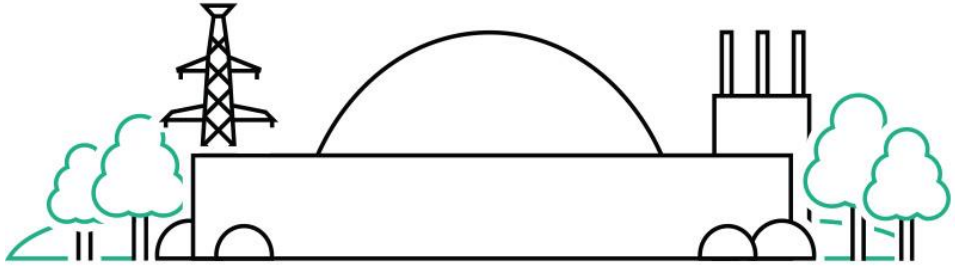
Office for Nuclear Regulation

ONR NGO Climate Change Workshops

London

22 October 2024



Provisional Agenda

Topic	Time	
Arrival and refreshments	**9.30 – 10.00**	
Opening introductions • Purpose of the workshops • How we got here • What we'd like to achieve – Agreement of the Terms of reference	10.00 – 10.15	Co-Chairs – Sarah Brown (ONR) and Katy Attwater (NGOs)
Updates since we last met: • CNI themed Inspection Report Update • Updates to regulatory position in relation to climate change • Expectations for licensees to update the live safety case in relation to climate change • Mandatory reporting for climate adaptation, 4th round	10.15 – 11.15	Andria Gilmour (ONR)
Break	**11:15 – 11:30**	
Expert speakers Dr Joe Osborne and Rachel Perks (Met Office)	11.30 – 12.30	Via MS Teams
Lunch	**12.30 – 13.30**	
Introduction to systems thinking persona exercise	13.30 – 13:45	Louise Smith (ONR)
Break out into groups and tea and coffee served	13:45 – 15.15	
Summary of the day and next workshop	15.15 – 15.30	Co-Chairs – Sarah Brown (ONR) and Katy Attwater (NGOs)

Update in ONR's consideration of Climate Change (since Summer 2023)

As climate change is a dynamic challenge, it should be expected that ONR's consideration of its potential effects should be regularly reviewed. Since we last met…

