

New Nuclear Power Plants: Early Engagement for Regulatory Pathways



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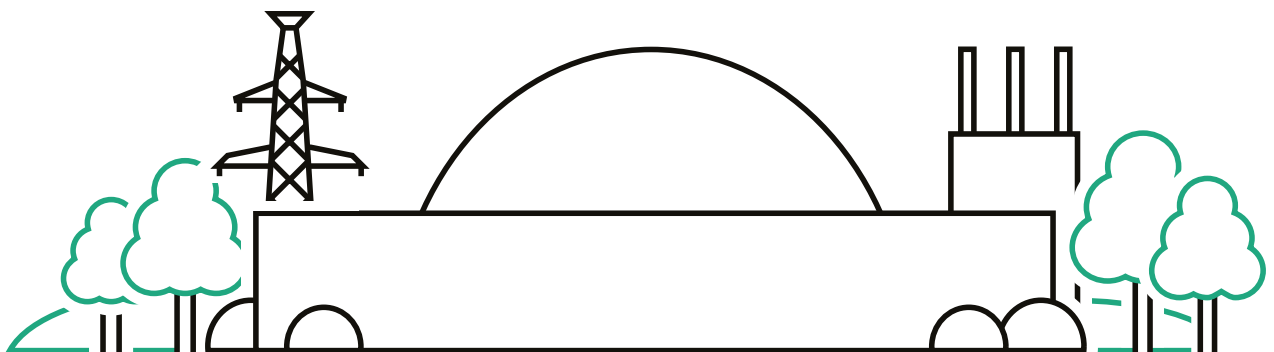
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Introduction

Background

The Office for Nuclear Regulation (ONR), the Environment Agency and Natural Resources Wales (NRW) ('the regulators') are working together to make sure that any new nuclear power plants built in Great Britain (GB) meet the standards for safety, security, safeguards, environmental protection and waste management.

This guidance describes a new early engagement process for persons seeking to deploy reactor technology, which will take place prior to formal regulation or the generic design assessment process.

Regulation of new nuclear

ONR is the independent regulator of safety, security and safeguards at nuclear licensed sites in GB. It also regulates radioactive materials transport and ensures that nuclear safeguards obligations for the UK are met.

The Environment Agency's and NRW's regulatory responsibilities only extend to England and Wales, respectively. The principal aim of the Environment Agency and NRW is to protect or enhance the environment, and to contribute towards achieving sustainable development.

