

Technical & Engineering Authorities Charter

Charter

1. Scope and Authority

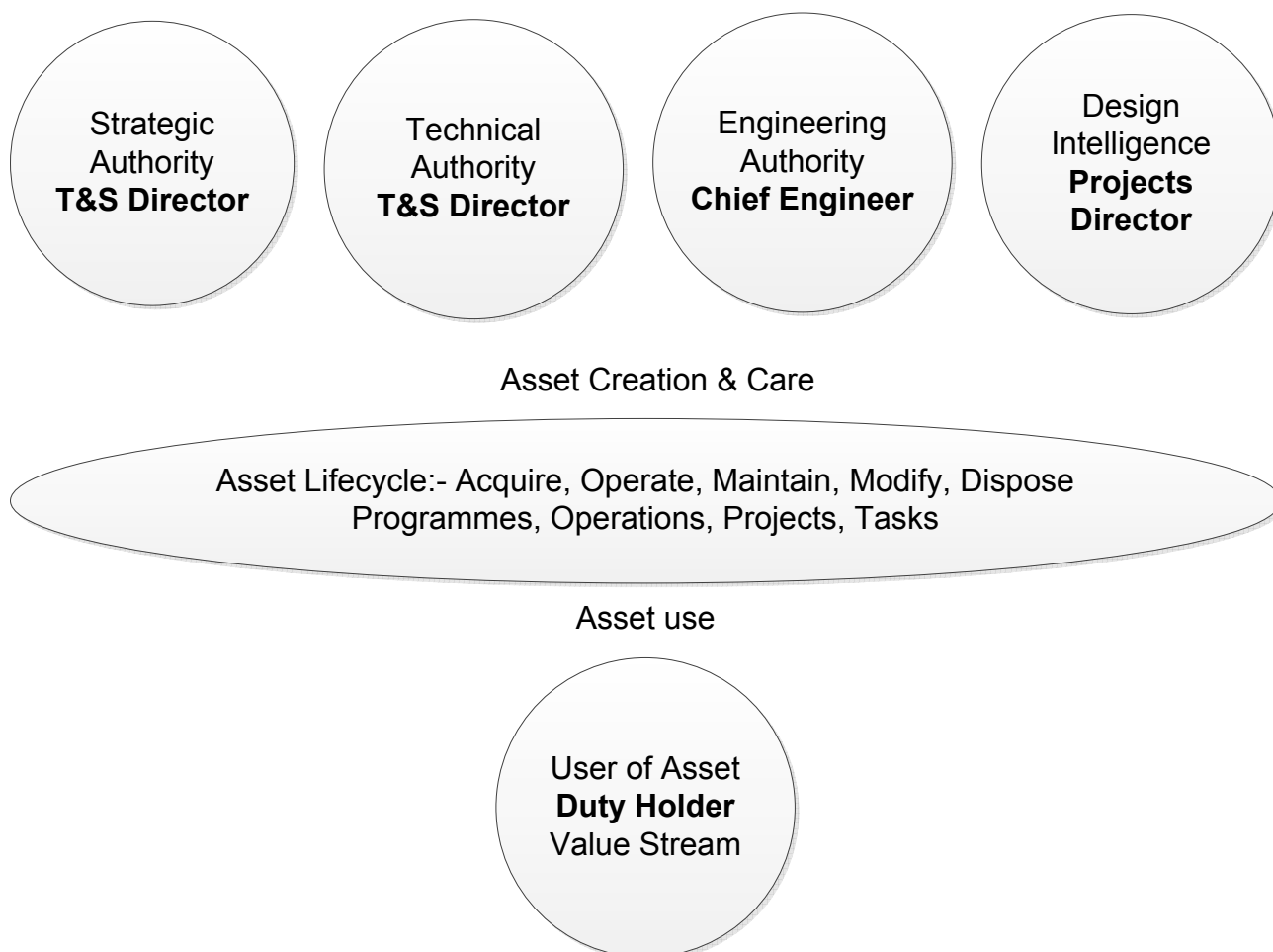
This “Technical & Engineering Authorities Charter” has been produced to ensure that the technical & engineering aspects of our plants, including design matters are established and maintained thereby securing nuclear safety across the directorates and throughout the life of the plants. This document replaces the Design Authority Intelligent Customer Charter (SLC 1.02.02) and introduces the new terms of Technical Authority, Engineering Authority and Design Intelligence. The existing concepts of ONR Design Authority and WANO Technical Authority are combined into the Sellafield Engineering Authority. These Engineering Authority concepts have also been extended to form the Sellafield Technical Authority. In order to avoid confusion with previous models Design Authority has become a reserved term which will not be re-used in any part of the Sellafield arrangements.

The Sellafield term Technical Authority does not correlate to the WANO one although aspects of the WANO Performance Objectives and Criteria for chemistry are covered.

The principal difference between Technical Authority and Engineering Authority is that Technical deals with the science and chemistry of the nuclear materials we process (product) and Engineering deals with capability of the plants in which we process nuclear materials. The Technical Authority ensures we are doing the right thing by ensuring the technical viability of our treatment processes and the Engineering Authority ensures we are doing it the right way by ensuring the through life viability of the plants. Design Intelligence is used to describe the Responsible Design Function that holds the corporate design knowledge. Such knowledge is applied during design development to provide solutions incorporating LFE and best practice. In general the role of the Authorities is to set and maintain the direction and delivery standards, ensure configuration control and to drive improvement in the context of their area of Authority. How this is executed therefore varies slightly in the different areas and is detailed below.

Reference is made to strategic authority and duty holder by way of context only. This charter does not detail their activities.

Authorities Context Diagram



Strategic authority

- Set direction of travel for business, ensuring organisation and goals aligned with customer requirements.
- Monitor strategic direction and control divergence / convergence with direction of travel.
- Implement necessary or desirable changes in strategy.

