

The UK Nuclear Industry Guide To:

Intelligent Customer Role



This Nuclear Industry Guide was produced by the Organisational Capability Working Group and published on behalf of the Nuclear Industry Safety Directors' Forum (SDF)

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Foreword

This document has been produced in response to a request from the Safety Directors' Forum to address a strategic issue on the role of Intelligent Customers within nuclear organisations. It aligns with the Office for Nuclear Regulation (ONR) NS-TAST-GD-049 Revision 6 *Licensee Core and Intelligent Customer Capabilities*.

Ensuring the safe conduct of nuclear activities is the priority for all nuclear organisations. They need to demonstrate to the regulators that they have sufficient expertise to maintain control and oversight of safety (including conventional health and safety, nuclear and radiological safety, safeguards and environmental protection) and security at all times. They also need to demonstrate that they control and manage the use, and oversight, of contractors whose work (including goods and services) has the potential to impact on safety and/or security. The expertise to oversee contractors and accept their work is often called Intelligent Customer (IC) capability.

This Good Practice Guide:

- Outlines definitions of IC and Intelligent Client.
- Outlines good practice for involving IC capability in the procurement and delivery process.
- Identifies the capabilities and attributes that can enhance the effectiveness of the IC capability in relation to supporting the procurement and delivery process.
- Outlines how organisations can evaluate how well they are developing, managing and deploying their IC capability.

Safety Directors' Forum

In a sector where health, safety, security and the protection of the environment is, and must always be, the number one priority, the Safety Directors' Forum (SDF) plays a crucial role in bringing together nuclear executives to:

- Promote learning.
- Agree strategy on key issues facing the industry.
- Provide a network within the industry (including with Government and regulators) and external to the industry.
- Provide an industry input to new developments in the industry.
- Ensure that the industry stays on its path of continual improvement.

It also looks to identify key strategic challenges facing the industry in the fields of environment, health, safety, quality and security (EHSQ&S) and resolve them, often through working with the UK regulators and BEIS (Department for Business, Energy and Industrial Strategy), both of whom SDF meets twice yearly. The SDF members represent every part of the nuclear fuel cycle from fuel manufacture, through generation to reprocessing and waste treatment, including research, design, new build, decommissioning and care and maintenance. The Forum also has members who represent the Ministry of Defence (MOD) nuclear operations and authorisees, as well as "smaller licensees" such as universities and pharmaceutical companies. With over 25 members from every site licence company in the UK, every MOD authorised site and organisations which are planning to become site licensees, the SDF represents a vast pool of knowledge and experience, which has made it a key consultee for Government and regulators on new legislation and regulation.

The Forum has a strong focus on improvement across the industry. It has in place a number of subject-specific sub-groups looking in detail at issues such as radiological protection, human performance, learning from experience and the implementation of the new regulatory framework for security (Security Assessment Principles [SyAPS]). Such sub-groups have developed a number of Good Practice Guides which have been adopted by the industry.

Sub-Group Description

This document was produced by the Organisational Capability Working Group, which is a sub-group of the Safety Directors' Forum. The role of the Working Group is to improve industry understanding, management and effectiveness of Organisational Capability taking into account licence/authorisation conditions 7, 10, 12, 26 and 36. The Group brings together a wide range of representatives of UK Licensees and Defence Authorisees and also includes a representative from ONR.

Disclaimer

This UK Nuclear Industry Guide has been prepared on behalf of the Safety Directors' Forum by a Technical Working Group. Statements and technical information contained in this Guide 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. This Guide is not a standard, specification or regulation, nor a Code of Practice and should not be read as such. We 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 UK Nuclear Industry Guide.

This Guide is produced by the Nuclear Industry. It is not prescriptive but offers guidance and in some cases a toolbox of methods and techniques that can be used to demonstrate compliance with regulatory requirements and approaches.

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1 Introduction

Ensuring the safe conduct of nuclear activities is the priority for all nuclear organisations. They need to demonstrate to the regulators that they have sufficient expertise¹ to maintain control and oversight of safety (including conventional health and safety, nuclear and radiological safety, safeguards and environmental protection) and security at all times. They also need to demonstrate that they control and manage the use, and oversight, of contractors whose goods, work and/or services² has the potential to impact on safety and/or security. The expertise to oversee contractors and accept their work is often called Intelligent Customer (IC) capability. The IAEA definition³ of an IC states:

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.

The Office for Nuclear Regulation (ONR) considers that the concept of Intelligent Customer relates to the attributes of an organisation rather than the capabilities of individual post holders. The Safety Assessment Principles (SAPs) define IC as:

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 behalf⁴.

The construction, maintenance, and decommissioning of nuclear assets, and delivery of services, sometimes requires site licensees⁵ to use contractors. Ensuring that contractors comply with the high safety, security and environmental standards required can be difficult and requires a strong IC capability to ensure contractors:

- Follow site safety and security rules
- Respect active area boundaries
- Understand the often complex interfaces with other site and contractor activities
- Manage information that may be sensitive
- Understand the regulatory requirements.