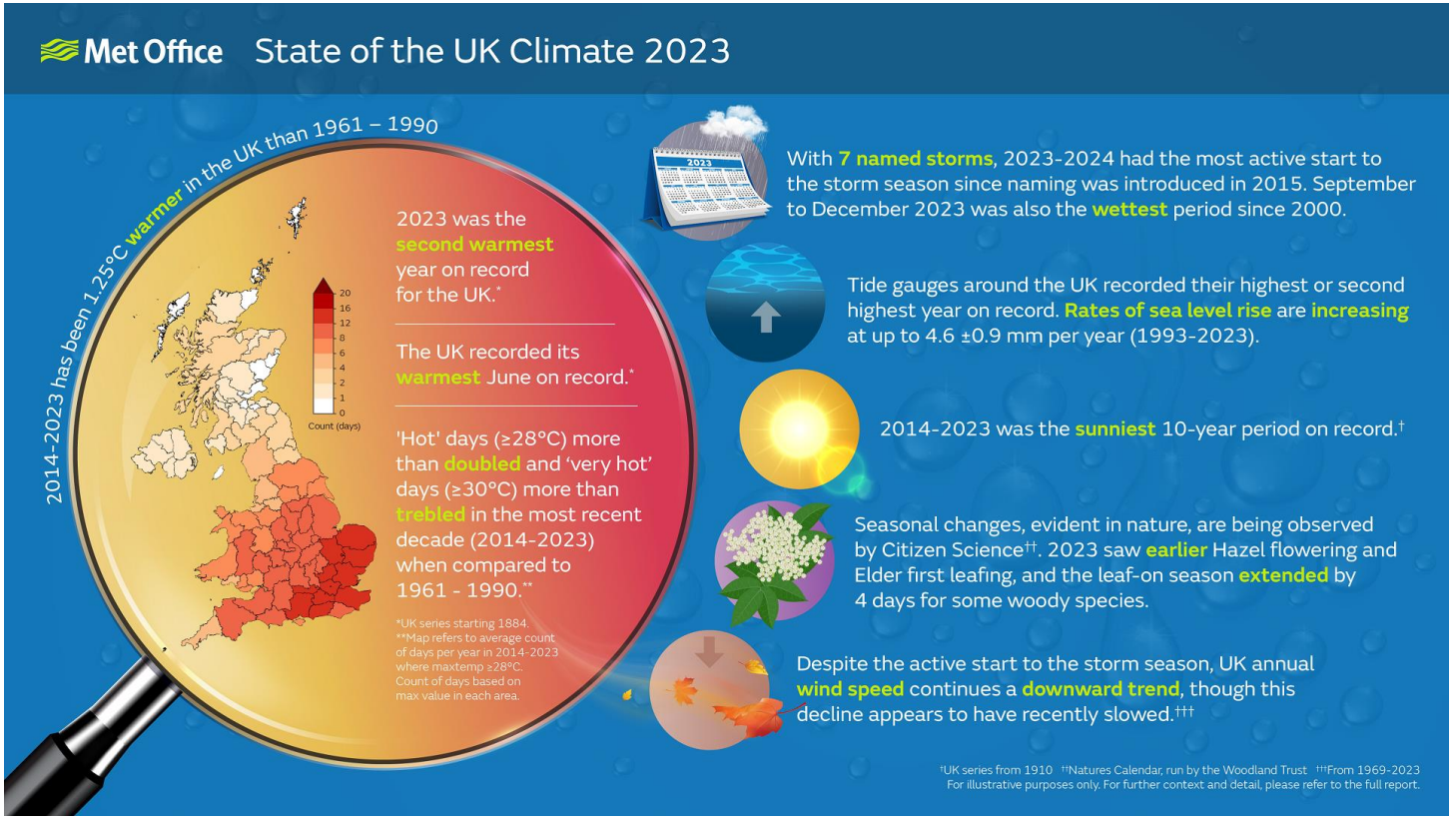
- Our Expert Panel, together with our Specialist Inspectors, have provided us with valuable updates upon the latest science in relation to climate change.
- We have made significant progress with the Chief Nuclear Inspector's Themed Inspection on climate change and have recently completed the site inspection phase.
- We have published updated regulatory guidance in relation to climate change.
- We have prepared a report on the GB nuclear industry in response to the 4th round of mandatory climate change adaptation reporting.

Latest science in relation to climate change

The news is bad in terms of global action and effects.

- 1.5^{o}C global temperature rise target (compared with pre-industrial levels) increase highly unlikely to be met and, by some measures, may have already been reached.
- Hottest average global temperatures were exceeded once again in 2023.
- 2023 was the second warmest year on record for the UK in the series from 1884, with only 2022 warmer.
- 2023 was the seventh wettest year on record for the UK in the series from 1836.
- Continuing incidents of severe and extreme weather experienced worldwide.
- Reduction in glaciers and ice sheets is continuing, contributing to sea level rise.
- Sudden, unexpected increase in rate of warming observed over last 18 months (may be due in part to removal of sulphur from shipping fuel oil).
- CO_2 emissions are continuing to increase, and most industrialised are countries still not delivering upon their commitments.
- Three new Expert Panel papers have been provided to us covering areas of emergent science: Tipping Points; Compound Flooding Events; Modelling Uncertainty.

State of the UK Climate 2023



Progress on Chief Nuclear Inspector's Themed Inspection on climate change

Objective:

The CNI Themed Inspection on climate change will seek assurance that the nuclear industry within Great Britain:

- Understands and has taken account of recent climate change projections in relevant safety cases and hazard definitions.
- Is able to demonstrate that activities are and will remain safe and secure in the future subject to the reasonably foreseeable effects of climate change.
- Has effective arrangements to monitor and review climate change information to determine if additional measures are needed to ensure that activities remain protected in the future.

Progress on Chief Nuclear Inspector's Themed Inspection on climate change

The initiative is progressing on schedule, with planned completion and publication of the report in 2025:

- Every licensee approached submitted a completed 'self-assessment' questionnaire by the deadline of October 2023. These were reviewed by the external hazards team, to identify key themes and learning.

- Based on the self-assessment and our knowledge of the sites, 5 sites were selected for targeted interventions to sample their arrangements and progress towards climate adaptation. These sites were Aldermaston, Sellafield, Dounreay, Sizewell B and Heysham 2.