Technical Authority

- Monitor relevant technologies and manage associated risks to an acceptable level prior to deployment.
- Understand and control through flow sheets nuclear (chemical) processes.
- Monitor and control variations to flow sheets.
- Ensure employed technologies remain valid and provide optimum solution for value streams

Engineering Authority

- Specify plant functional requirements
- Maintain full lifecycle control of all engineering matters
- Monitor plant health and provide value stream with optimum plant performance
- Permission use of plant in accordance with all technical & engineering constraints.

Design Intelligence

- Apply design intelligence to provide innovative solutions to meet combined strategic, technical & engineering requirements.
- Capture design intelligence through LFE KM etc
- Ensure designs provide optimal solutions that are safe and legally compliant.

Value Stream

- Deliver customer satisfaction
- Operate plant in accordance with technical & engineering constraints
- Drive “authorities” to deliver optimum performance

1.1 Purpose and scope

This charter applies to the Sellafield Ltd Nuclear Licensed Sites and aligns with the Technical & Engineering (T&E) Manuals and Standards. The charter forms a significant part of overall T&E governance and internal regulation

The purpose of this charter is to set out the arrangements for discharging T&E Authorities to ensure sufficient competent resource is available to understand the nuclear material processes, capability of assets and to ensure that plant and equipment is able to perform safely and effectively throughout their defined lifecycle. T&E Authorities will be described, the coverage bounded, key roleholders identified and their duties defined for the key relationship between the bodies shown in the context diagram above

The Charter will also set out the arrangements for discharging Design Intelligence (DI) duties and how such arrangements will be integrated and interact with the Technical & Engineering Authorities requirements.

There are other process interactions such as those with Safety Case and Maintenance which are outside the scope of this document.

1.2 Technical Authority (TA) Concept

The Technical Authority is the function within the organisation that is responsible for establishing and maintaining the Technical intent throughout the lifecycle of a nuclear installation. The Director with principal accountability for TA is the Technical Director.

The concept is further characterised by the following principles:-

- Be a defined function within a licensee's organisation with an independent (of operations) reporting line to the Managing Director of the licensee organisation;
- Have the authority and the responsibility to approve or reject proposed Technical solutions and changes to those proposals
- Have the capability to understand the totality of the employed technologies and nuclear safety case in the context of each stage of the full plant lifecycle (e.g. maintaining a technical baseline and modelling plant processes through flow sheets)
- Have the resources, capability and management processes to sample, analyse, assess and monitor plant chemistry. Consider the impact of changes on plant conditions and employed technologies, advising Operations and Engineering Authority accordingly.
- Have appropriate up to date knowledge, skills, experience and resources;
- Where the TA does not have the detailed, specialised knowledge or capacity required it may choose to assign certain defined activities to the supply chain under (TA) Intelligent Customer control.

The application of TA is further depicted in Appendix 1 in terms of advice provided by the authority to the licensee's ultimate duty holder (Chief Executive Officer). Such advice ranges from providing advice on technical adequacy, risks and uncertainties that could impact on asset creation outside the current technical baseline and strategic direction, to advice on underpinning science of lifecycle management for existing assets

1.3 Engineering Authority (EngA) Concept

The Engineering Authority is the function within the organisation that is responsible for establishing and maintaining design intent throughout the lifecycle of a nuclear installation. Engineering Authority is an important aspect of the Licensee Capability and requires incorporation into the management system to ensure it is robustly discharged throughout the Sellafield sites and is visible to all, especially Regulators. The Director with principal accountability for Engineering Authority is the Chief Engineer from whom the necessary authorities and accountabilities are cascaded.

The concept is further defined in the following 7 principles:-

- Be a defined function within a licensee's organisation which is independent of operations and has a direct reporting line to the Managing Director of the licensee organisation;
- Have the authority and the responsibility to approve or reject proposed designs and changes to those designs
- Have the capability to understand the totality of the design and nuclear safety case in the context of each stage of the full plant lifecycle;
- Have the resources, capability and management processes to assess changes to the plant's conditions and limits and performance characteristics, and have the authority to recommend (or in extreme cases require) modification to or suspension of operations;

- Have appropriate up to date knowledge, skills, experience and resources;
- Regularly assess and determine the continued adequacy of the plant's design and safety case, and have the authority and responsibility to respond to the issues identified.
- Where the Engineering Authority does not have the detailed, specialised knowledge required of all the systems and components important to safety it may choose to assign certain defined responsibilities to Responsible Designers.

The application of Eng A is further described in Appendix 1 in terms of advice provided by the authority to the licensee's ultimate duty holder (Chief Executive Officer). Such advice extends from advice on the adequacy of proposed asset design solutions during asset creation to advice on adequacy of lifecycle management and associated risk during plant operations and modifications.

The Site Licence Company (SLC) has an overall accountability for Engineering Authority. The following sections show how these accountabilities cascade through the organisation resulting in specific accountabilities within individual R2A2s. Many groups have a responsibility to assist in the discharge of Engineering Authority by working to the Engineering Authority arrangements and within the constraints specified by the design intent.

1.4 Internal Regulation

The Technical Director and Chief Engineer have accountability for strong governance and internal regulation of their respective authorities. Internal regulation is discharged using the following two key mechanisms:

- a) "Oversight activities" in order to keep the authority sufficiently informed and;
- b) Thereafter "Permissioning activities and use".

The Technical Authority informs itself through studies, application of (Technology Readiness Level's) TRL's and targeted assurance activities. Permissioning use of proposed technical solutions is conferred through the Technology Review Board TRB.

For asset creation and modification the Engineering Authority specifies engineering requirements, accepts the proposed design solution and maintains oversight of the design development and design realisation. Finally the Eng A confers technical acceptance of the engineering prior to giving permission for its use by operations. Similarly for asset modification the Eng A permissions the modifications through the PMP process and upon completion permissions return to operations.

