

Project-Framing Questions

Springfield Nuclear New-Build Initiative

The Springfield Nuclear New-Build Initiative is a fictional major-project governance and assurance model developed within PHC Port. It imagines the replacement or augmentation of Springfield's famously idiosyncratic generating station through a modern nuclear new-build programme covering strategic definition, consenting, financing, engineering, procurement, construction, commissioning, operational readiness and eventual benefits realisation. The model is designed as a shadow programme rather than a technical reactor design. Its emphasis is the management system surrounding delivery: how leaders obtain reliable information; how uncertainty is identified and assessed; how actions and decisions remain traceable; how interfaces are controlled; how schedule and cost pressures are prevented from overwhelming safety, quality and assurance; and how contributors at every level can provide evidence without the programme disappearing beneath layers of polished but uninformative reporting. PHC provides the organising framework. Concerns are used to describe conditions requiring attention, CLAMPED entities provide structured project records, Timechunks evidence contribution, and reports draw from maintained source information rather than being reconstructed at the end of each reporting period. The intention is to show how a continuously maintained evidence base could support challenge, escalation, intervention and accountable decision-making throughout a complex programme. The setting is knowingly playful: Springfield politics may be volatile, the plant owner may regard governance as an avoidable overhead, and the control room may occasionally be distracted by confectionery. The controls, however, are intended to be recognisable, transferable and serious.

PROGRAMME DEFINITION AND GOVERNANCE

BIQ01 - What is the official project or programme name, who is the sponsoring organisation, and who is the accountable executive contact?

Springfield Nuclear New-Build Initiative, sponsored for demonstration purposes by Springfield Energy Development Corporation. Accountable executive contact: C. Montague Furness, Executive Sponsor.

BIQ02 - What strategic need or business problem is the project intended to address?

The project is intended to provide dependable long-term low-carbon electricity capacity for Springfield while replacing ageing generation assets and strengthening regional energy resilience.

BIQ03 - What are the principal project objectives, and how will success be measured?

Success will be measured through achievement of approved safety, quality, cost, schedule, regulatory and operational-readiness objectives, supported by evidence that major risks and decisions are actively controlled.

BIQ04 - What is included within the approved scope, and what is explicitly excluded?

The illustrative scope includes development, design, licensing support, procurement, construction, commissioning preparation and governance of a new nuclear generating facility. Detailed reactor technology selection and final investment approval remain outside the current demonstration baseline.

BIQ05 - What lifecycle stage is the project currently in, and what are the next formal decision or approval gates?

The project is presented as being in early definition and mobilisation. The next gates are confirmation of the business case, preferred technical option, regulatory engagement strategy, delivery model and an approved integrated baseline.

BIQ06 - What governance structure applies, including boards, delegated authorities, decision rights and escalation routes?

The proposed structure comprises an Executive Sponsor, Programme Board, Technical and Safety Authority, Project Controls function, Commercial function and independent assurance reviews, with defined delegated authority and escalation thresholds.

BIQ07 - Which legal, regulatory, contractual, safety, security or policy obligations most strongly shape the project?

The project would be shaped by nuclear safety and security regulation, environmental permitting, planning consent, construction law, quality requirements, contractual obligations, information security and public accountability expectations.

BIQ08 - What are the most important assumptions, constraints and external dependencies?

Key assumptions and dependencies include regulatory acceptability, availability of specialist capability, grid connection, supply-chain capacity, financing, land and consent arrangements, technology maturity and sustained political and community support.

BIQ09 - What approved baselines currently exist for scope, schedule, cost, risk and benefits, and when were they last reviewed?

No fully approved integrated baseline is yet assumed. Initial scope, milestone, cost and risk positions are being assembled and will require formal challenge, reconciliation and approval before being treated as controlled baselines.

BIQ10 - What are the three most important decisions or control improvements required in the next 90 days?

1. Confirm governance and decision authority. 2. Establish an integrated scope, schedule, cost and risk baseline. 3. Define the regulatory, technical assurance and evidence strategy.

DELIVERY MODEL AND ASSURANCE

PSQ01 - What delivery model is proposed, and how is the programme divided into workstreams, projects or major packages?

The proposed model separates sponsor governance, design and licensing, enabling works, major equipment procurement, construction, commissioning preparation and operational-readiness activities, with programme-level integration across all packages.

PSQ02 - What are the principal deliverables, and what acceptance criteria will demonstrate that each is complete and fit for purpose?

