

An aerial 3D architectural rendering of a nuclear reactor plant. The central feature is a large, multi-story concrete building with a prominent circular structure on top, likely the containment dome. To the right, a blue river flows through a green, forested landscape. The reactor site is surrounded by paved roads and landscaped areas with brown mulch. The overall scene is presented in a clean, digital style.

Environment Agency

Generic design assessment of General Nuclear System Limited's UK HPR1000

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February 2021

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Image copyright of China General Nuclear Power Corporation

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Purpose of this meeting

- To help inform you about our work on Generic Design Assessment (GDA) of General Nuclear System Limited's UK HPR1000 nuclear reactor.
- To listen to your comments and answer your questions where we can.
- To invite you to respond to our consultation which is open until the 4th April 2021.

Note:-

A developer proposing to construct and operate a UK HPR1000 at a site in the UK will still need to obtain all necessary site specific regulatory permissions (permits, licences, consents, orders, etc).

Who is in the room?

- Environment Agency
 - Environmental Regulator
- Office for Nuclear Regulation
 - Nuclear Safety Regulator
- General Nuclear System Limited (GNSL)
 - The Requesting Party

Environment Agency - What we do

We protect and improve the environment.

We regulate industry, including nuclear sites.

We regulate the use of radioactive substances and disposal of radioactive waste as well as other matters such as operation of combustion plant and discharges into the water environment.

We do not regulate nuclear safety, security, or transportation of radioactive materials.

We are an advisor to planning authorities providing advice for them to consider in their decision making.

New nuclear power stations: role of regulators

Ensuring high standards of safety, security, environmental protection and waste management



Bradwell

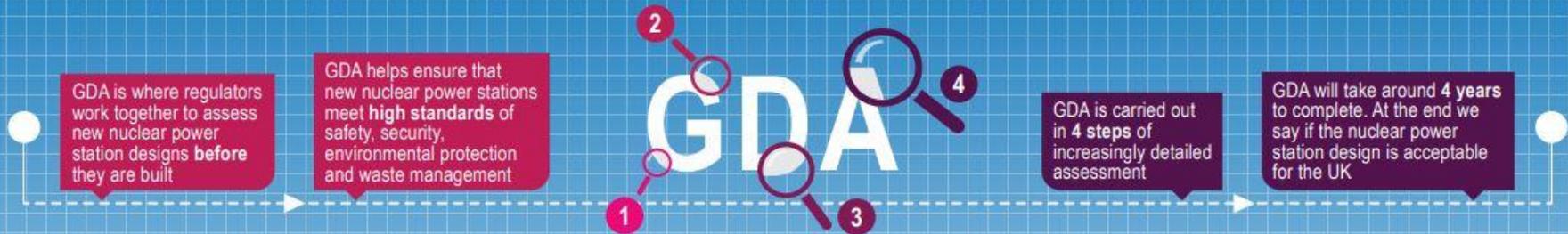
5 stages of regulation: Design assessment (GDA) Licensing and permitting Construction Operation Decommissioning

- | | | | |
|---|---|--|---|
|  Protect nuclear information and IT systems |  Issue nuclear site licence to operators following robust assessment |  Advise government, local councils, Planning Inspectorate and the nuclear industry |  Set limits and monitor disposals and discharges of radioactive waste |
|  Ensure industry monitors and controls hazards effectively to protect the public |  Assess nuclear power station designs before construction begins |  Protect habitats and wildlife both on and off the site |  Issue environmental permits and consents during construction and for operation of the power station |
|  Approve site security arrangements through lifetime of power station |  Enforce regulations and take legal action if necessary |  Advise on flood and coastal erosion risk management for the site and associated developments |  Promote waste reduction, reuse and recycling |
|  Ensure compliance with agreed safety and security arrangements and law |  Monitor and assess compliance with government regulations |  Ensure fish and marine life are protected |  Manage the impacts of construction both on and off the site |