Irrespective of its use of contractors, the licensee should be able to lead the safety case arguments with the regulator and demonstrate that it understands, and is safely managing, the hazards on its site. ONR's guidance⁶ to its inspectors states that:

Contracting out work does not lessen a licensee's legal accountability for the work done on its behalf and the degree of control and oversight should reflect that. (para 5.48)

The guidance also notes that:

IC is a function of the licensee as a whole, and the IC capability to manage contracted work is unlikely to be vested in a single individual. (para 5.29)

¹ In-house expertise may be delivered by an 'Embedded Contractor' i.e. individuals or members of contractor organisations that are subject to the licensee's competency requirements and competency assessments. 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 be acting as an Intelligent Customer, see TAG-049.

² Throughout this document the word 'work' is used to mean: goods, works and/or services.

³ IAEA, *Workforce Planning for New Nuclear Power Programmes*, Nuclear Energy Series No. NG-T-3.10, 2011.

⁴ ONR, *The Safety Assessment Principles (SAPs) for Nuclear Facilities*, 2014 Edition, Revision 0-November 2014.

⁵ Throughout this document licensee is also taken to include authorisees.

⁶ ONR, *Nuclear Safety Technical Assessment Guide: Licensee Core and Intelligent Customer Capabilities*, NS-TAST-GD-049 Revision 5, April 2016.

Roles with IC responsibilities should be identified in the nuclear baseline. As part of this process, the licensee should be able to demonstrate that it has put in place suitable succession planning for individuals holding IC roles. (para 5.32)

Although the ONR guidance focuses on IC for nuclear safety, the same principles and approach can be applied to other areas of safety. Throughout this note, the word 'safety' is used to mean: conventional health and safety, radiological and nuclear safety, safeguards, environmental protection and security. It is up to licensees whether they adopt an IC approach for all these aspects of safety⁷.

1.1 Intelligent Client

The definition of an Intelligent Client can be summarised from the guidance and good practice defined by the Infrastructure and Projects Authority⁸ (IPA), and the Institution of Civil Engineering⁹. It relates to how an organisation procures and manages projects and programmes rather than individual pieces of work and can be considered to be the strategic operation of the IC capability. An Intelligent Client:

- Understands and defines the needs of the programme
- Defines its requirements fully
- Commissions the projects
- Selects the contractor competitively and fairly and rewards through incentivised contracts
- Supports the contractor and enforces the contract fairly
- Manages the relationships with suppliers
- Brings projects together to make the whole programme
- Measures the effectiveness of the projects
- Assures the projects are fulfilling the requirements
- Delivers the benefits
- Maximises the delivered value.

For a nuclear licenced site, the Intelligent Client requirements ensure that the licensee:

- Maintains an oversight of nuclear safety and security at all times
- Is in control of activities on its site
- Understand the hazards associated with its activities and how to control them
- Has sufficient competent resource within the licensee organisation to be an 'intelligent customer' for any works it commissions externally.

1.2 Aims of the Paper

The aims of this paper are to:

- Outline good practice for involving IC capability in the procurement and delivery process
- Identify the capabilities and attributes that can enhance the effectiveness of the IC capability in relation to supporting the procurement and delivery process
- Outline how organisations can evaluate how well they are developing, managing and deploying their IC capability.

Each section outlines how the good practice can help a licensee to meet the principles outlined in the ONR TAG on Licensee Core and Intelligent Customer Capabilities. The principles from the TAG are included in bold/italic text and quotes are in italics.

⁷ It is essential from a conventional health and safety perspective that the licensee meets its statutory responsibilities, for example as a Client under the Construction (Design and Management) Regulations 2015 (CDM). There may be overlap between IC and CDM practice.

⁸ Infrastructure and Project Authority, *Improving Infrastructure Delivery: Project Initiation Routemap*, Handbook Version 2, June 2016.

⁹ The Institution of Civil Engineer's (ICE), *Best Practice Panel (2009) Client Best Practice Guide*, Thomas Telford, London, 2009.

2 The Role of the Intelligent Customer

2.1 Identifying the IC Capability

Principle 1: The licensee should maintain a core safety capability of staff to ensure effective management for nuclear safety

Principle 4: The licensee should maintain an ‘intelligent customer’ capability for all work carried out on its behalf by contractors that may impact upon nuclear safety

It is industry good practice to identify and demonstrate which individuals are competent to be an IC for a range of subject matters. Such individuals may be appointed and have a clear understanding and knowledge of the goods being supplied by a service provider. Some organisations have developed ‘yellow pages’ that outline which staff are subject matter experts and can act as an IC for certain topics. Other organisations indicate ICs on their nuclear or organisational baseline. Technical and functional leads within some organisations ensure that there is sufficient capability available in each subject matter and monitor how that capability is deployed. Some organisations have a policy and manual for the use of ICs that stipulates that contracted work with a potential safety or security implication cannot progress unless an appropriate IC is appointed.