- The last of the site interventions were completed last week, though this is still being written up. For the majority of sites inspected, licensees have 'Partially Met' our regulatory expectations, but significant work is underway to address the main gaps.

Progress on Chief Nuclear Inspector's Themed Inspection on climate change

Still to do:

- Complete the last site intervention records.
- Identify themes and key learning from the self-assessment and inspection phases.
- Draft the overarching summary report and progress this though internal governance before issue.
- Develop an intervention strategy for the licensees not visited as part of this intervention.
- Engage with other organisations including the environment agencies, Nuclear Decommissioning Authority and international regulators.
- Incorporate the learning from this Themed Inspection into our future regulatory strategies.

Updated regulatory guidance in relation to climate change

Technical Assessment Guide 13 (External Hazards) was updated in Autumn 2023, with all sections relating to climate change revised. The main changes in this and other directly relevant guidance are:

- Clarification of our expectation that ‘non-stationary’ hazards (such as those potentially affected by climate change) should be re-defined using the latest data as this becomes available, and the safety case reviewed to ensure it remains valid.
- Greater emphasis on the need for licensees to refer to local, site-specific observations when determining the external hazards to which the facility may be subject.
- Updates to relevant good practice, since the previous revision of TAG 13 was issued, including the UK Climate Projections 2018 (UKCP18).

4th round of mandatory climate change adaptation reporting

DEFRA (Department for Environment Food & Rural Affairs) Adaptation Reporting Power (ARP) under the Climate Change Act 2008:

- DEFRA has been empowered by Government to require UK organisations (governmental organisations, statutory undertakers, regulators, some large cooperate organisations, etc) to report upon their preparedness for the potential effects of climate change.

- The information informs the UK Climate Change Risk Assessment (CCRA), which is updated on an irregular basis (most recently CCRA3, 17th January 2022).

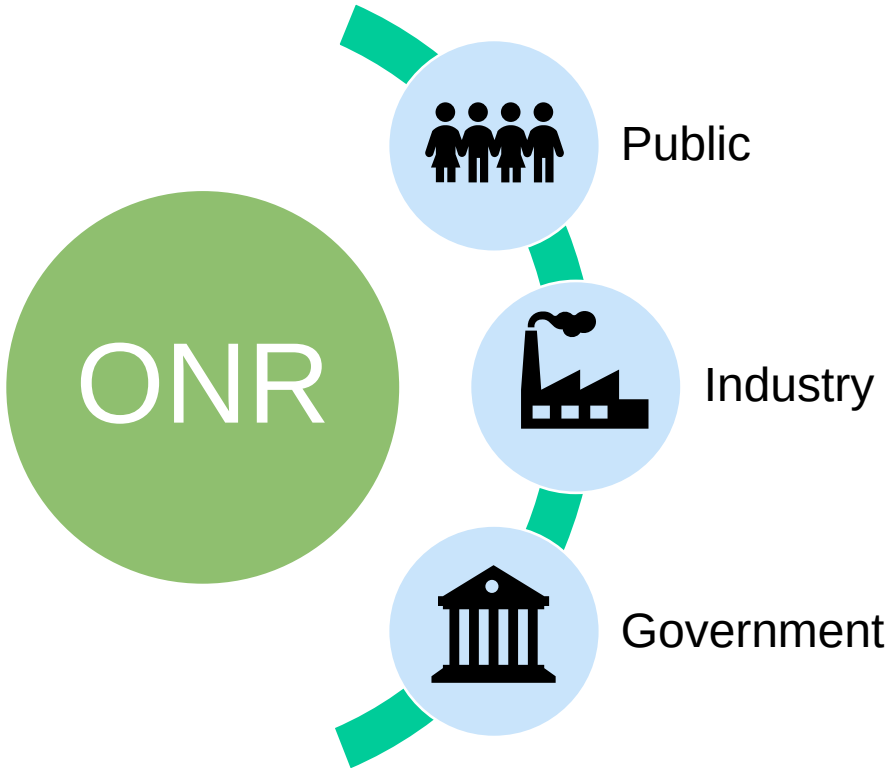
- For the 4th round of the Adaptation Reporting Power, ONR has been invited to report on behalf of the GB nuclear industry. We agreed primarily on the basis that this supports our objective to be transparent with stakeholders.

