Office for Nuclear Regulation

# Proportionate Regulatory Control (PRC)

## An overview of changes to the delicensing nuclear sites

Peter Howden

Nuleaf Radioactive Waste Planning Group, 6 November 2024

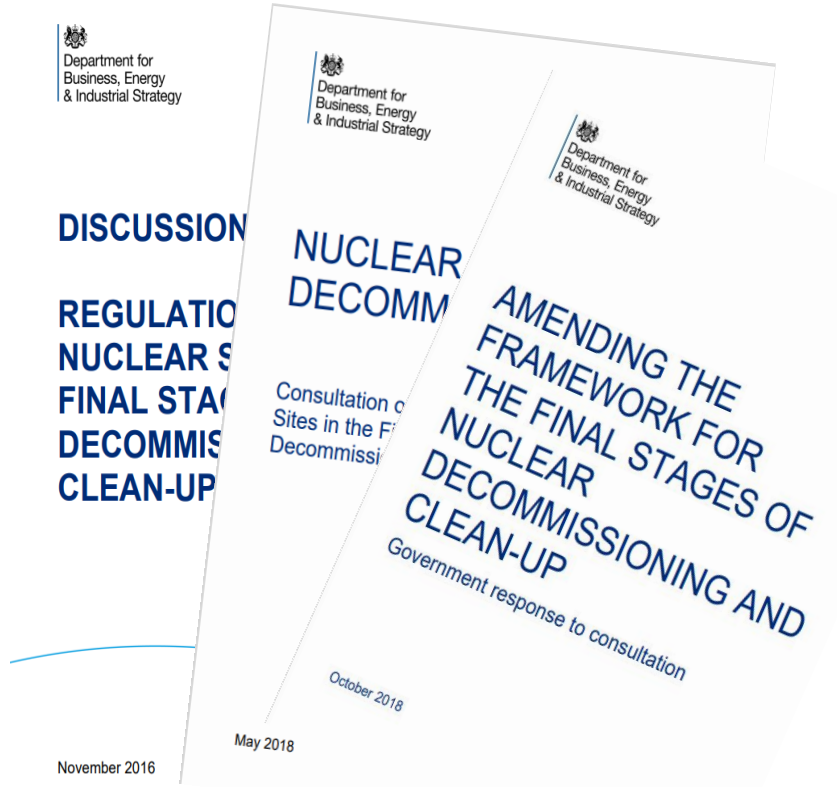
# Agenda

- Background and overview of PRC
- New PRC criteria to vary a site licence and end the period of responsibility
- Available guidance
- Timeline for PRC commencement