The TAG recognises that the core capability to maintain safety includes technical, operational and managerial elements; this is considered further in Section 3 which looks at the capabilities and attributes of the IC capability. The IC capability may need to change over time as the project lifecycle and safety related activities change. The ONR expects a licensee to be able to justify its core capability, including IC capability. This is usually done through the nuclear baseline; see the SDF publication on good practice on nuclear baselines for more information¹⁰.

The arrangements should ensure that, in the event that individuals holding IC roles change during the course of the project, or IC responsibilities change as the project moves from one phase to the next, there is a mechanism to formally handover IC responsibility from one role holder to the next. (para 5.30)

Some organisations undertake independent oversight of the IC capability to ensure that:

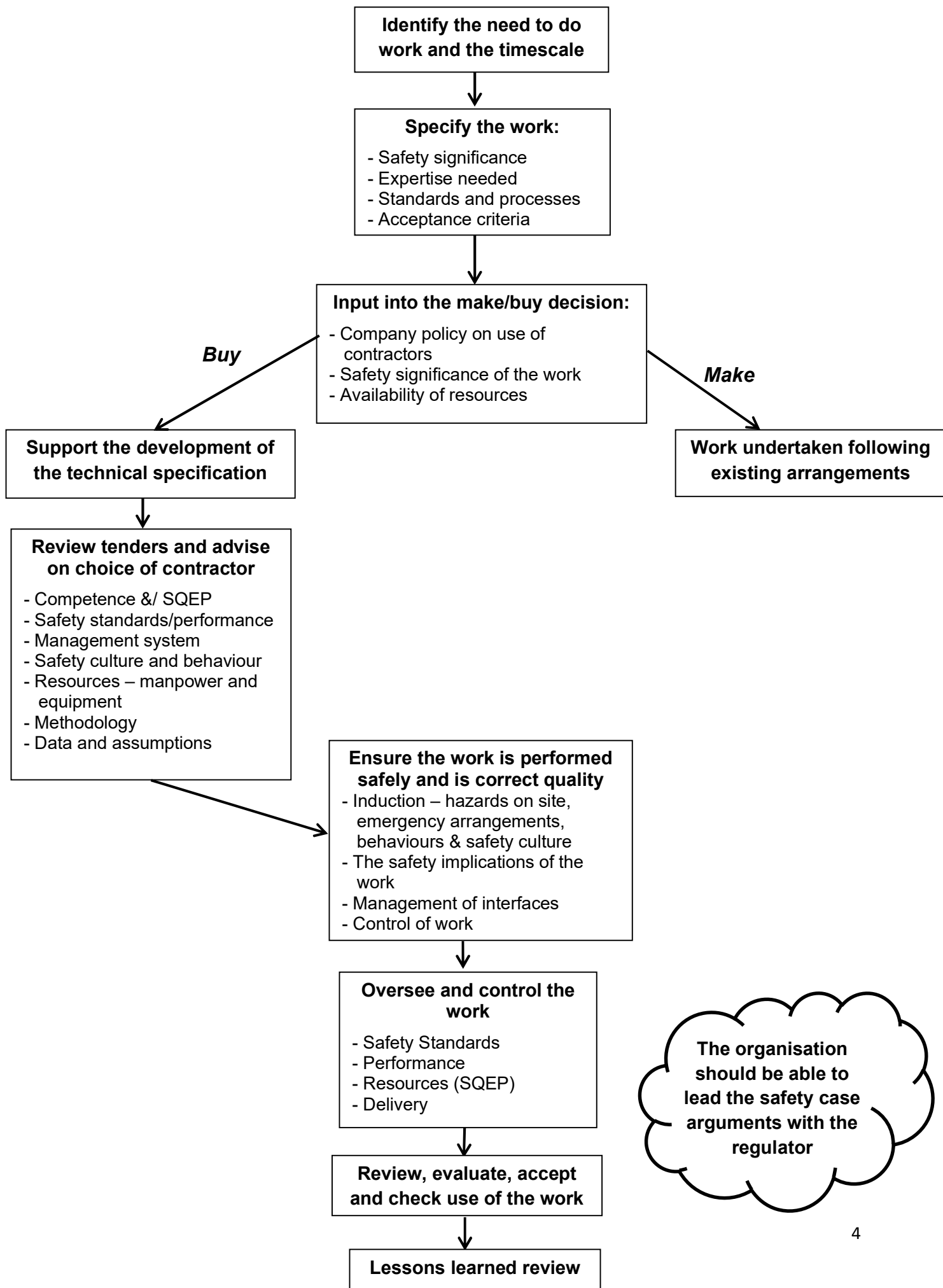
- There is sufficient capability and capacity in place
- Training is being undertaken
- The IC capability is involved at the appropriate points in the procurement and delivery process
- There are succession plans in place
- There are handovers between different individual ICs involved in projects.