New nuclear power stations: GDA

Generic Design Assessment (GDA) helps ensure high standards of safety, security, environmental protection and waste management



GDA is where regulators work together to assess new nuclear power station designs **before** they are built

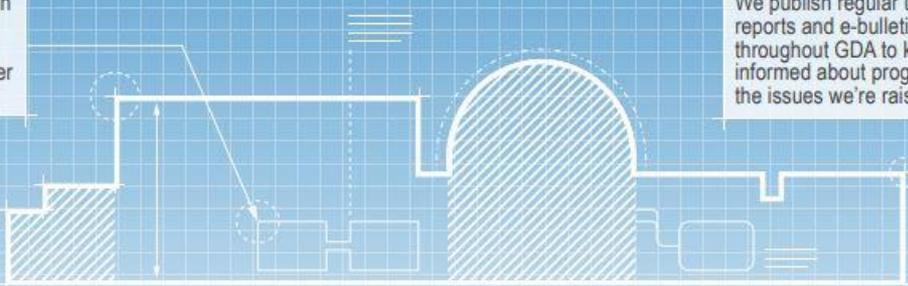
GDA helps ensure that new nuclear power stations meet **high standards** of safety, security, environmental protection and waste management

GDA is carried out in **4 steps** of increasingly detailed assessment

GDA will take around **4 years** to complete. At the end we say if the nuclear power station design is acceptable for the UK

We identify important design or technical issues early, before construction. This enables the reactor designer to address them

Identifying issues early is "enabling regulation" and helps to reduce potential cost and time risks from design changes during construction



We publish regular update reports and e-bulletins throughout GDA to keep people informed about progress and the issues we're raising

Developers and regulators use GDA to inform site specific work. Developers must obtain all relevant licences, permits and consents for each site before construction can begin

How can local communities get involved?

GDA is **open and transparent**, so there are lots of ways to get involved

Comments process

You can view information on the designer's website and ask a question or make a comment during GDA and the designers will respond



We see all comments and the designer's responses and can use these to help inform our work

Consultation

The Environment Agency and Natural Resources Wales consult on findings from their detailed assessment



All comments made are carefully considered and can help inform decisions about the designs

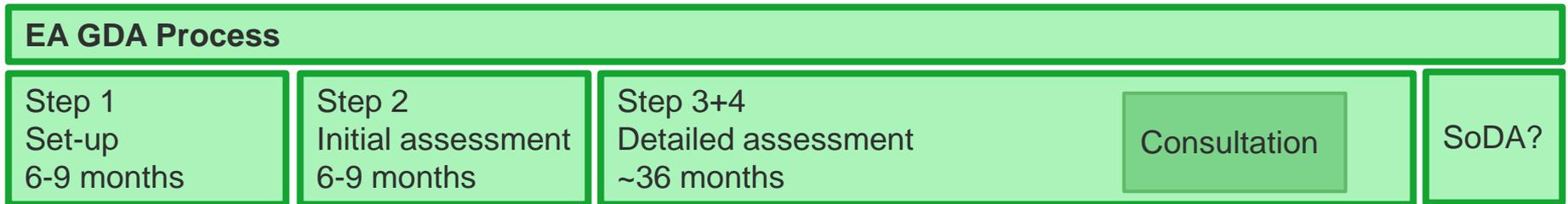
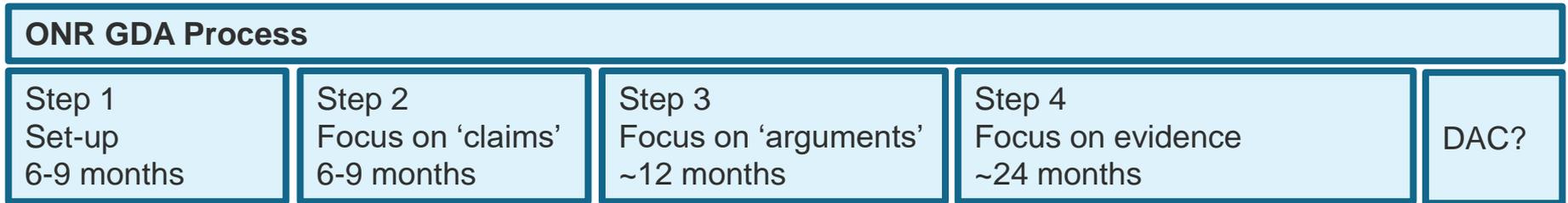
Meetings and events