# PRC History

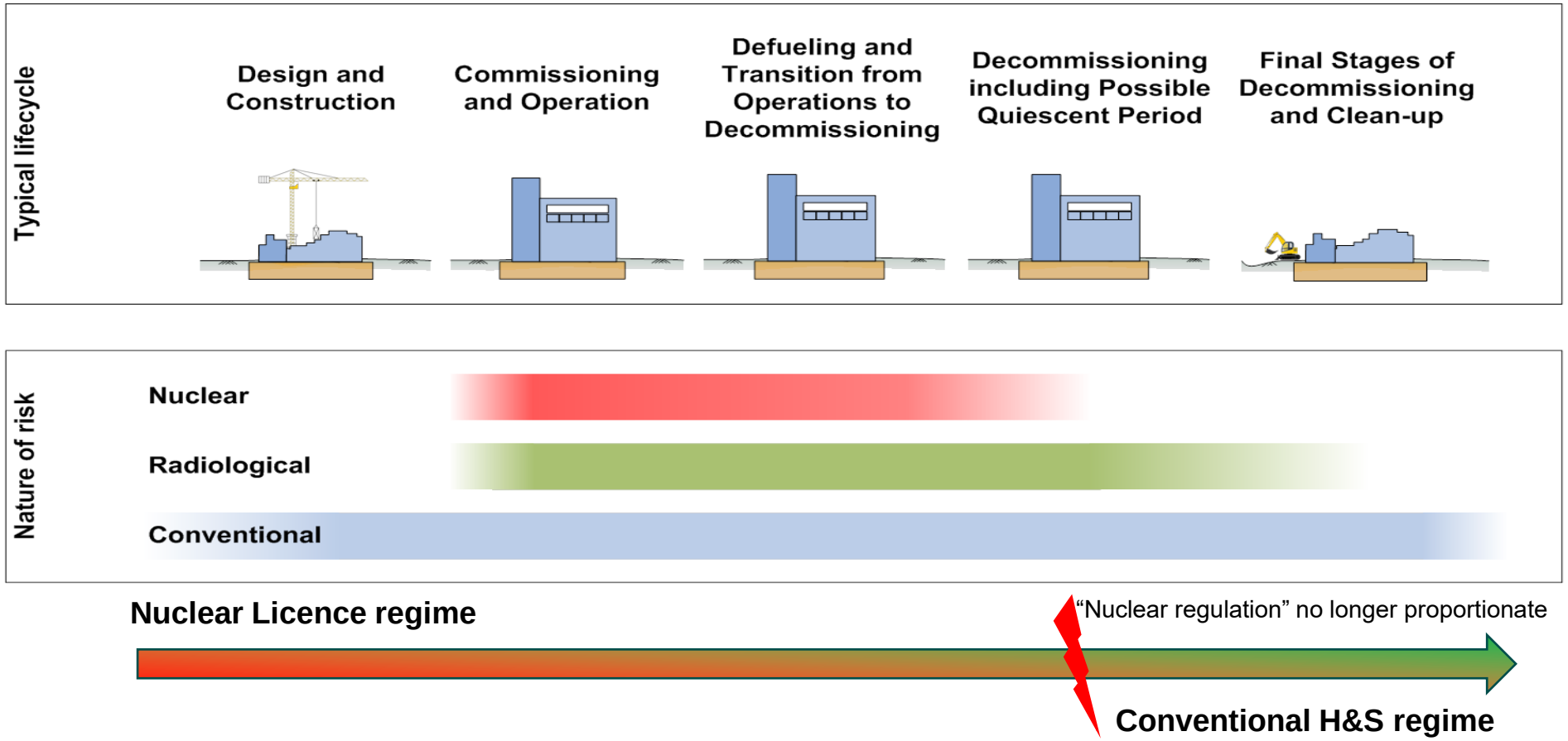
A long time in the making….

- The concept of more proportionate regulation of nuclear sites in the later stages of decommissioning initiated in the early 2010s
- Concept worked up by a BEIS steering group (including ONR, environment agencies, NDA, HSE) and different options considered
- Public consultation in 2018
- Over recent years, PRC substantively developed to implementing amendments to the Nuclear Installations Act 1965 (NIA65)