Figure 1 outlines the steps in the procurement and delivery process. Good practice in involving the IC capability (noting that this is a function of the organisation and not necessarily vested in a single individual) during the process of identifying, carrying out and accepting work is outlined in the following sections. Different individual ICs may be involved in different steps of the process. Good practice ensures there is appropriate IC capability involvement in each step. It can be beneficial to have continuity and/or handover between ICs in each step.

Although the procurement and delivery process is shown as a linear process in the diagram, there can be interaction between the different steps and, in reality, it can be a more iterative process. For example, interactions between discussions in Sections 2.2, 2.3 and 2.4 may influence the make/buy decision and the priority of the work.

¹⁰ Safety Directors’ Forum, *Good Practice Guide: Nuclear Baseline and the Management of Organisational Change*, Issue 3, March 2017.

Figure 1: Steps in the Procurement and Delivery Process



The names given to the roles involved in the procurement and delivery process vary across site licensees. Some organisations have Contract Supervisors or Operations Control Managers who oversee the work of contractors; in others, ICs have contract supervision training.

Some licensees have tenants on their sites and, therefore, have individuals who are responsible for overseeing their activities, they are sometimes called Tenant Oversight Controllers. Some organisations have Superintending Officers who are responsible for the induction of contractors. In some organisations subject matter experts are also ICs, in other organisations the roles are separate and ICs must involve the relevant subject matter experts in the procurement and delivery process. Within each organisation, these different roles, and the competence and capability required to fulfil them, are clearly outlined in the management system. In this note the term IC capability is used to cover all these different roles.

2.1.1 Oversight of Tenants/Activities on Sites

Some licenced sites have tenants on them which are subject to consent from ONR. These tenants must comply with the sites' environmental and radiation protection policies and standards. Potential tenants are vetted to ensure their suitability from a safety, security and financial point of view. Tenants are restricted to carrying out activities which are consistent with nuclear safety, compliant with the nuclear site licence, and which are agreed by the site licensee and, if relevant, the Nuclear Decommissioning Authority (NDA). Leases and identified supporting documentation clearly specify the obligations of the landlord and the tenants.

Where leases permit operations of a radiological or potentially hazardous nature within the premises, the site licensee reserves the right to prevent the commencement of such operations until it is satisfied that the tenant is capable of complying with the appropriate safety and environmental obligations. This includes compliance with site emergency arrangements, applicable to all tenants irrespective of the use of the premises.

When tenants carry out work involving ionising radiation, the site licensee exercises control of the tenant to the extent necessary to discharge its overall obligation under the nuclear site licence and there is an obligation on the tenant to discharge their responsibilities under relevant regulations, including the Ionising Radiations Regulations.

The activities above require oversight to ensure that the tenant activities are carried out appropriately. Sites usually appoint staff to oversee the work that the tenants are conducting and the activities they perform can be similar to those carried out by ICs overseeing contractors' work. In these cases the competence needed by those overseeing tenants is similar to that of an IC and it is important that they understand the work being undertaken, the regulations that are relevant and how risks are going to be eliminated and/or managed.

Some site licensees appoint a Tenant Safety, Health and Environmental Advisor (TSHEA) for each tenanted premises and Authority to Operate (ATO) holders. They also appoint a Landlord's Representative whose role is to:

- Ensure an ongoing regime of monitoring, checking and inspection of tenant's operations as appropriate to the perceived risk potential of that tenant's operations and ensure that safety, health and environmental (SHE) requirements are being applied in accordance with the site's Tenant Safety Requirements (TSRs).
- Endorse Authorities to Operate (ATOs) where needed.

In this site solution the TSHEA supports the Landlord's Representative's monitoring programme and advises the site licensee on the following:

- Safety case and modification due process.
- Tenant events and accidents occurring as a result of operations and confirms investigation arrangements are appropriate.
- Event investigations and follow-up.
- SHE matters required by the site licensee.

- Matters of particular relevance to the facility operations relating to any site licensee discharge authorisation.
- Submission of documents to regulators.
- Close out of audit findings assigned to the tenant by the site licensee.

2.2 Identify the need to do work and the timescale

In order to retain this control and oversight, the licensee needs to identify the potential nuclear safety impact of its activities and bear this in mind when making decisions about whether to retain those activities using in-house resources or whether they can be contracted out. (para 5.16)

The licensee needs to understand:

- What work needs to be undertaken
- The safety significance of the work
- The timescale in which it needs to be completed.

It is good practice to involve the IC capability associated with the subject matter of the work in these discussions, as their expertise may be needed to answer the questions.