Although the operator (Duty Holder) is the ultimate custodian of the facility he can only use the asset in accordance with any T&E constraints given within the T&E permissions. To this end there are effectively two clients for asset creation, one covering the integrity of the asset (Eng A) and one covering use of the asset (Duty Holder)

1.5 Design Intelligence (DI) Concept

Design Intelligence is the function within the business that ensures corporate knowledge and experience is applied when developing design solutions. The DI acts as the "nuclear integrator" ensuring TA and Eng A requirements are developed into safe & legal design solutions. DI leads self-delivery of design but can also be seeded into supply chain design provided there is adequate design Intelligent Customer oversight provided.

The DI also provides advice and assistance to the Eng A when establishing understanding of the design intent of existing plant and equipment.

The application of DI is further described in Appendix 1 in terms of advice provided by the authority to the licensee's ultimate duty holder (Chief Executive Officer). Such advice ranges from the outcome of design solutions and application of fit for purpose design during asset creation to design enhancements for modifications.

1.6 Intelligent Customer Concept

To ensure that Sellafield Ltd gets the services it requires from Suppliers, it must be able to act as an Intelligent Customer (IC) to understand and manage the risks to the business of inadequate provision and to ensure that what was required is actually delivered.

In addition, a SLC has an absolute responsibility for Nuclear Safety. This responsibility cannot be derogated and when engaging the supply chain the SLC must act as an intelligent customer in order to be the controlling mind with respect to such nuclear safety matters. As an intelligent customer, the management of the site shall know what is required, shall fully understand the need for supply chain services, shall specify requirements, shall supervise the work and shall technically review the output before, during and after implementation.

The intelligent customer concept shall be applied to all stages of Engineering from establishing design intent through to the realisation and maintenance of design intent. In doing so the SLC shall:-

- Retain overall responsibility for, and control of, the nuclear and radiological safety and security of all of its business, including work carried out on its behalf by contractors.
- Conduct make buy decisions in accordance with clear policies that takes due account of the nuclear safety implications of those decisions.
- Maintain an 'intelligent customer' capability for all work carried out on our behalf by the supply chain that may impact upon nuclear safety.
- Ensure that contracts for work with nuclear safety significance are let only to a supply chain with suitable competence, safety standards and resources and that these attributes are demonstrated at all tiers of the supply chain.
- Shall ensure that all Supply Chain staff are familiar with the nuclear safety implications of their work and interact in a well-co-ordinated manner with our own staff.
- Shall ensure that contractors' work is carried out to the required level in accordance with our validation and verification requirements.

The concept of intelligent customer relates to the attributes of an organisation rather than the capabilities of individual post holders. Accordingly the responsibilities associated with intelligent customer are discharged across the site's Engineering Community as described in subsequent sections.

The level of IC intervention has to be proportionate to the competence of the supply chain and the sensitivities of Nuclear Safety.

1.7 The Integration of Eng A, DI & IC principles.

It is important that the foregoing principles are integrated with clear accountabilities flowing down through the organisation. The extent to which Intelligent Customer activities need to be applied is dependent upon the make / buy strategy being adopted.

Self-Delivery	No Intelligent Customer requirements
Alliance including SL resource	▼
Experienced Supply Chain	▼
Inexperienced Supply Chain	Increasing levels of IC activity

An appropriate and adequate level of scrutiny will also depend upon the risk and consequence of inadequate provision and the novelty and complexity of supply.

As a Nuclear Licences Holder, Sellafield Ltd must retain an understanding of the engineering it deploys on its Nuclear Licensed Sites, which includes the delivered design. Although Eng A arrangements ensure that the capability and adequacy of the totality of the delivered engineering is understood, the Intelligent Customer arrangements must ensure that the supplied service aspects (basis and methodology) is understood, appropriate and documented.

Regardless of the make / buy strategy the Eng A will maintain adequate oversight of all relevant activities such that they can authorise final acceptance and bring into service all new or modified plant. Relevant activities emanate from the Plant Functional Specification and are defined within the various levels of Verification and Validation (V&V) Plans. The most detailed level V&V plans (Inspection & Test plans) will relate to specific work activities and will provide for the identification of Inspection, witness, surveillance and hold points for supply chain, Intelligent Customer, Engineering Authority and 3rd Party (Statutory Authorities and Regulators). Higher level plans will aggregate the foregoing activities such that work may be progressively accepted, free from gaps and with any known exceptions recorded, by area, system and ultimately by plant. The higher level plans will clearly indicate the method of stage acceptance, by whom and under which authority. Appropriate sampling regimes must be identified when developing IC surveillances and interventions

Intrinsic to the governance of the delivered design is the DI authorisation and control of the assignment of design approval to competent bodies and persons.

1.8 Technical, Engineering Authorities and Design Intelligence Organisational Model

EPE is the organisation accountable for the Eng A concept and does so through several areas: - Enterprise Plant Engineering (EPE) capability (Standards, Assurance and support), EPE System Engineering (Authority).

The Technical Directorate (TD) is the organisation accountable for the TA concept. TA duties are discharged through the TD central capability (standards & assurance) and deployed Technical resources within the delivery directorates.

Design Intelligence duties are carried out within the Project Directorate Such duties are discharged by the central capability (Head of Design) and deployed design resources within projects and the EPE Plant Facing Design Organisation

‘Engineering Standards & Assurance ’

Vested within EPE, under the Chief Engineer, the primary role is to set standards, enable and assure the discharge of Engineering Authority within Sellafield Ltd and provide specialist assistance (Equipment Programmes, Maintenance Authority) to groups in the local discharge of Engineering Authority.