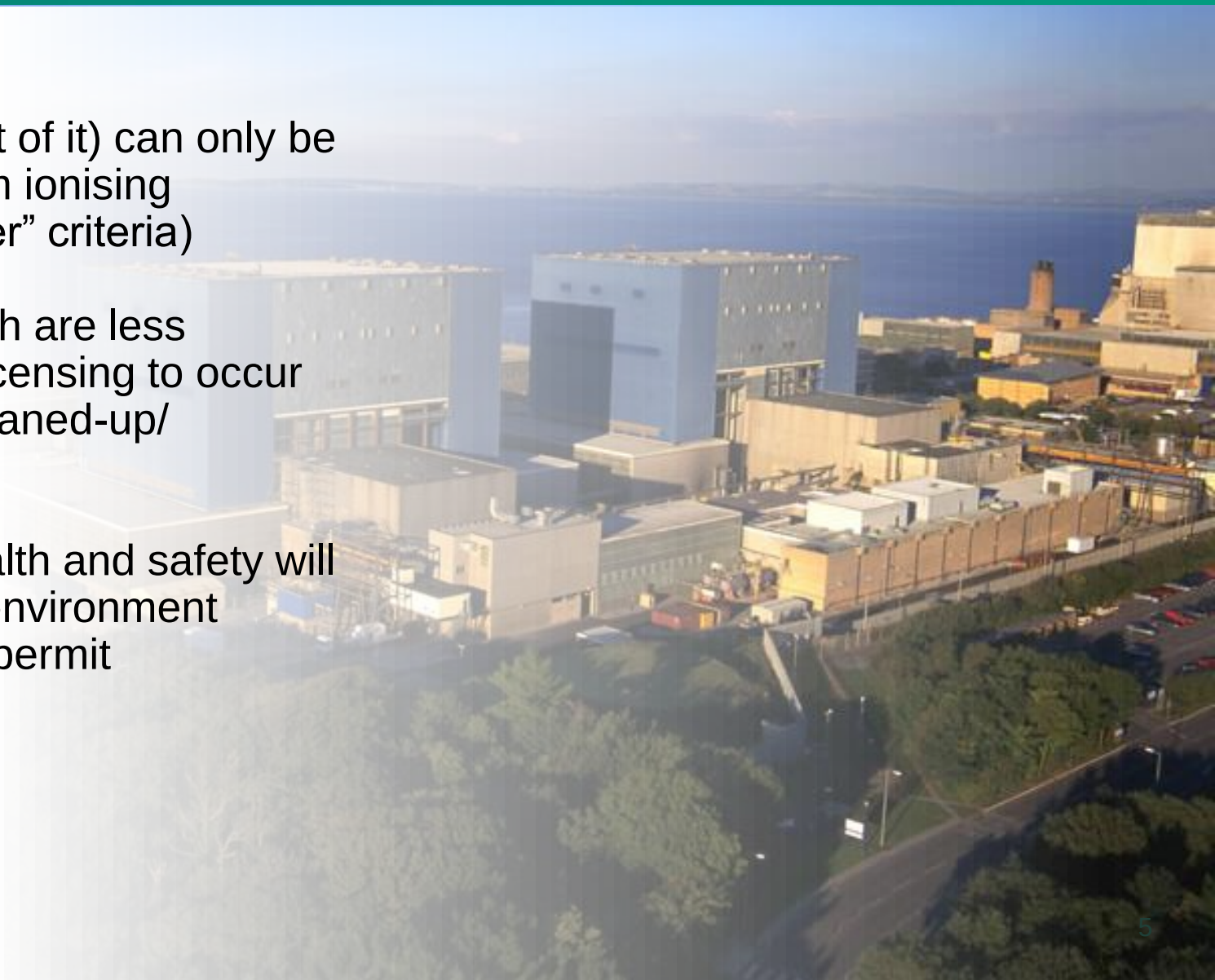
# PRC – High level objectives

Improve the legislative & regulatory framework for nuclear sites in the final stages of decommissioning & clean-up



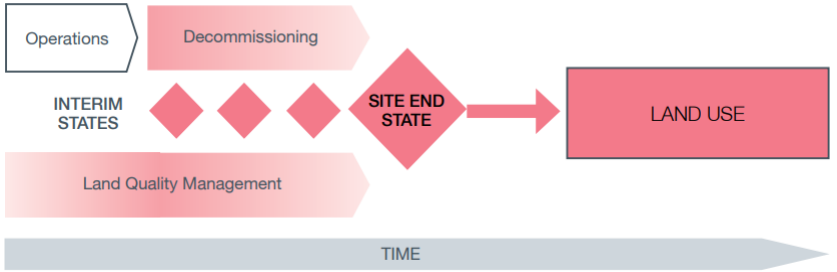
# PRC – In a nutshell

- Currently, a nuclear licensed site (or part of it) can only be delicensed when there is no danger from ionising radiations from anything on it (“no danger” criteria)
- PRC introduces alternative criteria, which are less stringent than no-danger, and allow delicensing to occur before a site (or part of a site) is fully cleaned-up/ remediated
- After such delicensing, conventional health and safety will be regulated by HSE. And the relevant environment agency continues to regulate under the permit