Some organisations undertake strategic planning to outline the work needed over the next few (3-5) years; this is sometimes outlined in a Business Plan. More detailed Operating Plans are sometimes used to outline the work to be done in the current financial year. Sites which are being decommissioned have Lifetime Plans that outline the work needed to take the site to its agreed end state. It is good practice to involve the IC capability in the development of the plans.

2.3 Specify the work

It is good practice to involve the IC capability in specifying the work that is required including the:

- Safety significance – how safety significant is the work; what potential direct and indirect impacts could it have on the safety of operations if not carried out appropriately.
- Expertise needed – what competence and experience is needed to undertake the work.
- Standards and processes – are there any regulatory requirements that need to be met or processes that should be followed.
- Acceptance criteria – how will the suitability of the work be evaluated.
- Records – what records will be required for handover during the work and at completion.
- Key requirements – what provisions must be included to ensure that the licensee is able to discharge its IC obligations (e.g. quality arrangements, hold-points, licensee access requirements, ability for licensee to stop work).

Early involvement of the IC capability, particularly in the specification step, can reduce the level of support needed later in the procurement activity and can decrease the likelihood of the output being unacceptable or requiring significant rework or additional work. The IC capability may also be aware of internal or external organisational learning that should be considered when specifying the work that needs to be done and how it is delivered.

The level of IC involvement in a piece of work can be influenced by the characteristics of the work as outlined in Table 1. A Quality Assurance (QA) approach, applying appropriate grading, is deployed by some organisations to ensure that the IC activities that are required are set out in a quality plan for the work. The QA grading used is commensurate with the safety significance of the work to be undertaken.

Table 1: How IC involvement may change depending on the characteristics of the work

IC involvement	Characteristics of the Work
High	High significance in safety cases. This includes systems which play significant roles in maintaining the integrity of the plant.
	Involves Class 1 components/systems.
	Of high regulatory interest e.g. first of a kind, novelty etc. Failure may cause long-term damage to the relationship between the organisation and the regulators.
	If undertaken in-house, the role would be categorised as very important on the Nuclear Baseline.
	Failure could result in breach of legislation.
Medium	Significant business impact that requires close oversight of technical IC.
	Failure in itself could not result in breach of legislation but may present a risk to regulatory compliance. Loss of function would only result in effects within the plant.
	Involves Class 2 components/systems.
	If it was undertaken in-house, the role would be categorised as important on the Nuclear Baseline.
Low	Reputational damage may be short-term and localised. No significant risk of reputational damage/ loss of customer base.
	Failure in itself could not result in breach of legislation.
	Involves Class 3 components/systems.
	Limited ability to cause reputational damage or loss of customer/regulatory confidence.

2.4 Input into the make/buy decision

Principle 3: Licensee choices between sourcing work in-house or from contractors should be informed by a company policy that takes into account the nuclear safety implications of those choices.

It is good practice to involve the IC capability in the decision about whether the organisation should undertake the work itself or use contractors. Most nuclear organisations have a company policy on the use of contractors, which outlines how the company makes decisions about what work it undertakes internally and what it contracts out to the supply chain. There may be some activities that the organisation will always contract out. This policy influences the competence and expertise that is available within the organisation to undertake work. It is good practice to consider the potential impact on an organisation's core capability of using contractors over time and its future ability to conduct work in house. Using contractors can help to develop an organisation's IC capability. Many licensees assess the risks and vulnerabilities of using the supply chain when making decisions including the loss of services provided by contractors.

It is good practice to involve the IC capability's knowledge in evaluation of the safety significance of the work and the decision about using the supply chain.

The availability of internal and external resource can be a factor in the make/buy decision. Internal resources may already be committed on other projects and unable to undertake the work internally. The IC capability should have an understanding of the internal expertise that is available and its current commitment. Sufficient internal expertise must be available to enable work to be overseen and managed appropriately. These considerations could affect the timing of the work. Availability of external expertise and potential vulnerabilities to the loss of services from a contractor can also affect decisions and the IC capability should have knowledge about this.

Other considerations could include:

- Potential loss of internal capability and ability to oversee future work
- Loss of opportunity to develop the in-house skills base
- Conflicts of interest in contractor usage (for example delivering and reviewing related work)
- Balance of in-house and contractor capability.

2.5 Support the development of the technical specification

Principle 5: The licensee should ensure that it only lets contracts for work with nuclear safety significance to contractors with suitable competence, safety standards, management systems, culture and resources.

The quality of the technical specification can have a direct impact on the quality of the work that is delivered and whether the output is fit for purpose. It is good practice for the specification to clearly outline:

- The work that is required
- Its safety significance
- The expertise needed to do the work
- Any standards or processes that need to be followed
- Any IC activities that will be carried out – site visits, oversight arrangements etc.
- The acceptance criteria for the work (this may include any governance arrangements)
- The records that must be kept during the work and handed over during and/or on completion of the contract
- Any services to be provided after the work is completed (e.g. training, maintenance etc.)
- Contractor involvement in any lessons learned exercise
- How the tenders will be evaluated.