Vested within Projects Directorate under the Head of Design, the primary role is to set standards, enable and assure the discharge of Design Intelligence within Sellafield Ltd and provide specialist assistance through the design capabilities to those carrying out design work. Both areas also have an independent assurance leg

‘Technical Standards & Assurance’

The Technical Directorate, under the Technical Director sets standards, enables and assures the discharge of TA and provides expert technical assistance.

'Engineering Authority'

Vested with each Directorate Head of Engineering directly under the Chief Engineer and independent of the operational chain of command, the primary role is to ensure that assets and engineering activities within their portfolio are safe, legal, correctly configured and continue to meet the business need. In particular they will be accountable for:-

- Specifying engineering requirements
- Approving deployment of engineering and design solutions
- Determining, maintaining & assuring that plant configuration is aligned with safety and operational needs
- Ensuring effective deployment of SQEP resources across their areas
- Verification & validation that the design solution meets the initial requirements set out at the start of a project / task, at all key stages of design development.
- Technical acceptance of the Engineering in new & modified plant prior to commissioning its use.
- Maintaining the Design Intent
- Ensure assets are safe and secure
- Ensure assets have performance required for delivery (ops and projects)
- Ensure assets have lifetime condition required to support site missions and programmes
- Ensure that we are managing assets in cost effective and affordable manner

'Technical Authority'

Vested with each Directorate Head of Technical deployed by the Technical Director and having an independent reporting route to the Technical Director on TA matters the primary role is to ensure that assets and technical activities within their portfolio are safe, legal, correctly configured and meet the business need. In particular they will be accountable for:-

- Specifying technical requirements
- Approving deployment of technical solutions
- Determining, maintaining & assuring that plant chemistry is aligned with technical, safety and operational needs
- Ensuring effective deployment of SQEP resources across their areas.
- Maintaining the Technical Intent

'Design Intelligence'

Vested under the Head of Projects within each Delivery Directorate or Major Projects Directorate and under Head of Plant Engineering within EPE the primary role is to provide a design and engineering service for new or modified assets.

- Ensuring Sellafield Ltd is in control of supplier delivery and retains sufficient knowledge and understanding of delivered designs
- Generating safe & legal designs. Developing design intent and deliver records to enable installation, commissioning, use and care to demonstrate that functional and safety requirements are fulfilled.
- Approval of designs
- Delivering compliant engineering solutions
- Deploying SQEP resources across their directorate
- Engagement through key stages of design with key stakeholders including Engineering Authority (Plant Engineering)
- Assistance to recovery of understanding of design intent for existing plant and equipment

'The Operator'

The Operator has a duty to use and care for assets within the design safety and performance

criteria. Ultimately the Operator is the custodian of all physical assets. The Operator approves the business case and functional specification for new and modified assets. Although the Operator becomes the ultimate custodian and finally accepts the handover of new or modified plant he can only do so once the Engineering Authority had conferred technical acceptance of the asset.

1.9 Governance and Control

Engineering Authority flows from the Chief Engineer through the DHoE and into the Operating Unit Engineering Managers and System Engineers. The reverse route is used for governance reporting and an escalation route for problem resolution. Accountability reviews are held between each hierarchical layer of the Engineering organisation. Engineering Authority requirements can be enforced, if so necessary, by the use of compelling advice issued by the Chief Engineer prior to the use of sanction notice by the Managing Director.

The Design IC follows a similar framework but with the assurance aspects flowing through the Discipline Chief Engineers and Capability Leaders as “Lead” Intelligent Customers. Technical Authority and Design IC arrangements also have access to Compelling Advice / Sanction Notice.

1.10 The Extent of Technical & Engineering Authority

Sellafield Ltd Technical & Engineering Authority will be limited to fixed or movable assets, owned or intended for ownership by the Nuclear Decommissioning Authority (NDA), whilst under the jurisdiction of the Chief Executive Officer for the SLC, where they are or will be:-

- Located within the Nuclear Licensed Site
- Located outside the Nuclear Licensed Site, but have a direct impact upon the safety of operations on the site (Service provided by these assets are referred to in Safety Cases for on site plants and often have their own Operational Safety Assessment).

The fixed or movable asset lifecycle will simplistically be throughout the study, design, supply, construct, installation, commissioning, service life and modification until final remediation by completion of demolition or disposal.

To avoid ambiguity concerning commencement it is from whenever work is sanctioned for investigation, option study, assessment, design or other activity that defines or modifies design intent (Lifecycle commences when a tangible asset can be identified which may lead to the sanction or asset creation or modification.)

1.11 Assets owned or used by others

In the performance of service or work it is necessary for others (e.g. contractors) to use plant, equipment, assets and goods owned by them or 3rd parties on SL nuclear licensed sites. Whilst SL Engineering Authority has no direct jurisdiction over these assets, it is incumbent upon the company in control of the use of these goods or assets to demonstrate to the Engineering Authority that their performance and use is safe, legal and within the safety case. Similarly for leased facilities it is incumbent on the leaser to demonstrate to the Engineering Authority that the performance of 3rd party plant, equipment or goods is safe, legal and within the safety case.

1.12 Engineering Authority and Design IC

For commodity items the Engineering Authority will accept conformance to appropriate National & International Design Standards, Codes of Practice and Operations & Maintenance to recognised Industry Practice.

The Engineering Authority will maintain the through life configuration alignment between the requirement (PFS and design intent), the documented configuration (configuration baseline) and the physical plant, authorising changes arising from misalignment or changing demands. A significant proportion of 'design' execution is undertaken by contractors and suppliers throughout a plant lifecycle from studies through concept and detail design to in-service modification and eventual demolition design under diverse contractual arrangements. It is vital that a competent and authorised Design Intelligent Customer community is defined with adequate governance to ensure that Sellafield Ltd is in control of supplier delivery and retains an understanding of the delivered design.