# PRC – Expected benefits

- More proportional regulation of sites in the final stages of decommissioning (simpler, cheaper compliance)
- More options for optimised decommissioning and end-state planning, e.g. progressive down-sizing of a nuclear licensed site
- Optimised waste management, in particular use of on-site “GRR” on-site disposals (i.e. in-situ disposals and disposals for a purpose)
- Cost savings (BEIS estimated to be around £500 million over the next 20 years; and similar in following 40 years) from optimised waste management, reduced costs for land remediation, reduced regulatory burden, earlier re-use of nuclear sites etc
- Aligns nuclear third party liability arrangements with international standards and allows removal of insurance obligations at an appropriate stage

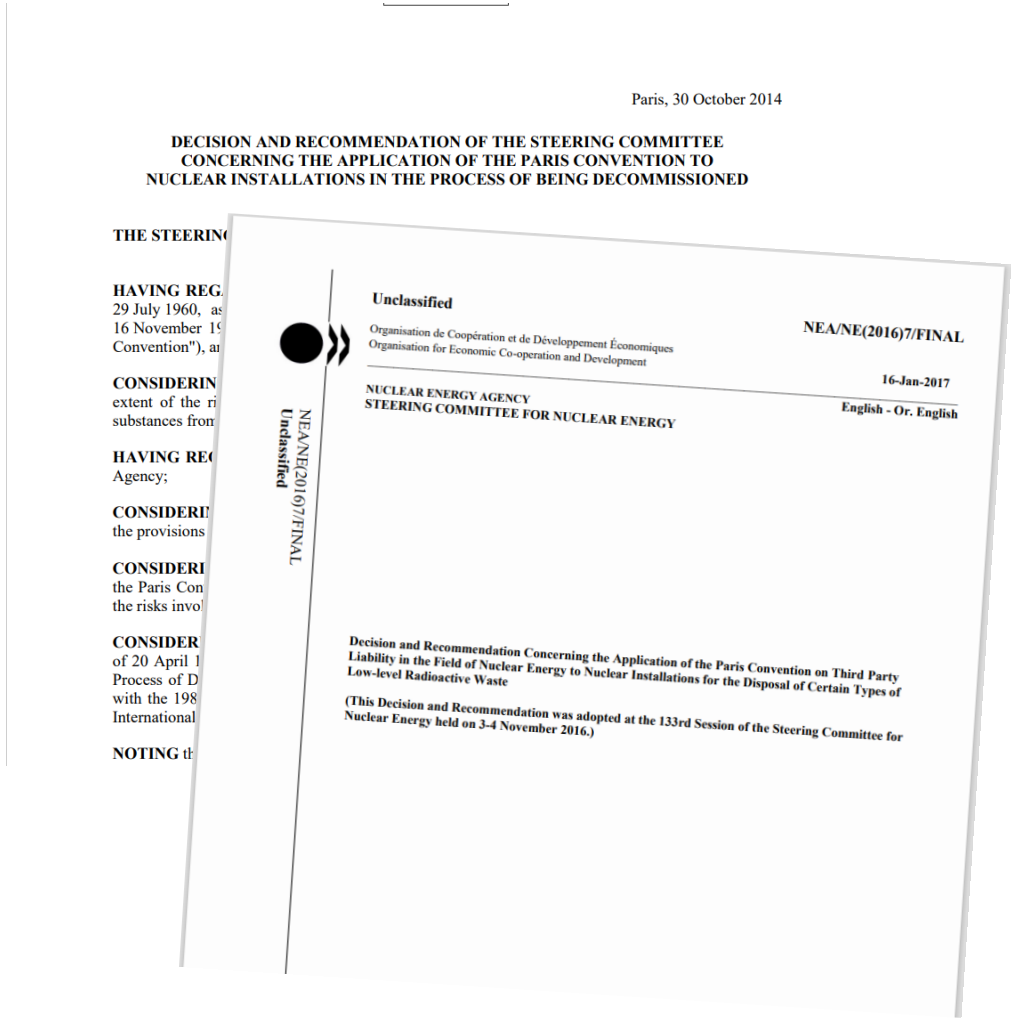


# PRC – Background to PRC delicensing criteria

- OECD Paris-Brussels convention on Nuclear Third Party Liability (NTPL) (1960-), implemented in NIA65
  - NTPL required until the end of the period of responsibility