Giving additional consideration to the writing style of the technical specification including the language used (e.g. 'shall' must be fully and properly met, use of jargon and acronyms, etc.) and the governance arrangements (such as ownership, authority and configuration control of any modifications) can help to ensure the quality of the tenders received.

A decision should be taken on whether the specification should be open or closed. An open specification describes required performance without mandating how the performance should be achieved. A closed specification may describe not only the required performance, but the technology and tools etc. that must be employed too.

It is good practice to involve the IC capability in developing the specification to ensure the work will be of the appropriate standard and provide what is needed. It is also good practice to have subject matter experts provide the technical input to specifications.

Ensuring that the work is clearly described helps suppliers to respond to the purchaser's request without ambiguity and can save time and money. Experience demonstrates that the specification is an essential element of the procurement process as it:

- Is the tool used to communicate the customer requirements to potential suppliers
- Ensures that all the requirements of the 'to be delivered' product are identified and validated
- Ensures that a consistent and quality assured specification is provided to suppliers
- Helps to ensure the right product is delivered first time
- Is the means of verifying that the product meets the requirements in terms of conformity, compliance, performance etc.

Some organisations evaluate the work needed and attach a quality grading to it to recognise its safety significance and ensure that the appropriate oversight activities are identified proportionate to the safety significance. Some organisations undertake a risk assessment to consider the consequences of the work not conforming to the specification at the point of use. It is good practice to involve the IC capability in agreeing the quality grade and doing the risk assessment.

2.6 Review tenders and advise on choice of contractor

Principle 5: The licensee should ensure that it only lets contracts for work with nuclear safety significance to contractors with suitable competence, safety standards, management systems, culture and resources.

It is good practice to involve the IC capability in the evaluation of the tenders because subject matter expertise may be needed to determine if the tenders are fit for purpose. It is good practice to involve the IC capability in developing the evaluation criteria and their relative weighting as part of developing the specification. In some organisations the tendering and evaluation process can vary depending on the quality grading applied to the work.

Some organisations develop questions to ensure bidders provide the information that will be needed to evaluate the tenders against the criteria. Weighting the questions can help bidders to know where to focus their attention when developing their tenders (e.g. methodology, expertise, previous experience, cost etc.). The evaluation could consider:

- Competence and SQEP – does the contractor have the competence and experience needed. Are the staff assigned to do the work SQEP.
- Has the contractor conducted similar work previously and has this resulted in good outcomes.
- Safety standards/performance – does the contractor understand the safety significance of the work, the standards they need to adhere to and have they demonstrated how they will achieve those standards.
- Management system – does the contractor have a suitable management system in place and appropriate quality assurance arrangements.
- Safety culture and behaviour – does the contractor have an appropriate safety culture that has been demonstrated in other projects.
- Resources – does the contractor have the manpower and equipment available to conduct the work.
- Methodology – is the contractor's methodology appropriate and will it provide the required outputs.
- Data and assumptions – is the contractor planning to use appropriate data and assumptions.

It is good practice to audit contractors before contract award to confirm that they are able to satisfactorily deliver the work being tendered in the way they have outlined.

Licensees have some form of competency framework and competency assessment process to ensure their staff are competent to undertake work with safety significance. Some licensees apply their own competence assessment processes to contractors to ensure they have the required competence: this is especially appropriate when the contractors will be undertaking work on the licensee's premises under the licensee's direct supervision. Others ask for details of the contractors' competence management process to check that it is suitable to ensure the contractors' staff are competent and the standards are aligned with the licensee's expectations.

2.7 Ensure the work is performed safely and is of the correct quality

Principle 2: The licensee should retain overall responsibility for, and control and oversight of, the nuclear and radiological safety and security of all of its business, including work carried out on its behalf by contractors.

Principle 5: The licensee should ensure that it only lets contracts for work with nuclear safety significance to contractors with suitable competence, safety standards, management systems, culture and resources.

Principle 6: The licensee should ensure that all contractor staff are familiar with the nuclear safety implications of their work and interact in a well-coordinated manner with its own staff.

Principle 7: The licensee should ensure that contractors' work is carried out to the required level of safety and quality in practice.

The licensee therefore must retain overall responsibility for nuclear and radiological safety at all times, and ONR considers that in order to do this it must maintain a suitable level of control and oversight of those who are carrying out work on its behalf. (para 5.15)

It is good practice to confirm that IC activities can be delivered, and the contractor understands the engagement and oversight that will be applied before work commences. Some organisations check that appropriate quality plans are in place (both those for IC activities and the contractor's for delivering the work). Holding an inaugural meeting where the IC capability will explain their role and how they will continue to interact with the contractor can be beneficial including outlining the IC power to require work to be stopped if it is not being undertaken safely or meeting the specification.