Principal deliverables include the business case, regulatory submissions, reference design, site and enabling-work packages, procurement packages, integrated controls baseline, safety and quality plans, commissioning strategy and operating-readiness evidence. Each requires named acceptance criteria and approving authority.

PSQ03 - What are the key milestones, schedule drivers and current critical or near-critical paths?

Likely schedule drivers include licensing and consent decisions, design maturity, long-lead equipment, site preparation, civil construction, systems integration, testing and commissioning. The critical path remains provisional until the integrated schedule is sufficiently developed.

PSQ04 - How are risks and opportunities identified, assessed, quantified, owned, treated and escalated?

Risks and opportunities are intended to be captured in controlled registers, assessed qualitatively and where appropriate quantitatively, assigned to named owners, linked to actions and evidence, and escalated against agreed thresholds.

PSQ05 - How are scope, design, schedule, cost and organisational changes proposed, assessed, approved and incorporated into the baseline?

A formal change-control process is required, including impact assessment across safety, technical, schedule, cost, commercial, regulatory and stakeholder dimensions before approval and baseline incorporation.

PSQ06 - What assurance reviews, stage gates, peer reviews or independent challenges are required, and who has authority to accept the findings?

The project will require sponsor reviews, technical peer reviews, safety and quality assurance, project-controls reviews, commercial reviews and independent gate assurance. Acceptance authority must be defined for each review type.

PSQ07 - How will quality requirements, verification, validation, inspection, testing and non-conformance be controlled?

Quality will be controlled through approved plans, graded requirements, document and configuration control, inspection and test plans, supplier surveillance, non-conformance management, corrective actions and traceable acceptance evidence.

PSQ08 - What are the most important technical, organisational and contractual interfaces, and how are they managed?

Critical interfaces include sponsor to delivery partner, design to construction, regulator to programme, civil works to systems installation, suppliers to integrator, construction to commissioning, and programme delivery to future operator.

PSQ09 - What procurement and supply-chain strategy applies, particularly for specialist, long-lead or safety-significant items?

The strategy should identify make-or-buy decisions, prequalification requirements, long-lead commitments, nuclear quality expectations, capacity constraints, supplier assurance, obsolescence risks and contingency arrangements.

PSQ10 - How will commissioning, handover, operational readiness and benefits realisation be planned and evidenced?

Commissioning and handover will require an integrated strategy covering system turnover, test evidence, defect resolution, operating procedures, trained personnel, configuration status, regulatory permissions and confirmation that intended benefits remain achievable.

SYSTEMS, INFORMATION AND EVIDENCE CONTROL

PEQ01 - Which systems are the authoritative sources for scope, schedule, cost, risk, actions, changes, documents and evidence?

The demonstration assumes several existing tools and repositories but no fully integrated source-of-truth architecture. Authoritative ownership and system boundaries must therefore be defined.

PEQ02 - How are documents numbered, reviewed, approved, revised, distributed, retained and withdrawn from use?

A controlled document-management process is required with unique identifiers, status codes, review and approval workflows, revision history, access control, distribution records and withdrawal of superseded information.

PEQ03 - What evidence is required to substantiate reported progress, completed actions, accepted deliverables and closed risks or concerns?

Status claims should be supported by traceable evidence such as approved documents, inspection records, meeting decisions, schedule updates, cost records, photographs, test results, correspondence and acceptance certificates.

PEQ04 - How are configuration, version and baseline changes controlled so that teams know which information is current?

Configuration control should identify approved baselines, authorised changes, current revisions, affected interfaces and the status of implementation across documents, models, systems and physical assets.

PEQ05 - What data-quality rules apply, and who is responsible for checking completeness, consistency, timeliness and accuracy?

Each controlled dataset should have a named owner, defined update frequency, validation rules, exception checks and a transparent audit trail showing corrections and late or missing information.

PEQ06 - How are confidentiality, security classification, access permissions and personal or commercially sensitive information managed?

Information should be classified and accessed according to role, need, contractual obligation and security requirement, with protected handling of nuclear, personal, commercial and security-sensitive material.

PEQ07 - What reporting cycle is used, which dashboards or reports are produced, and who relies on each output for decisions?

The proposed cycle includes daily exception visibility, weekly package review, monthly programme-health reporting and gate-specific assurance packs, with each output linked to named decision-makers and actions.