- In 2014/2016 OECD introduced criteria to exclude some nuclear installations from NTPL
  - Nuclear installations in the process of being decommissioned
  - Nuclear installations for the Disposal of Certain Types of Low-level Radioactive Waste

- PRC criteria are based on these OECD exclusion criteria



Paris, 30 October 2014

**DECISION AND RECOMMENDATION OF THE STEERING COMMITTEE CONCERNING THE APPLICATION OF THE PARIS CONVENTION TO NUCLEAR INSTALLATIONS IN THE PROCESS OF BEING DECOMMISSIONED**

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**16-Jan-2017**

**NUCLEAR ENERGY AGENCY**
**STEERING COMMITTEE FOR NUCLEAR ENERGY**

**English - Or. English**

**Unclassified** NEA/NE(2016)7/FINAL

**Decision and Recommendation Concerning the Application of the Paris Convention on Third Party Liability in the Field of Nuclear Energy to Nuclear Installations for the Disposal of Certain Types of Low-level Radioactive Waste**

**(This Decision and Recommendation was adopted at the 133rd Session of the Steering Committee for Nuclear Energy held on 3-4 November 2016.)**

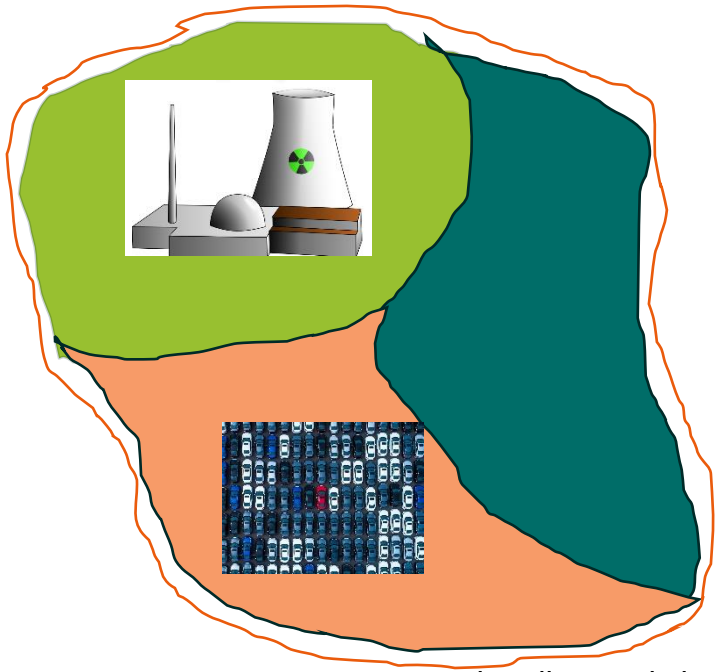
# PRC – Background to PRC delicensing criteria

- OECD exclusion criteria based on:
  - Radioactivity criteria i.e. non-comprehensive list of radionuclides and associated activity limits
  - Dose criteria i.e. potential off-site dose no greater than 1 mSv/year
  - Other considerations  i.e. other factors to consider where radiation dose on its own may be an insufficient basis on which to base exclusion
- When exclusion criteria met, site can still have remaining radioactivity on it e.g. radioactive contaminated land or structures

# PRC – Criteria for nuclear installations

- OECD NTPL exclusion criteria are for ‘nuclear installations’ not whole nuclear site (as covered by a nuclear site licence)

- To address this, in PRC, criteria defined for:
  - Nuclear installations; and
  - ‘Other’ areas of site i.e. areas of site with no nuclear installation on such as open land, car parks etc and on-site disposals