Contractors need to understand the safety implications of their work so that they understand what standards and requirements apply and why. It is good practice to induct contractors and sub-contractors¹¹ to ensure that they have the right understanding of the context of their work and its safety significance. If contractors understand the wider context surrounding their work it can help them to deliver what is needed. The IC capability will have knowledge that may be important for this induction.

For work being undertaken on licensed sites, it is good practice to ensure that contractors understand the hazards on site, emergency arrangements and how their work interacts with these. Contractors need to understand the required behaviours and safety culture of the site, how they are expected to conduct their work and the consequences if they do not comply with safety expectations. In some organisations this induction process is carried out by Superintending Officers or Operations Control Managers.

Once work has commenced, it is essential to implement appropriate oversight to ensure that safety is maintained. As outlined earlier this role can be carried out by different posts within organisations (e.g. a Contract Supervisor [or similar role] or the IC capability). The aim is to ensure that the work is:

- Performed safely
- Of the correct quality
- Cost effective
- Delivered in a timely manner.

It is good practice to confirm sufficient IC capability is available throughout to ensure effective control and oversight of the work, and after completion or delivery of the work, to support learning reviews, ensure the product is used appropriately and monitor any support services provided.

¹¹ Organisations should be aware of any sub-contractors that are being used and ensure that they also receive safety inductions and understand the implications and context of the work being undertaken.

It is important for contractors to understand how their work needs to be integrated with other work and activities. The IC capability may need to help to manage any interfaces between the work and any other activities that are taking place.

Depending on the nature of the work, the IC capability could be involved in its control, see below.

2.8 Oversee and control the work

Principle 2: The licensee should retain overall responsibility for, and control and oversight of, the nuclear and radiological safety and security of all of its business, including work carried out on its behalf by contractors (note that this is a legal requirement).

Principle 7: The licensee should ensure that contractors' work is carried out to the required level of safety and quality in practice.

It is important to ensure that work is carried out to the appropriate safety standards¹² and the required level of performance is delivered. It may be necessary to check that the contractors who actually conduct the work are SQEP and have the appropriate documentation. Any changes to key contractor personnel should be checked to ensure that the relevant standards, experience and qualifications are maintained (it is good practice to agree the key personnel in advance). It is good practice to monitor the competence and adequacy of the resource deployed by the contractor and their supply chain throughout the work schedule. The IC capability can have the ability to require work to be stopped if safety or performance shortfalls are observed.

It is good practice to involve the IC capability in monitoring the delivery of the work to ensure it will meet requirements, and be in line with the organisation's procedures, culture and safety standards. The arrangements for supervising contractors should be proportionate to the risks of the work, and the capabilities and track record of the contractor. Consideration can also be given to the novelty of the work and its potential to impact on other work areas. The level of IC involvement and oversight should be determined by considering these different aspects and it is good practice to document IC activities.

Oversight could include:

- Attendance at relevant internal contractor meetings, such as design reviews and option assessment panels
- Interim reviews of deliverables
- Hold point control methodologies
- Procedural authorisation
- Audits
- Visiting manufacturing facilities
- Interaction with key organisations from the contractor's supply chain.

It is good practice to involve the IC capability in discussions and evaluations of any proposed changes to the work, its scope, the contractors involved or the methodology used. The safety implications of any changes should be evaluated to ensure that the appropriate standards are maintained. Changes may require the IC capability oversight to be changed to ensure sufficient control of the work. It is good practice to involve the IC capability in any non-conformances or concessions and their resolution.

The licensee as the CDM Client is not expected to be a specialist in construction practice, but should have management arrangements in place to oversee and monitor the work of contractors. In some organisations where a contractor is appointed as the Principal Contractor, the licensee's project manager acts as the IC interface for Client responsibilities. In this situation the interface has to be agreed and recorded by the Authority to Operate or Authority to Proceed (ATO/ATP) Holders.

¹² Any services or goods being used in the UK must comply with UK standards even if the product is developed overseas.

2.9 Review, evaluate, accept and check use of the work

Principle 7: The licensee should ensure that contractors' work is carried out to the required level of safety and quality in practice.

Once the work has been completed it is good practice to involve the IC capability in reviewing and evaluating it against the standards and requirements that were set out in the specification. An IC review could include checking whether:

- The work has been completed in line with the technical specification, and meets the organisation's requirements.
- The work has been delivered to the agreed level of quality and the appropriate records to demonstrate this are available and appropriately stored.
- Any safety implications have been understood and adequately addressed.

If the work meets the requirements, and is of the correct quality, then the organisation (this could be the IC capability) can accept the work. If the requirements have been clearly articulated in the specification, a high level of IC involvement may not be needed in this stage.

If the work has not met the requirements, or is of a poor quality, then it is good practice to involve the IC capability in any plans for resolution of the issues.