4th round of mandatory climate change adaptation reporting

This is due for publication during November 2024. I was lead author (supported by members of my former team), and it is currently undergoing its internal governance processes.

- The report primarily concentrates upon external looking aspects (an industry overview).
- It highlight the limits of our purposes in law and focus on these. (The Environment Agency have contributed to previous rounds.)
- It draws heavily on the learning from the ongoing CNI Themed Inspection on climate change.
- Only touch lightly on ONR's plans for organisational resilience in light of climate change.
- The report concludes that, while the GB industry is currently highly resilient to the near-term effects of climate change, significant investment is required to ensure it will continue to satisfy our expectations in the future.

Systems Thinking Personas Exercise



- In this series of workshops on climate change we will focus on our how we serve the public and how we build and maintain public confidence in our regulation.
- As a group, we will consider the opportunities where we can be more transparent about our climate change regulatory expectations.
- To do this effectively, it helps to consider who are the people that we serve and that we interact with.

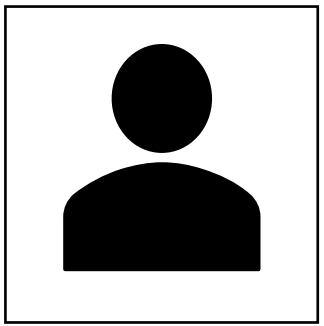
Systems Thinking Personas Exercise

- A “systems tool kit” approach means that we consider all parts of a system. For this exercise we have created a process map of the different regulatory pathways ONR including a public touchpoints.
- A persona is a fictional character created to represent a set of people that might interact with an organisation like ONR.
- Creating a persona helps us to identify those people who interact with us and recognise that different people have different needs. It essentially puts people at the heart of a project because we are thinking about them throughout all parts of the process.
- The objective is to look at ONRs current approach to engagement and find opportunities to be more transparent.
- In this exercise we will create personas with you and consider what those people **need** when they engage with ONR and how we can best ‘**serve**’ them.
- We will use our personas to look at our process map of the different regulatory pathways to understand how and if we are meeting the needs of that person.
- Example: Patagonia

Public ‘touch points’ are the points in the regulatory pathway where ONR shares information with the public either by ‘informing’ (e.g. new stories), engaging (e.g. community forum) and / or ‘consulting’ (e.g. consulting on de-commissioning)

Regulatory Pathway are the different ways a potential applicant can interact with ONR e.g. GDA

