS	(Chair)
Kitty Robinson	Nuclear Graduate	(Secretary)

Contributing Organisations

AWE (Atomic Weapons Establishment)
Babcock Devonport
BAE Systems
Cyclife
Defence Nuclear Organisation (DNO) Warhead
Defence Nuclear Safety Regulator
EDF Nuclear Operations
EDF Hinkley Point C
Environment Agency
MOD His Majesty's Naval Base Clyde
MOD His Majesty's Naval Base Devonport
IC Nuclear
Sizewell C
Submarine Delivery Agency Nuclear Propulsion Delivery Team
Nuclear Restoration Services (NRS)
NRS (Dounreay)
Nuclear Waste Services
Office for Nuclear Regulation
Rolls-Royce Submarines Limited (RRSL)
Sellafield Limited
Springfields Fuels Limited (Westinghouse)
Urenco

APPENDIX F: KEY POINTS

1. Governance of nuclear capability and the Nuclear Baseline should be a key consideration of senior management and should be integrated into the overall company governance structure.
2. The Board verifies the adequacy of the organisational capability, monitors nuclear vulnerabilities and the adequacy of mitigations
3. The licensee should understand its core nuclear capability and maintain it within its own organisation.
4. Category 1 service providers should be in a Nuclear Baseline. Contractors who do not need to be included in the Nuclear Baseline, but who may impact on nuclear safety (i.e. those utilised on a project basis), should be managed using the organisation's project management arrangements.
5. Careful consideration needs to be given to the design of an organisation to ensure nuclear safety functions are identified and resources assigned.
6. The Nuclear Baseline should represent the 'fully capable organisation', **not** the minimum required for safe operation or shutdown.
7. Relevant roles at all levels and employment status should be considered for inclusion in the Nuclear Baseline.
8. A nuclear safety post or role is defined as one where an action or inaction by the individual or group:
    - undertaking
    - supervising
    - managing
    - governing
    - overseeing
    - assuring
    - challenging
    - defining or
    - directly supporting

    work could pose a direct or indirect impact on nuclear safety, both immediate or latent
9. The licensee should determine the number of staff required to fulfil the posts and roles identified in the Nuclear Baseline, be able to demonstrate that this is adequate for nuclear safety and monitor and manage the risks arising from any variance.
10. The licensee should understand the competence needs of the business and be able to demonstrate that it has sufficient competent persons to be able to maintain control and oversight of nuclear safety activities at all times.
11. The licensee should ensure that compared with the Nuclear Baseline, resources are adequate and sufficiently resilient to meet the current and future demands. Appropriate corrective or mitigating action should be taken where there are gaps, weaknesses and/or vulnerabilities and these should be monitored through appropriate governance routes.
12. Periodic review of the Nuclear Baseline should be undertaken at least annually to ensure that it is current and accurate and that the processes governing it are suitable.
13. Stakeholders at all levels should be actively engaged at the earliest opportunity and throughout all parts of the organisational change process.

14. The MOC approach and governance should be proportionate to the risks associated with the change and its potential impact on roles affecting nuclear safety. For complex, compound changes there should be an overarching change proposal setting out the means of controlling risks.
15. All changes (including temporary changes) that may have a potential impact on nuclear safety should be categorised in relation to the unmitigated risks arising from the change should it be ill conceived and/or poorly implemented.
16. All changes should be assessed and approved in advance of being implemented and not 'salami–sliced' into smaller units.
17. Change implementation needs to be monitored to control variance and prevent deviation from the plan. Risks and performance measures should be monitored, so issues can be identified and mitigated quickly.
18. Effective oversight should be in place to assess and control the cumulative effect of multiple changes.
19. Lessons learnt from organisational changes should be captured and disseminated appropriately.
20. Periodic reviews should be conducted to evaluate the effectiveness of the MOC process and compliance with it.