Talk to us at local stakeholder meetings, public events or conferences



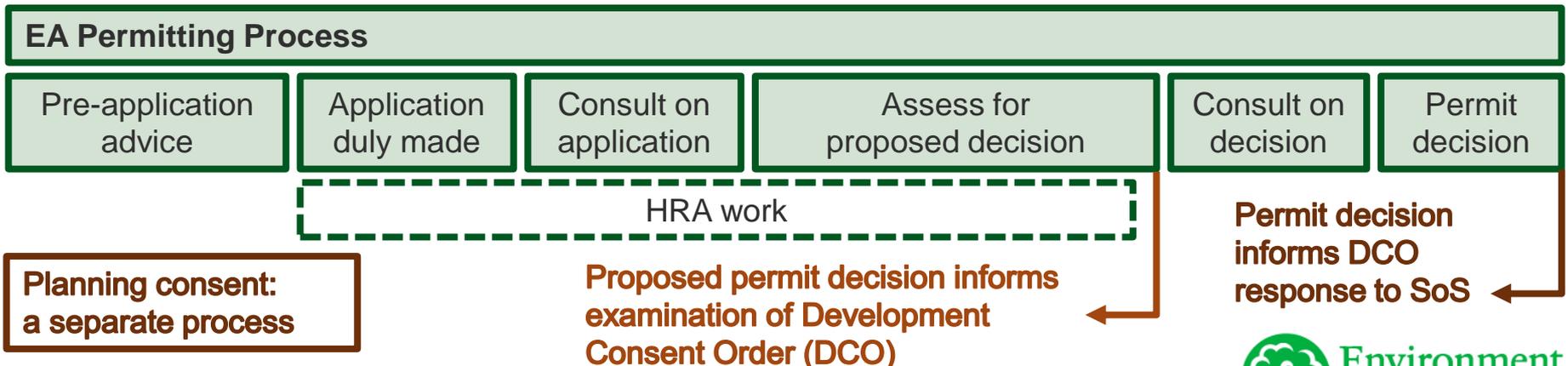
Find out more and sign up for our e-bulletin:
www.gov.uk/government/collections/assessing-new-nuclear-power-station-designs