Intrinsic to the governance of the delivered design is the authorisation and control of the assignment of design approval to competent bodies and persons.

Engineering design is the specification (design requirements and solution documents and drawings), analysis (calculation, performance modelling and simulation), verification (review, audit, checking and compliance) and assessment (design justification, investigation, comparison and risk) of engineering, engineering records or assets.

As a Nuclear Licences Holder, Sellafield Ltd has to retain an understanding of the engineering it deploys on its Nuclear Licensed Sites, which includes the delivered design. Although Engineering Authority arrangements ensure that the capability and adequacy of the delivered engineering is understood, the design arrangements must ensure that the design basis and methodology is also understood, appropriate and documented.

In addition, to ensure that Sellafield Ltd gets the 'engineering design' services it requires from Suppliers it must be able to act as an Intelligent Customer (IC) to understand and manage the risks to the business of inadequate provision and to ensure that what was required is actually delivered. The design IC therefore provides assurance regarding the adequacy of the design. Governance and scrutiny is required at both the macro (site wide) and micro level (project/work package) to ensure the mix and balance of Sellafield Ltd employees, as well as the oversight and control of performance, delivery activities and outcome.

Whilst the Design IC must be discharged by Sellafield Ltd, the accountability for delivering a design that is safe, legal meets the requirement will rest with the organisation and individual undertaking the work. To ensure that this is assigned to competent organisations and individuals this accountability will be assigned as 'Design Approval' with a clear chain and flow down via defined role holders.

To achieve this relies upon:-

- Head of Design, Discipline Chief Engineers, Design Capability Leaders, Design Managers and Design Intelligent Customer roles being filled exclusively by Sellafield Ltd employees, SQEP'ed and appointed by Sellafield Ltd. In exceptional circumstances a non-Sellafield Ltd employee (e.g. Design Service Alliance resources) may be appointed, who must be seconded into Sellafield Ltd and additional steps taken to develop & retain core knowledge and understanding within Sellafield Ltd.
- Primary Design Delivery roles (Project Engineering Manager and Responsible Engineer) may be filled by non-Sellafield Ltd employees, SQEP'ed and appointed by Sellafield Ltd, with the overall mix of employee/non-employee scrutinised by Sellafield Ltd to ensure an understanding of the engineering is retained and that the best expertise is engaged.
- A person may concurrently be appointed to more than one role (but cannot concurrently be the Engineering Authority and the Designer), provided that workload does not diminish the ability to discharge each role, nor present a conflict of interest.
- Design Intelligent Customer roles shall cover discrete, complete Programmes or Work streams aligned with Delivery Directorate programme/work stream with no gaps i.e. design work not covered.

- No engineering design work, including drawing modification, shall be undertaken without assignment to and control by a Project Engineering Manager and/or Responsible Engineer. Where design work is undertaken directly by Enterprise Plant Engineering (e.g. generic designs, certain assessment and reviews) assignment and control will be by Responsible Engineers in the Plant Facing Design Organisation.
- Primary design delivery role holders (Project Engineering Manager and Responsible Engineer) shall be assigned discrete portfolios of work, of such size as to enable their full time engagement in their role and clearly bounded to avoid duplication and uncertainty in coverage.
- All key engineering roles shall be filled by persons who are Professionally Registered (Chartered or Incorporated as appropriate) or who possess and can demonstrate considerable relevant knowledge and experience of the duties and work to be undertaken.

1.13 Engineering Authority & Supply of engineering hardware IC.

Designer PEM / RE specifies design requirements and becomes default IC for acceptance. Also provides support to resolve design issues and provide authorisation / approval for design concessions. (Up to but excluding PFS which requires Eng A consideration)
Engineering Authority OUEM/SE shall specify requirement to witness certain critical activities e.g. Factory Acceptance tests, and system tests within modular builds.

1.14 Designer, Engineering Authority & Manufacturing / Construction IC.

The IC for Manufacturing & Construction is the SL Construction Manager (CM) who has the authority to accept manufactured / constructed work.

The Designer supports the CM by way of provision of Inspection, Test & acceptance criteria within design deliverables. Also provides support to resolve design issues and provide authorisation / approval for design concessions.

ICG also support the CM by the provision of an inspection service.
Engineering Authority OUEM/SE shall specify requirement to witness certain critical activities e.g. installation of key safety features or bespoke equipment

1.15 Designer, Engineering Authority & Commissioning IC.

The IC for Commissioning is the SL Commissioning Manager (CmM) who has the authority to accept commissioning work (as specified by the designer and the Eng A).

The Designer supports the CmM by way of provision of functional test & acceptance criteria within design deliverables. Also provides support to resolve design issues and provide authorisation / approval for design concessions.

Engineering Authority OUEM/SE shall specify requirement to witness certain critical activities e.g. functional testing of key safety features or bespoke equipment.

The Engineering Authority performs final acceptance of systems prior to handover, the associated records of configuration and the overall acceptance of the plant / modification prior to taking into service.

Once technical acceptance has been conferred by the Engineering Authority the formal transfer of "Ownership" between the Project Manager and the Operator (Owner) may be effected.

1.16 Designer, Engineering Authority & IC during modification of existing plant.

The foregoing principles apply equally to modification of plant and creation of new plant. The detailed implementation arrangements for minor modification must allow for the principles to be applied in a proportionate and pragmatic manner.