It is good practice to involve the IC capability in ensuring that the product or work is only used for its intended purpose. Inappropriate use of a product can cause safety issues and IC capability can help to ensure that the end users understand any limitations or restrictions on the use of the product or service.

2.10 Lessons learned review

It is good practice to involve the IC capability in timely lessons learned reviews to identify what went well and what can be improved in the future. Reviews can consider the planning, procurement and delivery process, including the involvement of the IC capability, as well as the suitability of the work delivered and interactions with the contractor. It can be beneficial to involve the contractor in the review to understand their perspective.

3 IC Capabilities and Attributes

Principle 4: The licensee should maintain an 'intelligent customer' capability for all work carried out on its behalf by contractors that may impact upon nuclear safety

It is useful for all staff within an organisation to understand the concept of IC and how it helps the organisation to ensure its activities are carried out safely. Those who have an IC role can benefit from additional training to ensure that they understand their role and responsibilities and the relevant company procedures that they need to follow.

Technical and functional leads who are responsible for ensuring that there is sufficient IC capability, those who oversee people carrying out IC related work and/or co-ordinate IC activities and ensure ICs are involved at the appropriate time may benefit from additional training. Programme and project managers may also benefit from additional training to help them to ensure appropriate IC involvement in the work they are managing. It may also be beneficial to identify a Director who is responsible for any IC policy and standards and its provision across the organisation.

Those making up the IC capability should be competent in their field of expertise and able to understand the safety implications of the work being procured. They should also have good knowledge of the legislation, guidelines, codes of practice and good practice relevant to their technical area so that they understand what standards need to be met. Some organisations tailor the level of training that is required to a person's role in relation to the IC capability.

Along with this 'technical competence', members of an IC capability can also benefit from having good written and verbal communication skills to facilitate discussions between the

organisation and the contractor. Good communication helps to ensure that the contractor delivers what is required to the appropriate standard. Other skills such as relationship management, change management, conflict resolution and assertiveness are also beneficial for contract management.

It is good practice for the IC capability to have the knowledge and skills to:

- Understand the planned outcomes the organisation is trying to achieve from the outsourced work.
- Understand the organisation and its risks and hazards to anticipate the potential impacts of the activities and actions.
- Understand the organisation's procedures for procuring goods, works and services, its make / buy policy and procedures for managing contractors.
- Be able to write and review technical specifications including:
 - Explaining how the specification for contracted work was derived.
 - Understanding and explaining the relevance and the context of any scope of work carried out by contractors in relation to company objectives and the impact on safety.
 - Ensuring that the technical specification is adequate, taking into account any regulations and their relevance.
 - Setting suitable standards against which the specific work will be procured.
- Support the selection of contractors including:
 - Assessing the technical competence of suppliers to undertake particular scopes of work in line with the organisation's procedures.
 - Evaluating the technical suitability of tender responses.
 - Being able to explain and justify why the contractor selected was suitable for the specific task based on the contractor's technical capability, proposed methodology and experience.
- Communicate with the contractors, explain the context for the work, its safety significance and any particular standards it needs to meet, its interface with other work areas and how it contributes to the organisation's mission.
- Monitor and control the implementation of the work ensuring that it adheres to the standards required and the organisation's procedures and that safety is being maintained.
- Manage information i.e. how to use the organisation's systems and processes to manage the information associated with the work and any electronic products that are created.
- Resolve issues that may arise including changes in scope, changes in contractor personnel, barriers to delivery, risk management and mitigation.
- Review and accept the delivered product against the standards set out in the specification using the organisation's procedures.
- Handle any non-conformities and or delivery of a product that is not fit for purpose.

The licensee should ensure that there is sufficient training and guidance in place to support all these aspects.

4 Self-assessment

To evaluate how well an organisation is developing, managing and deploying its IC capability, it can consider whether it is able to explain and provide evidence to demonstrate:

- The policy and rationale for use of contractors and that the policy is being used in practice.
- How management is able to justify the extent of its current and future reliance on contractors.
- Where a licensee has contracted out functions/services, or is proposing to do so, it can show that the risks of doing so have been adequately assessed and managed. This includes considering whether the licensee has identified potential vulnerabilities arising from loss of services provided by contractors with key safety related capabilities and, where appropriate, identified contingency arrangements.
- The licensee has arrangements in place to identify, sustain and secure the IC capability needed to conduct its business.
- Training is in place for ICs to maintain their technical competence, ensure they understand the organisation's systems and processes for procurement and the delivery of work and have the softer skills needed to manage contractors.
- Posts containing IC roles are clearly identified on the licensee's nuclear baseline and that these posts are included in the vulnerability assessment¹³.
- The technical capability, safety and quality performance to deliver contractual requirements are available without adversely affecting safety.
- The collective competence to carry out the specified contracted work to the required safety and quality standards is available.

¹³ If the concept of IC is being applied to all aspects of safety then this may be shown on an organisational baseline.

5 Further Reading

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