A quick reminder – the GDA process

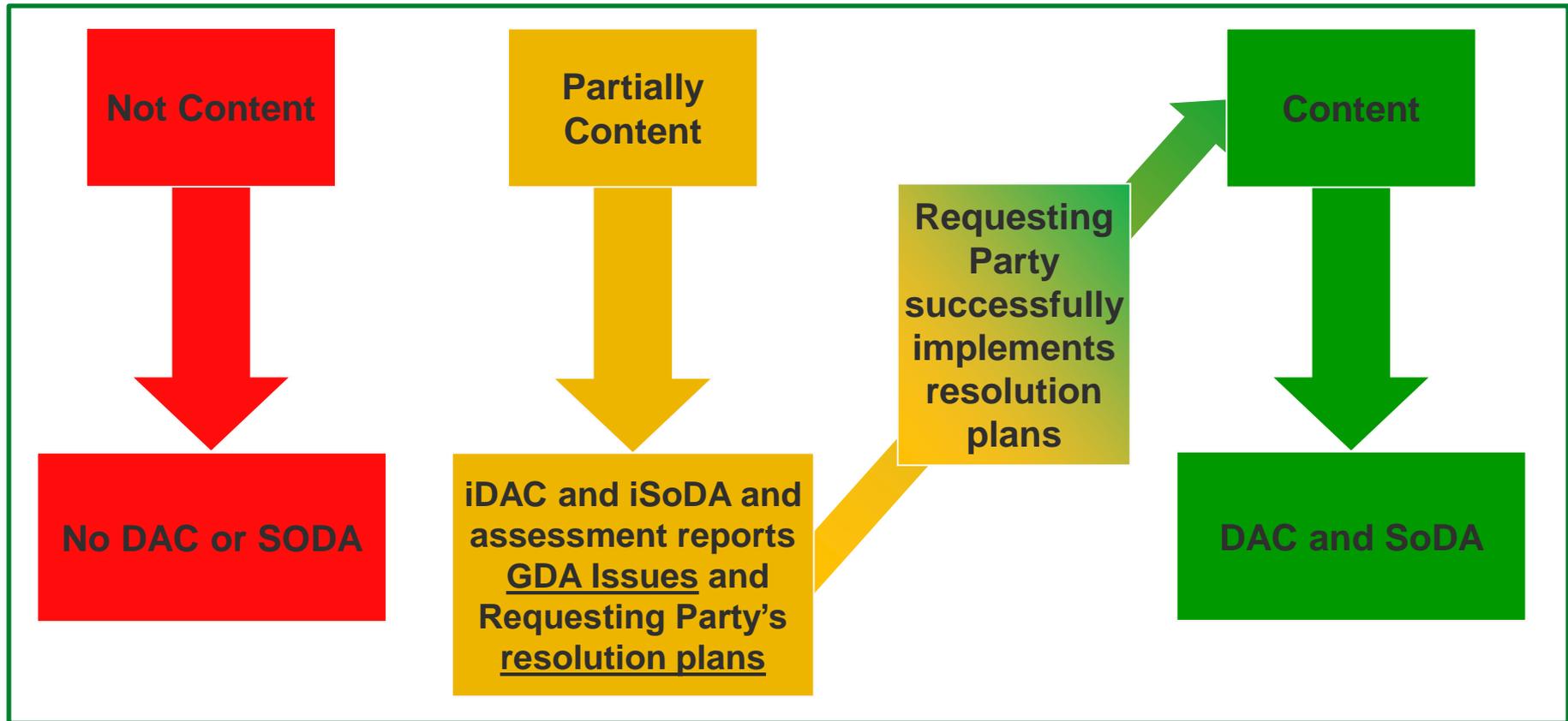


Permit application to be made after we have started our GDA consultation

DAC & SoDA enable permit consultation



A quick reminder – GDA outcomes



DAC: ONR's Design Acceptance Confirmation (iDAC: interim DAC)

SODA: EA's Statement of Design Acceptability (iSoDA: interim SoDA)

Our Consultation

We are

- working to engage people, recognising the current difficult position due to coronavirus restrictions
- holding events for both national and local stakeholders
- increasing the number of events
- advertising in local newspapers – both print and digital formats
- including non-digital options (telephone appointments and making hard copy documents available)
- raising awareness via our regular communication channels

Our engagement plan is available online:

<https://www.gov.uk/government/publications/generic-design-assessment-of-the-uk-hpr1000-consultation-plan/environment-agencys-consultation-plan-on-the-generic-design-assessment-of-the-uk-hpr1000>

Our consultation documents

- We have produced a suite of documents to help inform you.
 - **Summary document:** non technical information and how to respond
 - **Consultation document:** about the consultation, the GDA process, the design and summarises our assessment
 - **Assessment reports:** 8 detailed technical reports and an independent dose assessment
- All our documents are found here:
<https://www.gov.uk/government/consultations/generic-design-assessment-of-general-nuclear-system-limiteds-uk-hpr1000-reactor>
- For additional information, the Requesting Party have also published their – Pre-construction Environmental Report (PCER)
[\(http://www.ukhpr1000.co.uk/documents-library/step-4/\)](http://www.ukhpr1000.co.uk/documents-library/step-4/)