Nuclear licensed site

# PRC – Radioactivity criteria for nuclear installations

## Radioactivity criteria

Allowable activity remaining in an installation in terms of a specified list of radionuclides
(based on a conservatively biased, generic accident assessment such that off-site exposure would be ≤ 10mSv/yr)

| Isotope | Fixed activity (Bq) | All other forms of activity (Bq) |
|---|---|---|
| $Pu^{239}$ | 1E+13 | 1E+12 |
| $Pu^{241}$ | 1E+15 | 1E+14 |
| $U^{238}$ | 1E+14 | 1E+13 |
| $Cs^{137}$ | 1E+13 | 1E+12 |
| $Ni^{63}$ | 1E+16 | 1E+15 |
| $Co^{60}$ | 1E+14 | 1E+13 |
| $Fe^{55}$ | 1E+16 | 1E+15 |
| $Eu^{152}$ | 1E+14 | 1E+13 |
| $Eu^{154}$ | 1E+14 | 1E+13 |
| $Cl^{36}$ | 1E+12 (assumed to be in easily releasable form) | |
| $Sr^{90}$ | 1E+14 | 1E+13 |
| $Ag^{108m}$ | 1E+13 | 1E+12 |

Prescriptive screening test - Assessment should just be a comparison of characterisation data against this list

# PRC – Dose criteria for nuclear installations

Comprehensive, installation-specific assessment of potential accident scenarios

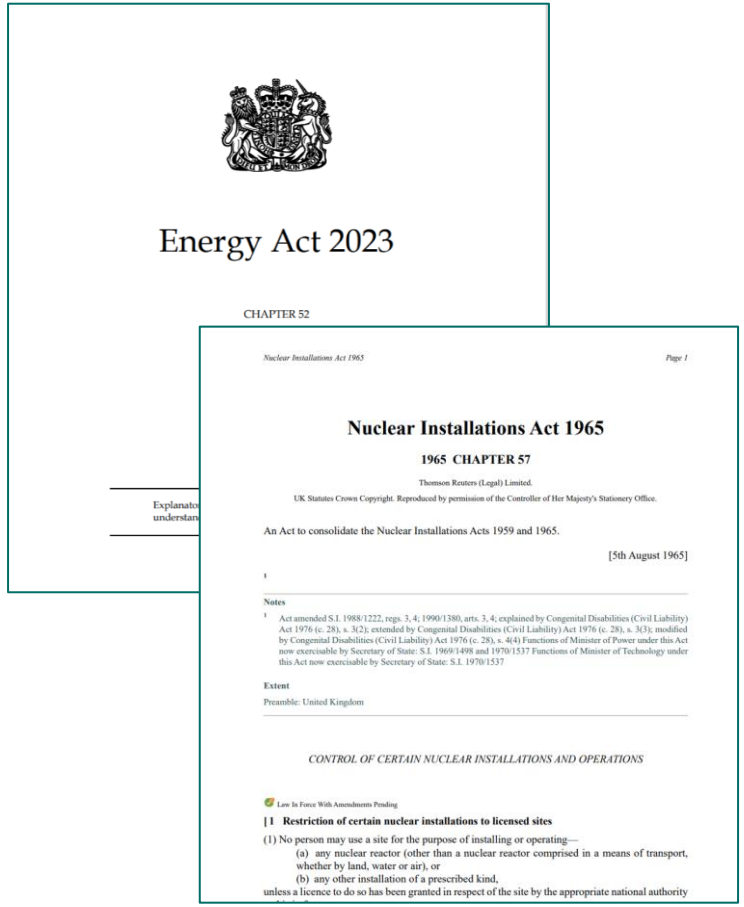
- Under all reasonably conceivable operational conditions, including accidental occurrences and security events

- Assuming that protective actions have not been taken (i.e. no mitigation measures)

Could not result in an off-site annual effective dose to a representative person of greater than 1mSv/y

# PRC - Implementation

- Energy Act 2023 includes amendments to NIA65 which implement PRC (www.legislation.gov.uk/ukpga/2023/52/pdfs/ukpga_20230052_en.pdf)
- Energy Act 2023 got Royal Assent in October 2023
- Was due to come into force in June 2024, but DESNZ delayed to deal with an issue around historic radioactively contaminated land not being covered by the extant environmental permit



Energy Act 2023

CHAPTER 52

Nuclear Installations Act 1965 Page 1

Nuclear Installations Act 1965

1965 CHAPTER 57

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An Act to consolidate the Nuclear Installations Acts 1959 and 1965.