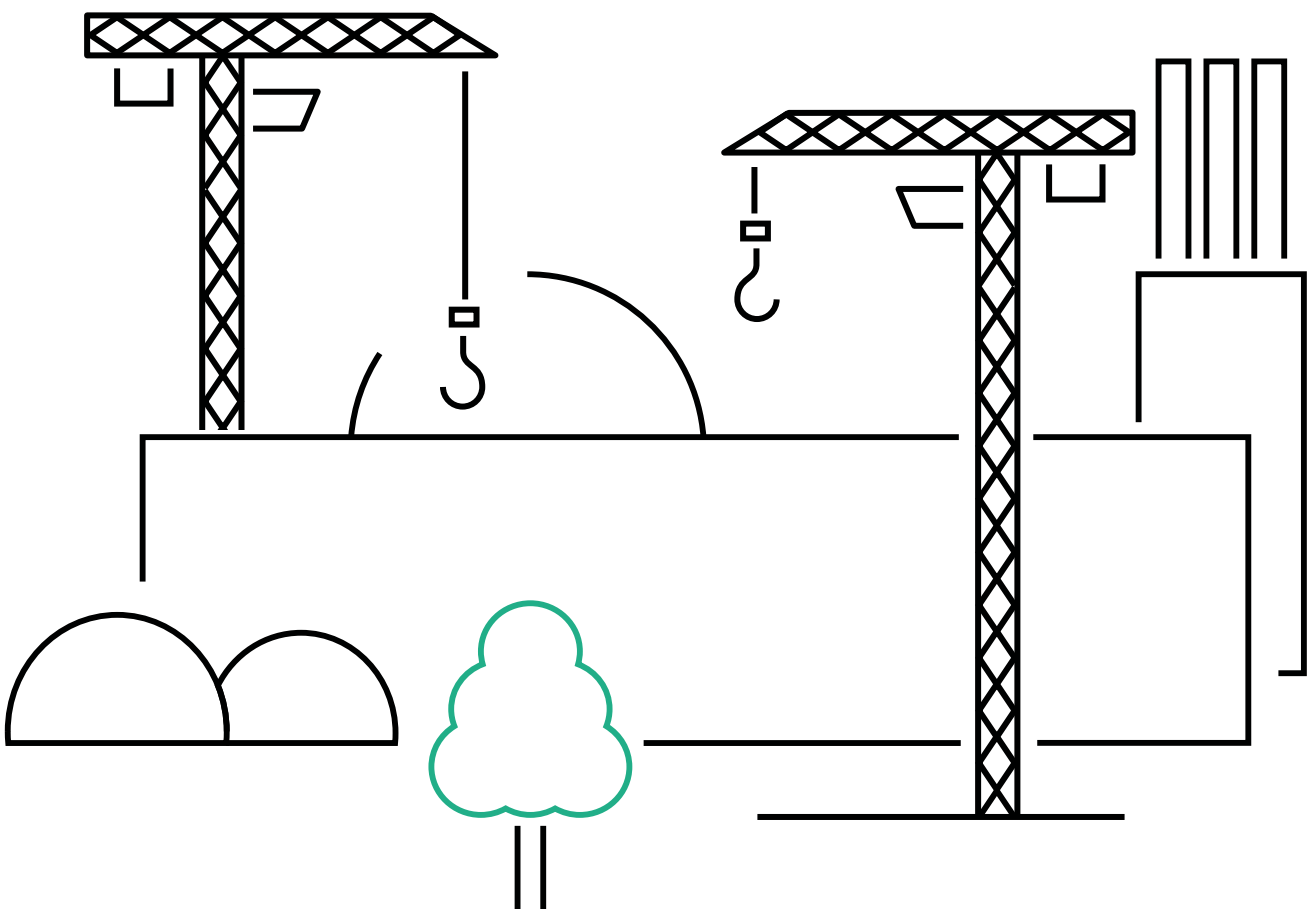
The regulators are required to issue licences and permits for new nuclear power plants in accordance with statutory provisions. Further licences, consents and permits will be required from other bodies, for example from the Planning Inspectorate in relation to planning consents for Nationally Significant Infrastructure Projects, and from other government agencies such as the Department for Environment, Food & Rural Affairs, which owns the process for justification of proposed facilities as required by the Justification of Practices Involving Ionising Radiation Regulations 2004. Engagements with other such bodies are outside of the scope of this process.

Purpose of this guidance

This guidance describes a multi-tiered process to give advice and guidance, both on the technical reactor design and the potential pathways through optional and mandatory regulatory processes. It is available to any party requesting early engagement on a proposed deployment in GB, including reactor technology vendors, developers or aspirant licence/permit holders (or consortia of these).

This guidance explains:

- how the early engagement process is intended to work;
- our expectations for entering early engagement;
- the subjects on which we are able to provide advice and guidance; and
- the benefits and possible outcomes from early engagement.



Early Engagement Process

Overview

The approaches described in this document are not mandatory, prescriptive, or fixed in scope. Our joint objectives for early engagement are:

- to facilitate access to regulators as early as possible, outwith more formal processes, such that organisations can benefit from early advice and guidance; and
- to gain early confidence in the potential for new nuclear projects to meet regulatory expectations, such that we can make informed decisions on the deployment of regulatory resource.

There are three approaches, or tiers, to early engagement:

- one-day engagement - an introductory engagement which is a pre-requisite for any subsequent engagement;
- process and technical engagements; and
- preliminary design review.

The format, objectives and outputs of each tier are set out in Table 1. Each tier is further described in Section 3.

Entry into early engagement

Requests for early regulatory engagement will be subject to prioritisation, and the scheduling of such engagements will be contingent upon the availability of regulatory resources.

Requests for early regulatory engagement should be made to contact@onr.gov.uk. We will ask the Department for Energy Security and Net Zero (DESNZ) to undertake due diligence checks on our behalf to enable us to determine eligibility to proceed.