1.17 Engineering Authority & IC during maintenance

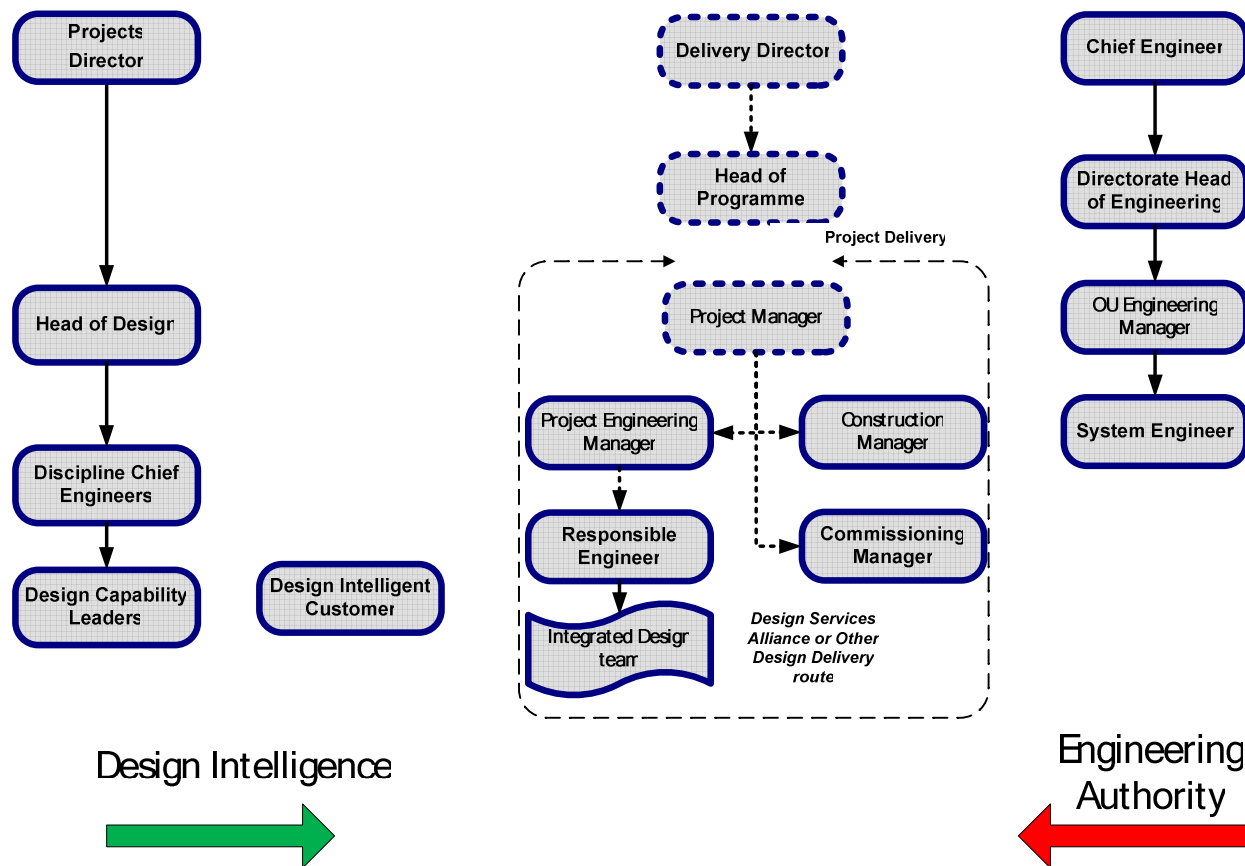
Enterprise Plant Engineering are the custodians of Engineering Authority throughout the plant lifecycle. With respect to maintenance the Authority defines the required maintenance regime for assets and assures the maintenance activities are carried out to the required standard and are achieving the required outcomes. Maintenance requirements and standards may be established on behalf of the Eng A by the Equipment Programmes and SME Leads within the EPE Capability (referred to as the Maintenance Authority (MA))

The Eng A role with respect to maintenance also includes maintenance carried out by the supply chain. This work is controlled under commercial arrangements which define the roles of Contracting Officers Technical Representative (COTR). Technical competence of the COTR is conferred by respective Lead SME (Maintenance Authority) within EPE. The MA provides governance through appropriate assurance and assessment activities

1.18 Specific accountability roles for discharging Engineering Authority and Intelligent Customer

Groups delivering and utilising engineering ensure that key role holders are SQEP in accordance with the following table. SQEP assessment criteria commensurate with the scale and complexity of the applied R2A2 shall be developed prior to assessment and authorisation of individual post holders.

Engineering Authority & Design Intelligence Organisation Model and Flow of Accountabilities



2. Accountabilities / Responsibilities

2.1 Specific accountability roles for discharging Engineering Authority and Intelligent Customer

Organisation Group	Individual Role	Resource Group	Appointing Person	Appointing Authority (responsible for SQEPing)	Role Ref
The Engineering Governing Body'	Chief Engineer	Enterprise Plant Engineering	Managing Director	Managing Director	EG01
The Engineering Governing Body'	Head of Plant Engineering Support	Enterprise Plant Engineering	Chief Engineer	Chief Engineer	PE01
The Engineering Governing Body'	Head of Engineering Assurance	Enterprise Plant Engineering	Chief Engineer	Head of Plant Engineering Support	EG02
The Engineering Governing Body'	Head of Plant Facing Design	Enterprise Plant Engineering	Head of Plant Engineering Support	Head of Design Engineering	
The Technical Governing Body'	Technical Director	Technical Directorate	Managing Director	Managing Director	
The Technical Governing Body'	Directorate Head of Technical	Delivery Directorate	Delivery Director	Technical Director	TC03
The Technical Governing Body'	Technical Manager	Delivery Directorate	Directorate Head of Technical	Directorate Head of Technical	TC08
The Technical Governing Body'	Head of Technical Assurance	Delivery Directorate	Directorate Head of Technical	Directorate Head of Technical	
The Projects Governing Body'	Head of Design Engineering	Design Capability	Project Director	Project Director	ED01
The Projects Governing Body'	Design Discipline Chief Engineer	Design Capability	Head of Design Engineering	Head of Design Engineering	ED05
The Projects Governing Body'	Design Capability Leader	Design Capability	Head of Design Engineering	Head of Design Engineering	ED07
The Engineering Authority'	Directorate Head Of Engineering	Enterprise Plant Engineering	Chief Engineer	Chief Engineer	PE03
The Engineering Authority'	OU Engineering Manager	Enterprise Plant Engineering	Directorate Head Of Engineering	Head of Plant Engineering Support	PE04
The Engineering Authority'	System Engineer	Enterprise Plant Engineering	OU Engineering Manager	Head of Plant Engineering Support	PE05
Programme Management Group	Design Manager	Delivery Directorate, Major Projects Directorate	Line Manager	Head of Design Engineering	ED08