PERSONA



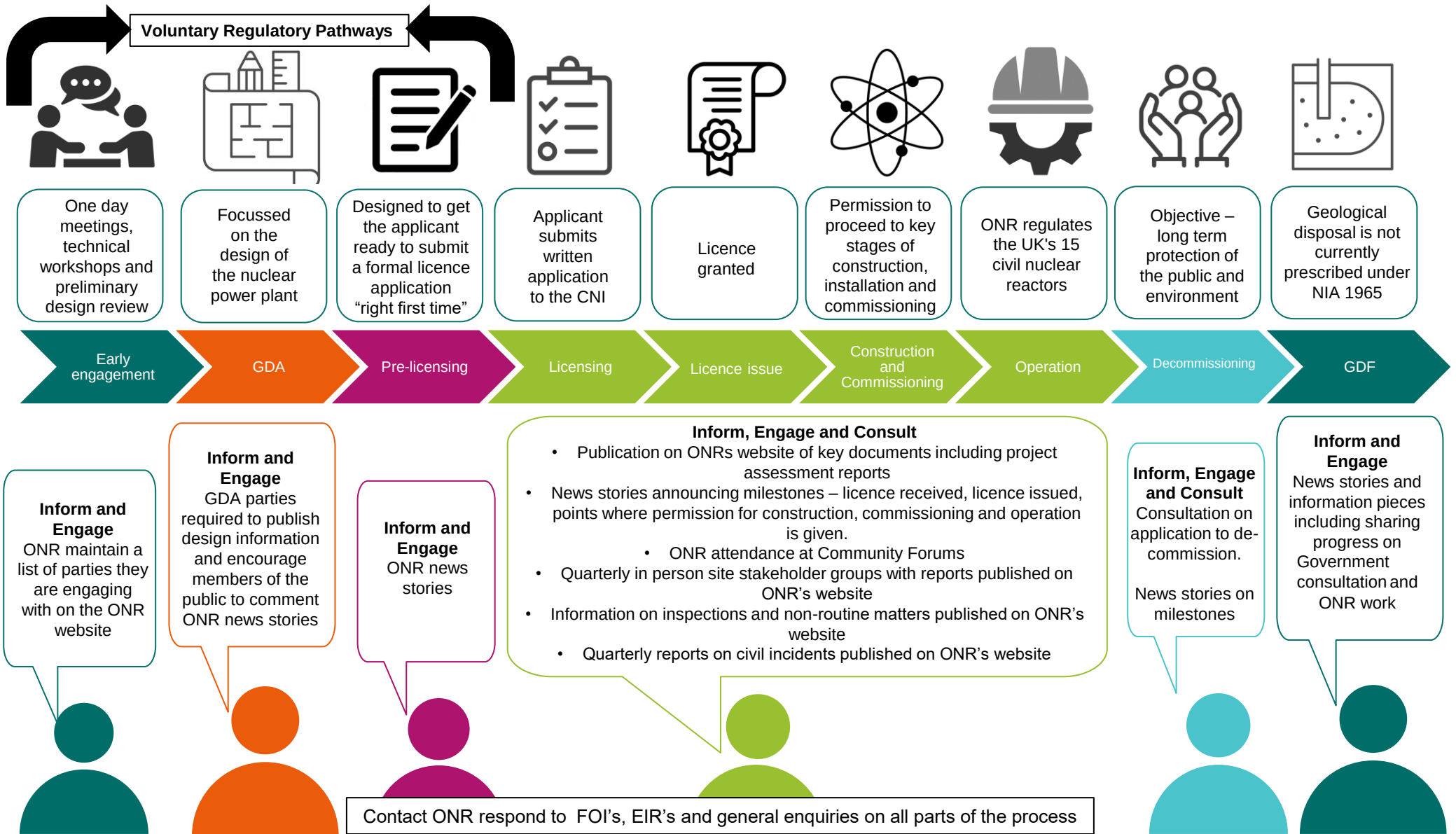
Availability of Time

Familiarity / availability of technology

Knowledge of the UK nuclear sector

Name	
Age	
Location	
Education	
Occupation	
Bio	

Needs	Served By


Voluntary Regulatory Pathways
One day meetings, technical workshops and preliminary design review
Focussed on the design of the nuclear power plant
Designed to get the applicant ready to submit a formal licence application "right first time"
Applicant submits written application to the CNI
Licence granted
Permission to proceed to key stages of construction, installation and commissioning
ONR regulates the UK's 15 civil nuclear reactors
Objective – long term protection of the public and environment
Geological disposal is not currently prescribed under NIA 1965
Early engagement
GDA
Pre-licensing
Licensing
Licence issue
Construction and Commissioning
Operation
Decommissioning
GDF
Inform and Engage
ONR maintain a list of parties they are engaging with on the ONR website
Inform and Engage
GDA parties required to publish design information and encourage members of the public to comment ONR news stories
Inform and Engage
ONR news stories
Inform, Engage and Consult
• Publication on ONRs website of key documents including project assessment reports
• News stories announcing milestones – licence received, licence issued, points where permission for construction, commissioning and operation is given.
• ONR attendance at Community Forums
• Quarterly in person site stakeholder groups with reports published on ONR's website
• Information on inspections and non-routine matters published on ONR's website
• Quarterly reports on civil incidents published on ONR's website
Inform, Engage and Consult
Consultation on application to de-commission.
News stories on milestones
Inform and Engage
News stories and information pieces including sharing progress on Government consultation and ONR work
Contact ONR respond to FOI's, EIR's and general enquiries on all parts of the process

Voluntary Regulatory Pathways - A potential licence applicant does not have to undertake early engagement, GDA or pre-licensing ahead of making an application for a nuclear site licence. Undertaking these processes potentially reduces the time, risks and costs during the licensing process for both the potential applicant and ONR. There is no requirement for a site to have been identified in these processes. Climate change regulatory expectations are high level.