PEQ08 - How are schedule, cost, risk, actions, changes, decisions and evidence linked so that impacts can be traced across the programme?

The project requires common identifiers and controlled relationships between work packages, deliverables, milestones, risks, actions, decisions, changes and supporting evidence.

PEQ09 - What backup, disaster-recovery, cyber-resilience and business-continuity arrangements protect project information?

Formal arrangements should cover resilient storage, tested backups, recovery objectives, access continuity, cyber incident response, critical-system dependencies and retention of essential evidence.

PEQ10 - What current information gaps, duplicated systems or manual workarounds create the greatest control risk?

The principal illustrative weaknesses are fragmented registers, inconsistent identifiers, manual reconciliation, uncertain document status, weak linkage between decisions and evidence, and reporting that may conceal rather than expose exceptions.

ORGANISATION, CAPABILITY AND INTERFACES

PQ01 - Who holds the principal accountable roles, and what are their responsibilities and delegated authorities?

Executive Sponsor: C. Montague Furness. Programme Director: Eleanor Voss. Engineering Director: Dr Imran Keel. Project Controls Director: Maeve Carter. Safety, Security and Regulation Director: Helen Ward. Commercial Director: Julian Pike.

PQ02 - What organisation structure is currently in place, and which key posts are vacant, interim, duplicated or unclear?

A sponsor-led core team is assumed, but several delivery, assurance, regulatory, commissioning and specialist project-controls roles remain to be confirmed as the programme definition matures.

PQ03 - What capabilities and experience are essential for the current phase, and where are the most significant gaps?

Priority capabilities include nuclear regulation, safety case development, systems engineering, major-project controls, quantitative risk analysis, supply-chain assurance, commercial strategy, commissioning and independent assurance.

PQ04 - What resource plan exists, including mobilisation dates, demand peaks, scarce skills and reliance on contractors or secondees?

The resource plan is not yet fully developed. It must align capability demand to lifecycle stages and identify scarce disciplines, recruitment lead times, supplier dependencies and continuity risks.

PQ05 - How are contractors, consultants, delivery partners and suppliers selected, instructed, supervised and held accountable?

Third parties should operate under clear scopes, deliverables, acceptance criteria, reporting obligations, assurance rights, performance measures and escalation arrangements.

PQ06 - Which organisational interfaces are most vulnerable to gaps, duplication, delay or conflicting authority?

Likely vulnerabilities include sponsor versus delivery authority, design versus construction ownership, regulator interfaces, package boundaries, commercial versus technical decisions, and construction-to-commissioning handover.

PQ07 - What is the formal meeting, review and decision-making rhythm, and how are actions and decisions recorded?

The intended rhythm includes daily exception management, weekly workstream reviews, monthly programme boards and scheduled assurance gates, with controlled minutes, decisions, actions, owners and due dates.

PQ08 - What escalation routes and thresholds apply when safety, cost, schedule, quality, commercial or regulatory limits are threatened?

Escalation should be based on defined thresholds and decision rights, with immediate routes for safety or regulatory matters and time-bound escalation for cost, schedule, quality, commercial and interface exceptions.

PQ09 - What workload, continuity, succession or key-person risks could weaken delivery or assurance?

Key risks include overreliance on a small number of specialists, delayed mobilisation, competing accountabilities, loss of corporate knowledge, reviewer overload and insufficient succession planning.

PQ10 - What behaviours, incentives or cultural factors may discourage challenge, delay escalation or distort reporting?

Potential concerns include optimism bias, pressure to protect milestones, reluctance to disclose uncertainty, fragmented accountability, excessive deference to seniority and rewarding apparent progress rather than evidenced progress.

COMMERCIAL, FUNDING AND COST CONTROL

FQ01 - What funding sources, approvals and financial commitments currently support the project?

The illustrative project assumes sponsor-funded development activity subject to staged approvals. Full construction funding and final investment authority have not yet been represented as approved.

FQ02 - What is the current estimate or budget, what is its basis, and what level of confidence or maturity does it have?

No definitive project value is assigned in this demonstration. Early estimates would require a documented basis, scope assumptions, pricing date, escalation treatment, risk allowance and confidence range.

FQ03 - How are the cost baseline, contingency, management reserve and quantified risk exposure established and controlled?

The commercial baseline should distinguish base estimate, allocated contingency, management reserve and quantified risk exposure, with clear authority for drawdown and replenishment.

FQ04 - How are actual cost, commitments, accruals, forecast outturn and variance reported and reconciled?