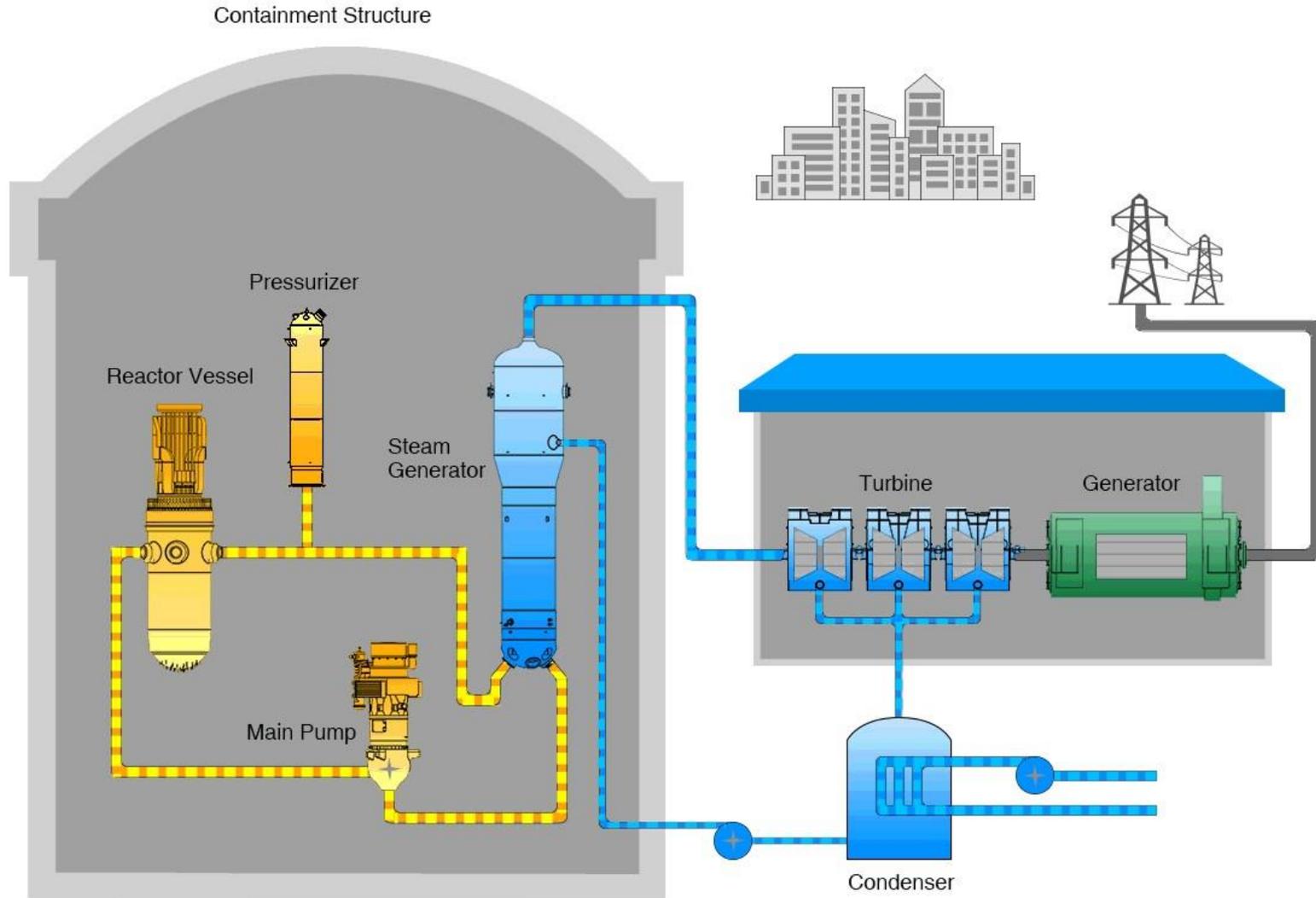
Scope of the GDA consultation

- In GDA we assess environmental protection aspects of a new design of nuclear power station, including its potential environmental impacts.
- These impacts are not related to a specific site, but to a generic site, as specified by the Requesting Party.
- This consultation is not about:
 - government energy policy,
 - site specific environmental impacts
 - planning aspects, such as visual impacts or transport (PINS & SoS)
 - Safety, security or transportation of radioactive materials (ONR)