Entry into early engagement is also dependent on the applicant entering into agreements allowing the regulators to recover our costs.

The information provided during the one-day engagement will inform our decision on whether the organisation is ready to progress to the subsequent tiers of early engagement, and on what timescales. This is to ensure our regulatory resource is targeted on projects that are most likely to progress and are in line with government policy. The type of factors we will consider are:

- the maturity of the technology and supporting analyses; and
- the status of the development company and the feasibility of its plans.

We anticipate that not all requests for engagements will be supported beyond the one-day event.

Summary of Early Engagement Tiers

One Day

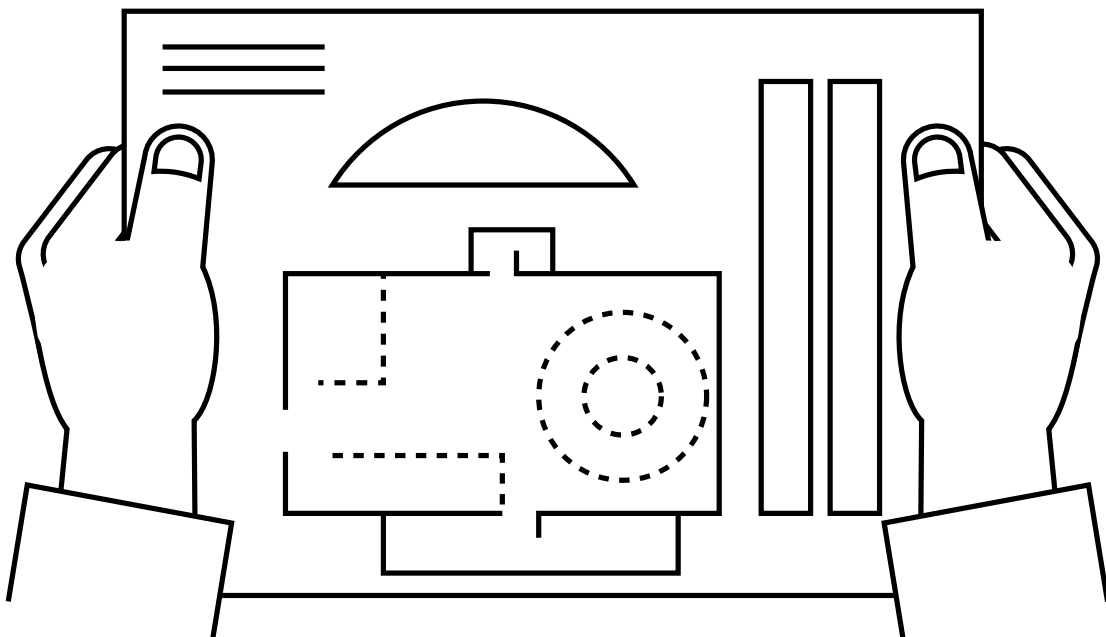
What is it?	• Information exchange to further understanding
What is it not?	• An indication of readiness to progress to subsequent tiers of early engagement
Format	• Face-to-face meeting
Objectives	<ul style="list-style-type: none"> • Further the applicant’s understanding of the UK regulatory framework, and available pathways • Further regulators’ understanding of the applicant’s plans for deployment in GB
Prerequisites	<ul style="list-style-type: none"> • Application to contact@onr.gov.uk; DESNZ advises successful due diligence checks • Cost recovery agreements in place with regulators
Output	• Contact Record of engagement

Process and technical engagements

What is it?	• Structured technical workshops to explain agreed subjects of interest in further detail
What is it not?	• An indication of readiness to progress to GDA and/ or licensing/ permitting
Format	• Up to ten workshops, two to four hours in duration
Objectives	<ul style="list-style-type: none"> • Regulators explain in further detail the specifics of regulatory pathways, and the requirements and expectations of each • Applicant receives advice on specific aspects on its design and deployment plans to inform onward strategy
Prerequisites	<ul style="list-style-type: none"> • One-day engagement completed Regulators agree on readiness to proceed Cost recovery agreements in place with regulators
Output	<ul style="list-style-type: none"> • Contact Records of workshops Residual areas of concern/ interest identified and agreed