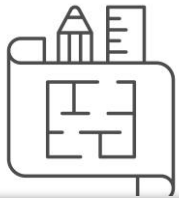
One day meeting – ONR and EA will outline the UK regulatory framework. The party requesting early engagement will provide information on their plans.

Technical workshops – more in-depth sessions between ONR EA and the requesting party that can including siting and licensing.

Preliminary design review – Technical review of the design. This is not a substitute for GDA.

EARLY ENGAGEMENT

Inform and Engage
ONR maintain a list of parties they are engaging with on the ONR website



Focussed on the design of the nuclear power plant and the safety / security cases. The main details of the design are independent of its location.

General site envelope can be as broad or narrow as the organisation requesting GDA wishes.

If the site has characteristics outside of this envelope, the applicant will need to demonstrate the design is acceptable at the intended site during licensing.

GDA

Inform and Engage
GDA parties required to publish design information and encourage members of the public to comment
ONR news stories

Designed to get the applicant ready to submit a formal licence application “right first time”.

Applicant needs to have identified and be in the process of procuring the site.

Applicant must submit a site justification report with the licence application. Should cover matters the Planning Inspectorate will liaise with ONR on.

PRE-LICENSING

Inform and Engage
ONR news stories

Contact ONR respond to FOI’s, EIR’s and general enquiries on all parts of the process

Applicant submits written application to the CNI

Organisational capability, Site activities and licence compliance , Nuclear Site health and fire safety, Design and safety case, Land and legal and Security

Assessment of site suitability:

Safety case must show that the design of a nuclear facility would be defendable against a range of local external hazards including extreme weather events such as flooding, but the detail design of the defences does not need to be completed.

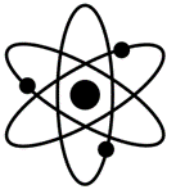
Proposal must conform with Government siting policy.

Plans and programmes should be in place for decommissioning and for the treatment and disposal of radioactive waste including storage.

Licence granted when: the Licensee has shown adequate organisational capacity and security of tenure (meaning control of, and access to, the site). ONR needs to be satisfied that the safety and security for the site will be suitable for the proposed activities for a plant that is adequately designed, constructed and operated.

Licence is required before the start of construction – Defined as the placement of the first structural elements which provide an operational safety or security function.

ONR provides permission for licensee to proceed to subsequent key stages of construction, installation and commissioning.



ONR regulates the UK's 15 civil nuclear reactors, which consist of 14 Advanced Gas-cooled Reactors (AGR) and one Pressurised Water Reactor (PWR)

Fleet or industry wide interventions to promote relevant good practice in all areas. Giving permission for key pieces of work to take place on the site.

Periodic safety reviews required every ten years.

Licensing | Licence issue | Construction and Commissioning | Operation

Inform, Engage and Consult

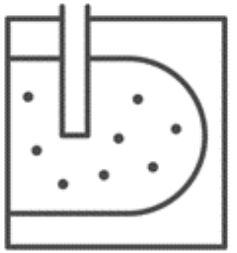
- Publication on ONRs website of key documents including project assessment reports
- News stories announcing milestones – licence received, licence issued, points where permission for construction, commissioning and operation is given.
- ONR attendance at Community Forums
- Quarterly in person site stakeholder groups with reports published on ONR's website
- Information on inspections and non-routine matters published on ONR's website
- Quarterly reports on civil incidents published on ONR's website

Contact ONR respond to FOI's, EIR's and general enquiries on all parts of the process

Objective – long term protection of the public and environment

Since 19 November 1999 under EIADR the decommissioning and dismantling of nuclear power stations may only proceed with consent from ONR.

Licensee submits to ONR an environmental statement and application to start de-commissioning



A GDF is an engineered repository designed for final disposal of higher activity radioactive waste deep underground in a stable geological environment.

Geological disposal is not currently prescribed under NIA 1965.

Government policy is that a GDF will require a site licence and Government intends to make the necessary legislation and regulatory provisions to facilitate licensing.