[5th August 1965]

Notes

Act amended S.I. 1988/1222, regs. 3, 4; 1990/1380, arts. 3, 4; explained by Congenital Disabilities (Civil Liability) Act 1976 (c. 28), s. 3(2); extended by Congenital Disabilities (Civil Liability) Act 1976 (c. 28), s. 3(3); modified by Congenital Disabilities (Civil Liability) Act 1976 (c. 28), s. 4(4) Functions of Minister of Power under this Act now exercisable by Secretary of State: S.I. 1969/1498 and 1970/1537 Functions of Minister of Technology under this Act now exercisable by Secretary of State: S.I. 1970/1537

Extent

Preamble: United Kingdom

CONTROL OF CERTAIN NUCLEAR INSTALLATIONS AND OPERATIONS

Law In Force With Amendments Pending

[1 Restriction of certain nuclear installations to licensed sites

(1) No person may use a site for the purpose of installing or operating—

(a) any nuclear reactor (other than a nuclear reactor comprised in a means of transport, whether by land, water or air), or

(b) any other installation of a prescribed kind,

unless a licence to do so has been granted in respect of the site by the appropriate national authority

# PRC – Criteria in NIA65 (‘Applicable conditions’)

- New sections 3A (excluding parts of site from licence) and 5A (ending period of responsibility)

- Criteria called ‘Applicable Conditions’

- Applicable Conditions defined for:
  - Prescribed disposal installations (such as GDF) (3A(2), 5A(2))
  - Nuclear installations (3A(3), 5A(3))
  - ‘Other’ areas (3A(4), 5A(4))

- Licensee may elect to use ‘no danger’ (3A(5), 5A(5))

# PRC – Criteria in NIA65 (‘Applicable conditions’)

**3A(3) – Nuclear installation:**

(a) the use of any such installation within the relevant part has permanently ceased,

(b) appropriate measures for the containment and control of any remaining radioactivity are in place,

(c) the relevant part meets the radioactivity exclusion criteria and the dose exclusion criteria, and

(d) it is no longer necessary or desirable in the interests of safety for a nuclear site licence to be in force in respect of the relevant part.

Note (c) includes direct reference to the external OECD exclusion criteria

- The criteria therein must be used – ensures total alignment with this international criteria
- Reference is not ambulatory – the referenced version must be used even if it has been updated/ revoked

# PRC – Key changes to NIA65

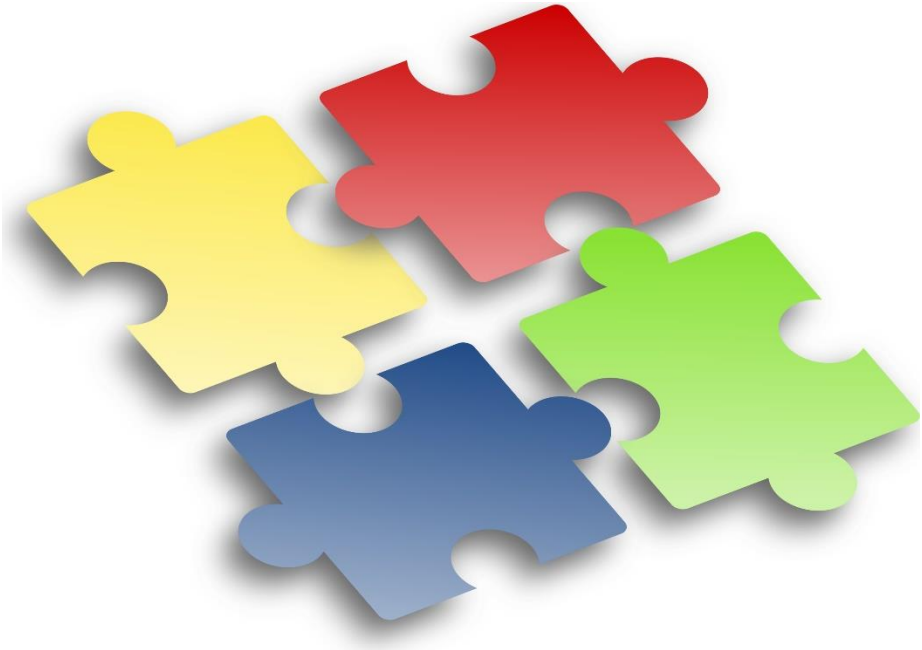
- New ‘applicable conditions’ for varying the licence and ending the period of responsibility
- Section 1(1) a licence is needed for the purpose of installing and operating a [reactor/ installation of a prescribed kind]. Reference to ‘operating’ extended to include a reference to ‘decommissioning’
- HSE becomes a statutory consultee before revoking or varying a licence (in addition to the relevant environment agency)
- Option for licensee to unconditionally surrender a licence is removed (NIA65 5(1)(b))