Preliminary design review

What is it?	<ul style="list-style-type: none"> • Technical review of aspects of the design, based on regulatory submissions on agreed topics
What is it not?	<ul style="list-style-type: none"> • A substitute for GDA • An indication that the design is ready to enter GDA • An indication that any potential GDA will be successful.
Format	<ul style="list-style-type: none"> • Face-to-face meeting
Objectives	<ul style="list-style-type: none"> • Further the applicant's understanding of the UK regulatory framework, and available pathways • Further regulators' understanding of the applicant's plans for deployment in GB
Prerequisites	<ul style="list-style-type: none"> • One-day engagement completed • Regulators agree on readiness to proceed
Output	<ul style="list-style-type: none"> • Contact Records of engagements • Summary report indicating regulators' confidence that the design can potentially meet expectations



Early Engagement Tiers

One-day engagement

Scope & purpose

The purpose of the one-day engagement is for the regulators to:

- understand the proposed technology and plans for deployment;
- set out the UK regulatory framework, including an overview of the GDA, licensing and permitting processes; and
- set out the regulatory pathways available, highlight early and major risks, and define information requirements for each stage and key hold points.

Depending on the maturity of the applicant's organisation and deployment plans, the engagement could also include initial dialogue on specific matters such as:

- the applicant's plans and high-level programme for deployment in GB, including for design development, licensing, permitting and construction;
- plans for development in other countries and engagement with other regulators;
- information on preferred site(s) and plans to obtain security of tenure;
- plans to navigate the wider regulatory framework including planning, nuclear liability insurance and funded decommissioning programme; and
- requirements for export licences, to allow exchange of information with parties based overseas, for any subsequent regulatory engagement.

Preparation

- The following on-line seminars provide foundation knowledge on the UK's goal-setting regulatory regime and the structure and content of demonstrations required by the regulators; these should be viewed ahead of the one day engagement.
- [UK Goal Setting Legislation](#)
- [UK Nuclear Safety Case Structure](#)
- [GDA and Licensing Processes](#)
- [GDA and Environmental Permitting](#)
- [Nuclear Safeguards](#)
- [Nuclear Security](#)

Outputs

The regulators will provide a written record ('Contact Record') of the engagement discussion points and outcomes.

Regulatory process & technical engagements

Scope & purpose

This is a series of structured engagements on a range of topics to be agreed between the applicant and the regulators, selected based on technical risk, building on the one day engagement and explaining in much greater detail the specific matters of interest.

Process

Engagements will commence with an introductory session to agree the scope of the main engagements. This will be followed by up to ten sessions, typically two to four hours in duration, covering the agreed topics, which could include:

- Technology design overview and novel features.
- Safety analysis.
- Demonstration of BAT.
- Supply chain and quality assurance.
- Security by design expectations.
- GDA options and expectations.
- Siting, licensing and justification process.
- Deployment options.

Following the main engagements there will be a final half-day session to conclude the engagements and discuss the applicant's proposed way forward.

Outputs

The regulators will provide written records ('Contact Record') of the engagements. These will identify any residual issues, or areas requiring further work prior to entry into subsequent regulatory processes.

Preliminary design review

Scope & purpose

This is a technical review of certain aspects of the design, based on regulatory submissions provided by the applicant.

A preliminary design review is not a substitute for GDA, and it does not necessarily mean that the design is ready to enter GDA. Similarly, it should not be taken as an indication that any potential GDA will lead to a design acceptance confirmation or statement of design acceptability.

Process

Under the preliminary design review the applicant will provide up to six submissions for regulatory review.

The process starts with an opening engagement, to discuss the objectives and regulators' expectations for the preliminary design review. The applicant will also be expected to present information on the design aspect to be reviewed, highlighting the key safety, security and environmental features.

The regulators and the applicant will then agree the scope and programme for the regulatory submissions. Where there are known technical challenges associated with the type of technology, we will require those areas to be included. For example, for liquid metal or molten salt cooled reactors there is currently no known waste disposal route. The technical submissions are expected to demonstrate that, for the topic(s) in question, the regulatory expectations and risks are well understood and there is a credible plan to address them.

Once the scope and programme have been agreed, the review of regulatory submissions will follow the process outlined in Table 2.