Decommissioning

Inform, Engage and Consult

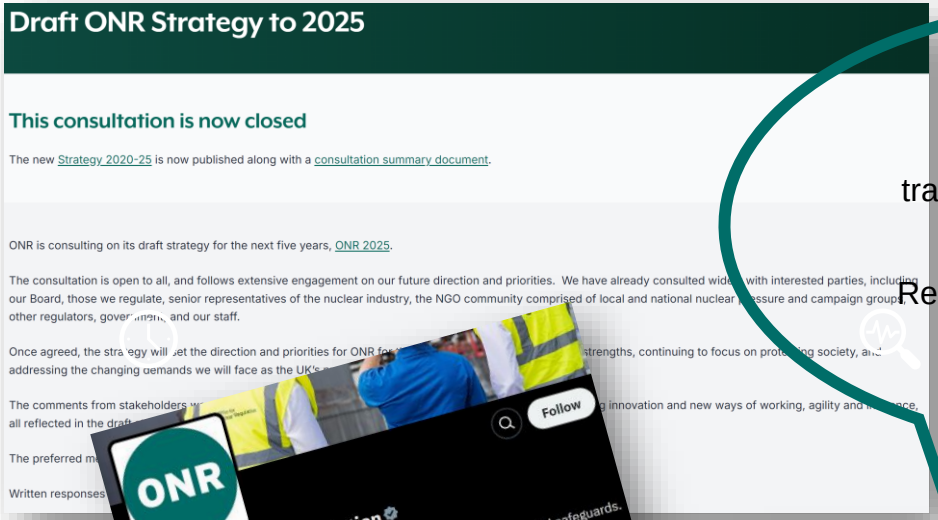
- Consultation on application to de-commission.
- News stories on milestones

Geological Disposal Facility (GDF)

Inform and Engage

- News stories and information pieces including sharing progress on Government e.g. consultation and ONR work

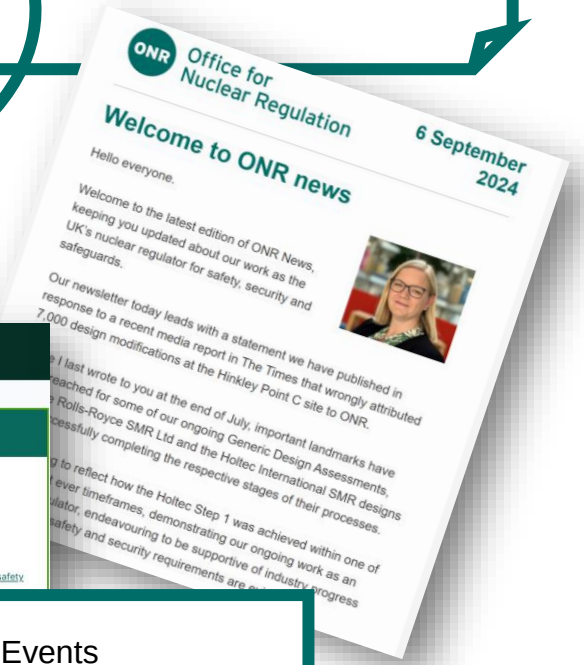
Contact ONR respond to FOI's, EIR's and general enquiries on all parts of the process