# PRC – Interfaces with other legislation/ regimes

- Interfaces with other legislation/ regimes, include:
  - Health and Safety
  - Town and Country Planning
  - IRR17
  - Environmental permitting
  - REPPIR19
  - EIADR
  - Security/ Safeguards

- Some exemptions for nuclear sites disapply after delicensing and change of enforcing authority

- Licensees encouraged to plan in advance of delicensing to ensure continued compliance

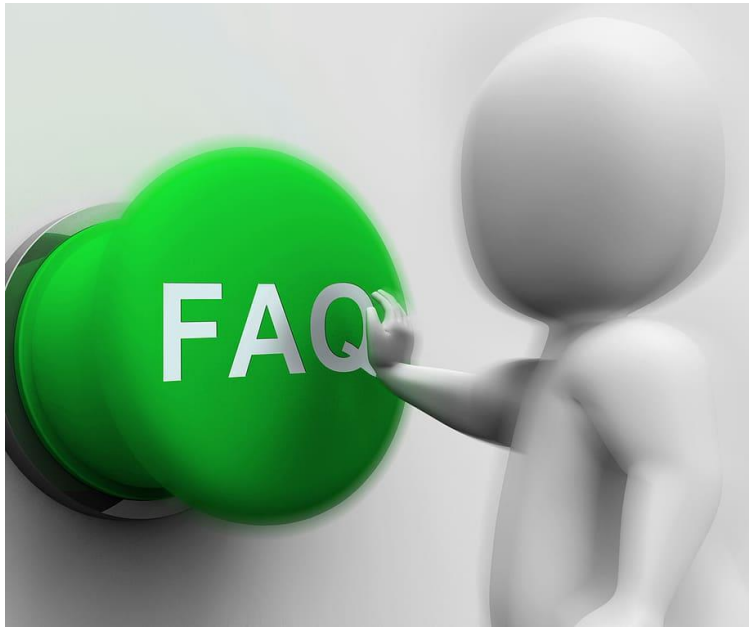


# PRC – Guidance available

- Relevant ONR Guidance updated to reflect PRC changes
  - Assessment for the Delicensing of a Nuclear Licenced Site (NS-TAST-GD-110) TAG
  - Regulatory Processes for Delicensing Nuclear Licensed Sites (NS-PER-PROC-004)
  - PRC FAQ
  - Licensing Nuclear Installations

  - Will be published when PRC comes into force

- DESNZ preparing guidance on the LLW exclusion criteria (determination is done by the Secretary of State)



# PRC – Timeline for commencement

- DESNZ progressing legal work to address the historic radioactive contaminated land issue
- Currently, no date for PRC commencement
- No changes to the detail of PRC are anticipated, so licensees can continue to plan to use PRC with confidence
  - NDA actively exploring how PRC can be used for best benefit across its estate

- END -