Key assumptions used in this GDA

- Consistent with government policy:
 - Fuel will not be reprocessed
 - Spent fuel will go to a geological disposal facility (GDF)
 - Higher activity wastes will go to a GDF
- The generic site uses once through seawater cooling

The UK HPR1000 – How it works



Assessment outcomes – A summary

- We have 8 topics of assessment in GDA:
 1. MSQA (Management systems)
 2. Strategic waste management
 3. Best available techniques (BAT)
 4. Discharge to air and water
 5. Solid waste, spent fuel and disposability
 6. Sampling and monitoring
 7. Generic site and radiological impact
 8. Other Environmental Regulations
- Any topics of interest you wish to discuss?

GDA outcomes: Potential GDA Issues and Assessment Findings

- Potential GDA Issues are matters identified during GDA that, if not resolved **by the end of GDA** would become GDA Issues. This means we could only issue an iSoDA
- Assessment Findings relate to matters identified during GDA that require addressing at the site specific stage. These are **addressed after GDA** as they require inputs relating to operator decisions or site specific information before they can be assessed

Assessment outcomes – A summary

- MSQA - We identified 1 potential GDA Issue:
 - Potential GDA Issue 1: This relates to ensuring consistency across the project in selection and use of Operational Experience (OPEX)
- Best Available Techniques - We have identified 2 potential GDA Issues:
 - Potential GDA Issue 2: We have received an appropriate BAT case for GDA, but the ONR have yet to agree the ALARP case. Where this leads to re-evaluation of design options we require a demonstration that environmental protection was given appropriate consideration (alongside safety).
 - Potential GDA Issue 3: We require further justification of how best available techniques is applied to the choice made in selection of HEPA filter type.

Assessment outcomes – A summary

- Solid Waste, Spent Fuel and Disposability - We have identified 3 potential GDA Issues
 - Potential GDA Issue 4: GNSL need to demonstrate the proposed concept design for the SFIS is applicable to the actual requirements stipulated by the fuel manufacture
 - Potential GDA Issue 5: GNSL need to provide further substantiation of the proposed strategy for the management of in-core instrument assemblies (ICIAs) to ONR. If there are any changes to the proposed waste strategy the impact on the disposal of ICIA wastes needs to be considered.
 - Potential GDA Issue 6: GNSL still need to provide evidence that the RWM have agreed that the higher activity waste (HAW) is suitable for acceptance into a future GDF.

Our overall preliminary conclusion

- As we have identified 6 potential GDA Issues, which if not resolved before the end of GDA would become GDA Issues (details later), therefore:
- **Consultation document considers issuing an iSoDA**
- As stated in the consultation document:
 - Work is already ongoing to resolve these issues.
 - If these issues are resolved by the end of GDA and no other potential issues are found, we could consider issuing a SoDA
- We have also identified 40 Assessment Findings which will require work by a future operator to address

Responding to the consultation

Online

Visit our e-consultation website.

<https://consult.environment-agency.gov.uk/nuclear/assessing-new-nuclear-power-station-ukhpr1000/>

By email or letter

You can also submit a response by email or letter.

Email to: nuclear@environment-agency.gov.uk

By post:

For the attention of Dr Paula Atkin

Environment Agency

Ghyll Mount

Gillan Way

Penrith

CA11 9BP

Next Steps

We will:

- record, carefully consider and respond to all relevant comments in our decision document
- use these comments to help inform our assessments, where relevant
- publish a summary of the responses on GOV.UK in May 2021
- publish our final decision document on GOV.UK in early 2022

Thank you for your time

Any questions?