A monthly cost-control process is required to reconcile actuals, commitments, accruals, approved changes, risk drawdown and estimate-at-completion against the controlled baseline.

FQ05 - Which contract and commercial models are proposed, and where do liability, incentive or risk-allocation concerns remain?

Contract strategy remains to be defined. Particular attention is required for design responsibility, interface liability, target-cost incentives, change mechanisms, quality obligations, delay exposure and supplier financial resilience.

FQ06 - What major procurement commitments or long-lead decisions must be made before full certainty is available?

Potential early commitments include specialist design services, site investigations, licensing support, long-lead plant and strategic supplier capacity, each requiring explicit treatment of uncertainty and cancellation exposure.

FQ07 - What current or foreseeable changes, claims, disputes or commercial exposures could materially affect the project?

Likely exposures include scope evolution, regulatory change, design development, inflation, supply constraints, interface delay, rework, productivity assumptions and disagreements over responsibility.

FQ08 - How are value, affordability, whole-life cost and alternative options challenged before major commitments are approved?

Decisions should be supported by option appraisal, value engineering, whole-life cost analysis, sensitivity testing, risk-adjusted comparison and independent challenge of assumptions.

FQ09 - What financial controls, segregation of duties, audit rights and record-keeping requirements apply?

The project should maintain delegated financial authority, segregation of initiation and approval, controlled procurement, auditable transactions, contract records, cost evidence and independent review rights.

FQ10 - What affordability, cash-flow or funding thresholds could cause delay, rephasing or loss of project viability?

Critical thresholds include failure to secure staged approvals, escalation beyond affordability limits, inadequate contingency, supplier cash-flow failure, delayed financing decisions and commitments made ahead of evidence.

STAKEHOLDERS, COMMUNICATIONS AND PUBLIC CONFIDENCE

MQ01 - Who are the principal internal and external stakeholders, and what authority, influence or exposure does each have?

Stakeholders include sponsor leadership, project teams, future operators, regulators, government bodies, local authorities, supply-chain partners, workforce representatives, nearby communities, consumers and the wider public.

MQ02 - What are the principal expectations, concerns and potential points of conflict among those stakeholders?

Expected concerns include safety, affordability, schedule credibility, environmental impact, local benefit, transparency, land and infrastructure effects, employment, security and confidence in the sponsor's competence.

MQ03 - What communication and engagement channels are used, and how is feedback converted into controlled actions or decisions?

Channels may include formal submissions, stakeholder forums, public briefings, meetings, correspondence and digital comment intake. Material feedback should be classified, assigned, answered and linked to actions, decisions or evidence.

MQ04 - How are regulatory, governmental and local-authority relationships coordinated and documented?

Each formal interface should have a named owner, engagement plan, correspondence record, commitments register, action tracking and clear distinction between informal discussion and authoritative direction.

MQ05 - What impacts, benefits or burdens may be experienced by communities, workers, customers and the local economy?

Potential effects include employment and supply-chain opportunities, infrastructure investment, construction disruption, environmental concern, housing and transport pressure, skills development and long-term energy resilience.

MQ06 - What consultation commitments, undertakings or stakeholder promises have been made, and how are they tracked?

No formal commitments are assumed for this demonstration. Any future undertaking should be recorded with owner, source, due date, status, supporting evidence and consequences of non-delivery.

MQ07 - What reputational risks, misinformation or unresolved public concerns could undermine confidence in the project?

Risks include overstating certainty, inconsistent messages, slow responses, visible control failures, unclear accountability, dismissal of legitimate challenge and confusion between fictional demonstration content and real project claims.

MQ08 - What information should be transparent, and what information must remain restricted for legal, commercial, privacy or security reasons?

The project should publish proportionate information on purpose, governance, progress, concerns and decisions while protecting security-sensitive, personal, commercially confidential, legally privileged and regulator-restricted information.

MQ09 - How are lessons learned, stakeholder feedback and operating experience captured and incorporated into future decisions?

Lessons should be recorded as evidence-backed observations, assigned for evaluation, linked to affected requirements or plans, and tracked through agreed changes rather than retained only in meeting notes.

MQ10 - What concise evidence-based update could be issued regularly to demonstrate project health without overstating certainty?

A monthly project-health update could show approved milestones, major concerns, risk movement, overdue actions, decisions taken, evidence added, changes approved and the areas where confidence remains limited.