Organisation Group	Individual Role	Resource Group	Appointing Person	Appointing Authority (responsible for SQEPing)	Role Ref
Programme Management Group	Design Intelligent Customer	Delivery Directorate, Major Projects Directorate	Line Manager	Design Discipline Chief Engineer	ED09
Project Delivery Group	Project Engineering Manager	Delivery Directorate, Major Projects Directorate	Line Manager	Head of Project Engineering Management	ED03
Project Delivery Group	Responsible Engineer	Delivery Directorate, Major Projects Directorate	Line Manager	Design Discipline Chief Engineer	ED04
Project Delivery Group	Construction Manager	Delivery Directorate, Major Projects Directorate	Line Manager	Head of Construction	PO09
Project Delivery Group	Commissioning Manager	Delivery Directorate, Major Projects Directorate	Line Manager	Head of Commissioning	PO02

2.2 Key Responsibilities (refer to R2A2 for full role requirements)

2.2.1 Chief Engineer

- Hold the role of Engineering Authority for Sellafield Ltd. Provide strong governance and internal regulation.
- Monitor, review and provide assurance on Plant Engineering matters.

2.2.2 Technical & Strategy Director

- Be the Technical Authority for SL on all matters in relation to technical strategy and technical design
- Monitor, review and provide assurance on nuclear technical matters. Provide strong governance and internal regulation in respect of these matters.

3 Definitions and Abbreviations

3.1 Definitions

None

3.2 Abbreviations

ASW	Agency Supplied Workers
DHoE	Directorate Head of Engineering
Eng A	Engineering Authority
EPE	Enterprise Plant Engineering
IC	Intelligent Customer
ICG	Inspection & Certification Group
LFE	Learning from experience
OUEM	Operating Unit Engineering Manager
ONR	Office for Nuclear Regulation
PFS	Plant Functional Specification
R2A2	Roles, Responsibilities, Accountabilities and Authorities
SL	Sellafield Ltd
SLC	Site Licence Company
SLMS	Sellafield Ltd Management System
SME	Subject Matter Expert
SQEP	Suitably Qualified and Experienced Person
TA	Technical Authority
V&V	Verification and validation
WANO	World Association of Nuclear Operators

4. References

SLP 4.01.11 How do I Create a New Role (R2A2) and Maintain a Role?
SLM 4.05.01 Sellafield Ltd Management Systems Manual

5. Amendment Record

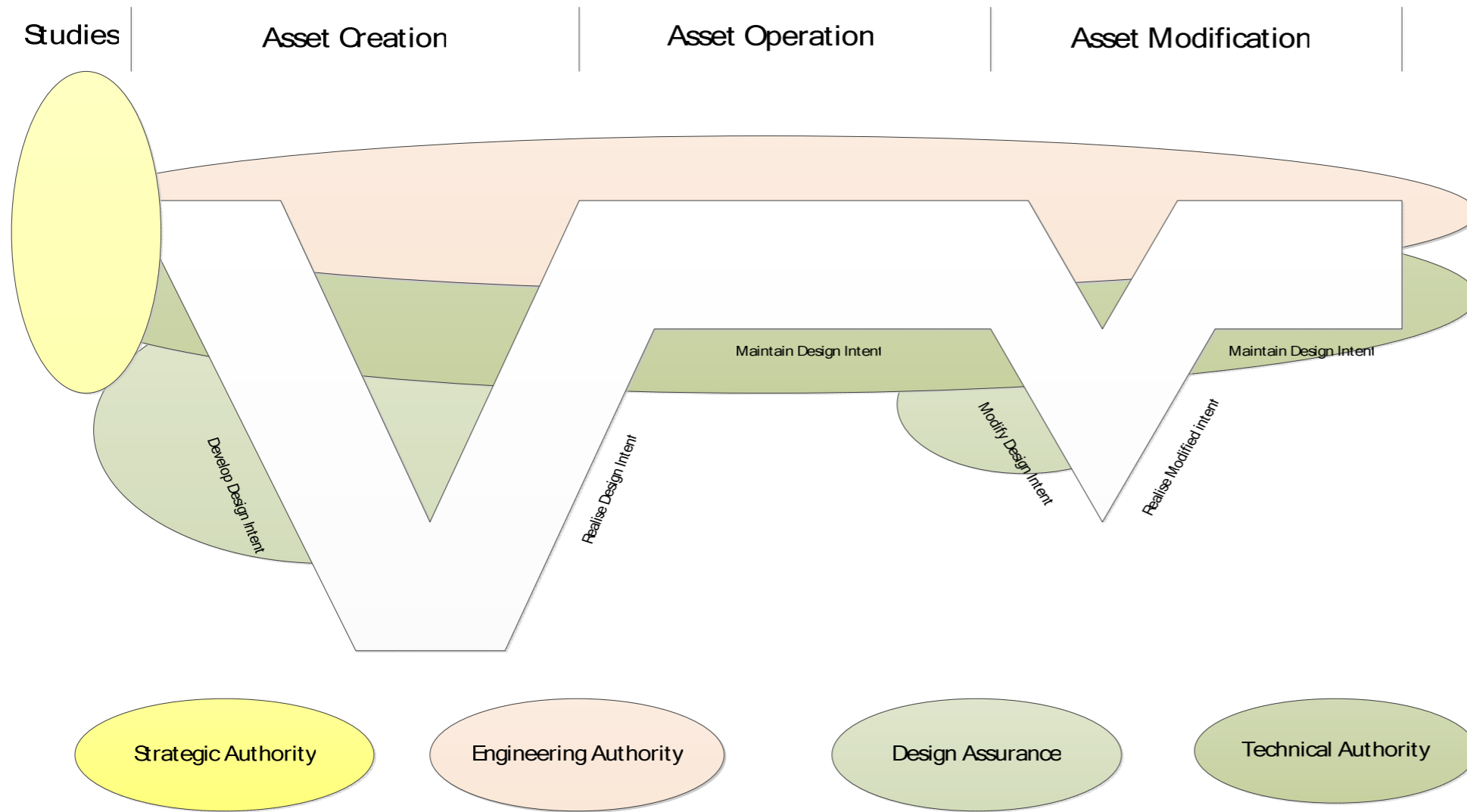
First Issue – This document replaces SLC 1.02.02