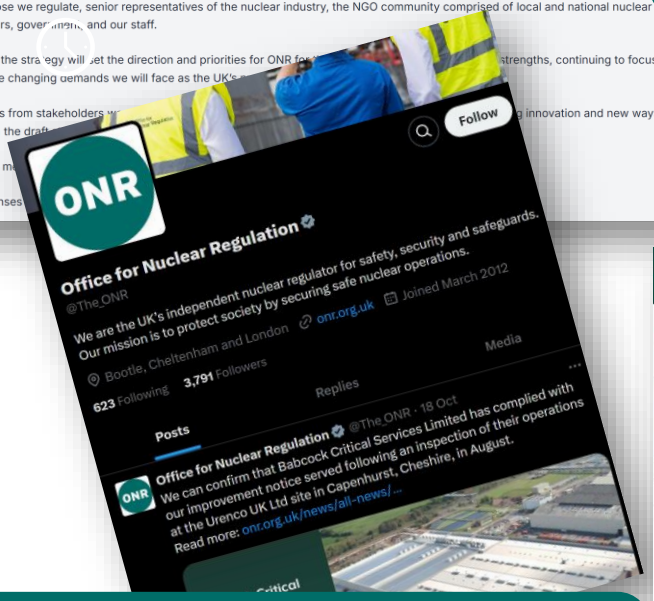


Consultations:
Policy – openness and transparency policy and draft strategies

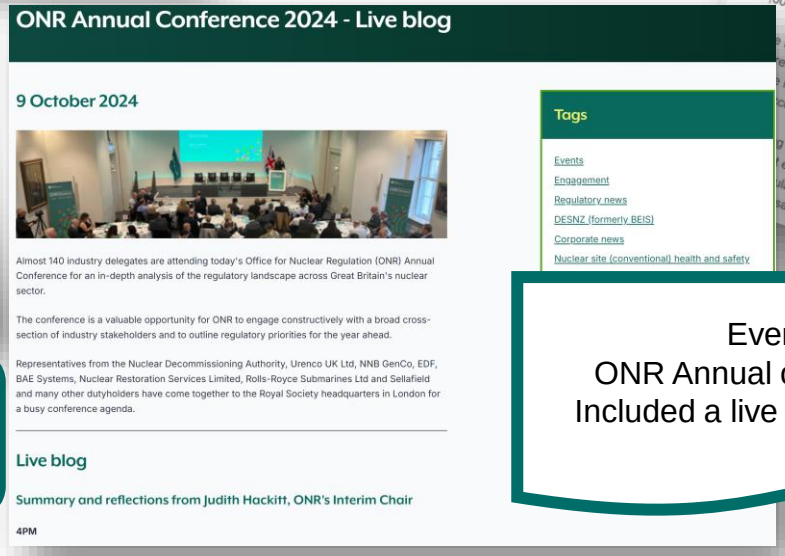
Regulatory matters – external hazards papers

Publications
ONR Newsletter





Social Media Updates
X, LinkedIn
YouTube



Events
ONR Annual conference -
Included a live blog this year

Guide to creating your persona

- As a table you will need to fill out the ‘persona’ identity document provided.
- You will be given 2 – 3 ‘attribute cards’ that you will need to incorporate into your persona.
- You can choose from the ‘photo cards’ to help you bring them to life.
- We’d also encourage you to give your persona a ‘quote’. We have a number of quotes you can choose from which have come from a range of real people or you can make up a quote yourself.
- Based on your ‘attribute cards’ and the persona that you develop, you’ll need to decide if your persona has access to and can utilise technology e.g. the internet, email, smart phones, how much free time they have available and if they have any knowledge of the UK nuclear sector.
- Is your persona married? Do they have pets, hobbies? What about their personality? Favourite sport, films, food, book, colour?
- What is their lifestyle like? What are their behaviours? What is their social life like? What do they believe in?
- Try to get to the point where your table feels they have met the persona.
- Once you have developed your persona, think about what their needs are and how these needs are served taking into account ONR’s process map.

PERSONA - Example

Availability of Time

Familiarity / availability of technology

Knowledge of the UK nuclear sector

Name	David Wells
Age	38
Location	Gloucester
Education	Science degree
Occupation	Science teacher at a secondary school

Bio

Married with two children (ages 10 and 7)
His main goal is the wellbeing and happiness of his family. He is concerned about the impact of climate change on his children's future as well as the cost of living – whether they will be able to afford to buy a house and be comfortable.
He teaches his students about energy sources, environmental impacts and climate change so he needs to keep up with these topics.
He gets frustrated with the budget available to schools to aid learning.
He's conscious to teach his students without giving his own personal views
He regularly uses the internet to do research and engages in social medial (X and facebook)
He reads scientific articles and reports and listens to podcasts on climate change.
Quote: "children are the future and we should ensure we invest in them"

Needs	Served By
In terms of his personal concerns David needs clear, transparent and accessible communication to keep him informed of policies on nuclear and climate change. David's main concerns are around the future for his children in terms of the cost of living and the safety of nuclear power.	Clear updates on nuclear plans and how it is regulated. Web stories, podcasts and social media.
In terms of his own interests and science background, David needs more detailed scientific information. He is able to digest this and review multiple sources.	More detailed information about how nuclear power is regulated including assessment reports. Reliable information from independent sources with accompanying data that he can analyse.
As a teacher, David also needs reliable information that he can disseminate to his students. He needs to be to provide them with the sources so that they can research this themselves. Given budgetary concerns – materials that he can print off and provide to his class would assist him.	Information documents explaining how a nuclear power plant works, how it is regulated. Visual images, videos and interactive online tools to keep the students interested and to aid learning.

Thank you