Stage	Purpose	Indicative Timescales
Regulatory Expectations Meeting	To allow regulators to set out their expectations for the specific topic(s)	Four weeks before the submission deliverable date
Submission presentation	To allow the applicant to outline the content of the presentation To give regulators an opportunity to ask initial questions ahead of the submission	One week before the submission deliverable date
Regulators' review	For regulators to form a view on the extent to which expectations are met for the specific topic(s), and identify potentially significant shortfalls	Four weeks
Regulators comments provided	Written comments or clarification questions provided by the regulators	Within four weeks of submission deliverable date
Response to comments	Applicant provides a written response to the regulators' comments	Within two weeks of receipt of comments
Comment workshop	For the applicant and regulators to discuss any unresolved comments To agree plan for resolution of outstanding issues prior to further regulatory engagement on the topic(s)	Two weeks after comment responses received

Table 2: Preliminary design review process

Outputs

The regulators will summarise the outcomes from the preliminary design review in a summary report. This will set out the comments raised against each submission, as well as the action taken to address them, and will provide an indication of the regulators' confidence that expectations can be met should the design be taken forward into subsequent regulatory processes.

Facilitating Early Engagement

Early engagement is a joint offering provided by the regulators.

It will be subject to suitable contractual agreements being in place to enable the regulators to recover their costs.

ONR recovers its costs for early engagement through provisions in 'The Energy Act 2013', the 'Health and Safety and Nuclear (Fees) Regulations 2022', and 'The Nuclear Industries Security (Fees) Regulations 2005'.

The Environment Agency recovers the costs of its early engagement work, and any preliminary discussions with an applicant, using a Sections 37/43 agreement under the 'Environment Act 1995'. If NRW are involved a similar agreement for recovery of costs would be set up under the 'Natural Resources Body for Wales (Establishment) Order 2012'.

Meetings would normally be hosted by the applicant, at a venue selected for mutual convenience, confidentiality and security. Alternatively, meetings may be held remotely using an agreed method.

The regulators will maintain and publish a list of organisations who have engaged using the processes covered in this guidance.

Annex - Other Relevant Guidance

It would be beneficial for any applicant to have prior knowledge of the regulatory framework and regulatory processes prior to commencement of early engagement.

GDA is an established process aimed at providing confidence that a proposed design is capable of being constructed, operated and decommissioned in accordance with the expected standards of safety, security, safeguards and environmental protection. The regulators have published guidance on the GDA process:

- ONR guidance for Requesting Parties: <https://www.onr.org.uk/new-reactors/onr-gda-gd-006.pdf>
- ONR technical guidance: <https://www.onr.org.uk/new-reactors/reports/onr-gda-007.pdf>
- Generic Design Assessment guidance for Requesting Parties: <https://www.gov.uk/government/publications/new-nuclear-power-plants-generic-design-assessment-guidance-for-requesting-parties>

It is a mandatory requirement for the construction and operation of a specific design at a designated site to be licensed and permitted. ONR's expectations for nuclear site licensing are set out in the guide to licensing nuclear installations:

- <https://www.onr.org.uk/licensing-nuclear-installations.pdf>

ONR has published assessment principles that set out regulatory expectations when undertaking technical assessments across its regulatory purposes:

- Safety Assessment Principles (SAPs): <https://www.onr.org.uk/saps/saps2014.pdf>
- Security Assessment Principles (SyAPs): <https://www.onr.org.uk/syaps/security-assessment-principles.pdf>
- ONR Nuclear Material Accountancy, Control and Safeguards Assessment Principles (ONMACS): <https://www.onr.org.uk/operational/other/onr-cnss-man-001.pdf>

The Environment Agency's approach and guidance to Radioactive Substances Regulation (RSR) permitting is set out in:

- <https://www.gov.uk/guidance/nuclear-sites-rsr-environmental-permits>
- <https://www.gov.uk/government/publications/radioactive-substances-regulation-rsr-objective-and-principles>

NRW participates in early engagement where a new nuclear power plant design is likely to be proposed for construction in Wales. NRW carries out its review in accordance with legislation applicable in Wales. Further information can be found at:

- <https://naturalresources.wales/RegulatingNuclearSites?lang=e>