Appendix 1

Clarification of the roles of Technical Authority, Engineering Authority, Design Assurance and Strategic Authority

	Asset Creation	Existing Asset / Asset Modification	
<p>Outside the current strategic direction</p> <p>E.g. outside current Technical Baseline</p>	<p style="text-align: center;">Strategic Authority</p> <p style="text-align: center;">Duty Holder Representative : Head of Programme</p> <p>Strategic Authority role :Advice on Setting & Monitoring site strategies, the implication of moving to a different strategy</p> <p>Technical Authority: Advice on the adequacy of technical assessment and residual risks and uncertainties that could impact on the strategy</p> <p style="text-align: center;">e.g. Alternative Waste Strategy</p>	<p style="text-align: center;">Technical Authority</p> <p style="text-align: center;">Duty Holder Representative: Head of Operations / Safety Case Owner</p> <p>Technical Authority role: Advice on the adequacy of the technical assessment underpinning the safety or operating envelope.</p> <p>Engineering Authority role: Advice on the adequacy of capability of the asset to support a different operating regime</p> <p style="text-align: center;">e.g. Plant mission change</p>	<p>Outside the current strategic direction</p> <p>E.g. Outside current Design intent</p> <p>Notes (for consideration)</p> <ol style="list-style-type: none"> 1) Authorities may also be required to operate outside their principal areas. 2) Assurance activities will determine process adherence and suitability of outcomes. 3) Conscience will consider assurance outcomes and advise duty holders accordingly. 4) Authority will enforce conscience by escalation through duty holder hierarchy and instigation of remedial work 5) ONR Design Authority principles and WANO Technical Authority PO&Cs covered by Engineering Authority.
<p>Within the current strategic direction</p>	<p style="text-align: center;">Design Intelligence</p> <p style="text-align: center;">Duty Holder Representative: Project Engineering Manager</p> <p>Design Intelligence role: Advice on the outcome of the design solution and the application of fit for purpose design.</p> <p>Technical Authority role:- Advice on the Technology underpinning the design and the safety case.</p> <p>Engineering Authority role: Advice on the adequacy of the proposed design solution (against the functional specification) and adequacy of the engineering across the lifecycle e.g. operations & maintenance</p> <p style="text-align: center;">e.g. New plant (SAV) major extension (Evap D)</p>	<p style="text-align: center;">Engineering Authority</p> <p style="text-align: center;">Duty Holder Representative: System Engineer</p> <p>Engineering Authority role: Advice on the adequacy of the lifecycle management and associated risks.</p> <p>Technical Authority role:- Advice on the science underpinning the lifecycle management</p> <p>Design Intelligence: Advice on the outcomes of design for enhancements and modifications.</p> <p style="text-align: center;">e.g. Maintaining design intent, Plant Modification Proposals</p>	<p>Within the current strategic direction</p> <p>E.g. Within Normal Operating Boundaries</p>

Appendix 2 Authority Activities in plant lifecycle



Appendix 3 RACI (Responsible, Accountable (authority), Consult, Inform) by group.

Activity	Client 1 Specification & acceptance		Client 2 User of asset	Asset delivery :-Project			Comments
	Technical (TA)	Engineering (EA)	Operations (Programmes)	Design Intelligence	Construction	Commissioning	
Pre-Project							
Perform Studies			A/R				
Studies Governance	A						
Produce Functional Spec			A/R				
Operations Req'ts			A/R				
Technical Requirements	A/R						
Engineering Requirements		A/R					
Project							
Develop Design Solution				A/R			End of concept stage?
Accept Design Solution		A					
Oversee Supply Chain Design				A/R			
Develop Design Baseline				A/R			Bases of design, Design Intent, acceptance criteria etc etc
Oversee Supply Chain Construction					A/R		
Validate Physical conformity					A		Physical attributes: Topology, materials etc consistent with design baseline
Oversee Supply Chain Commissioning						A/R	
Validate Functional conformity						A	Functional attributes, control logic, plant sizing / performance etc
Maintain Technical Oversight	A/R						
Maintain Engineering Oversight		A/R					
Acceptance & Handover							
Validate Engineering Integrity		A					PFS Engineering requirements met, confidence in physical & functional validation.(DA hold point on permissioning control plan?)
Take custody of Physical Asset			A				
Take custody of Engineering Baseline		A					
Validate Performance			A				Plant throughput achieved prior to project completion
Post Project							
Operate & Maintain Asset			A/R				
Protect & Maintain Technical Baseline	A						Relates to product within plant
Protect & Maintain Engineering Baseline		A					Relates to the plant