



SMR Conference Manchester 2014

Regulator's view – UK and International

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Systems Lead for ONR's Generic Design
Assessment (GDA)

Contents

- Approach to New Nuclear Build Regulation in Great Britain: Generic Design Assessment (GDA) & Site Licensing
- The scope of assessment in GDA (Claims, arguments and evidence based pre-construction safety report)
- Safety Assessment Principles – effort proportionate to hazards
- OECD NEA Multi-Design Evaluation Programme (MDEP)

Approach to New Nuclear Build Regulation in Great Britain

Design

→ Phase 1 (Generic Design Assessment – GDA)

Site & Organisation

→ Phase 2 (Nuclear Site Licensing)

Phase 1: Generic Design Assessment

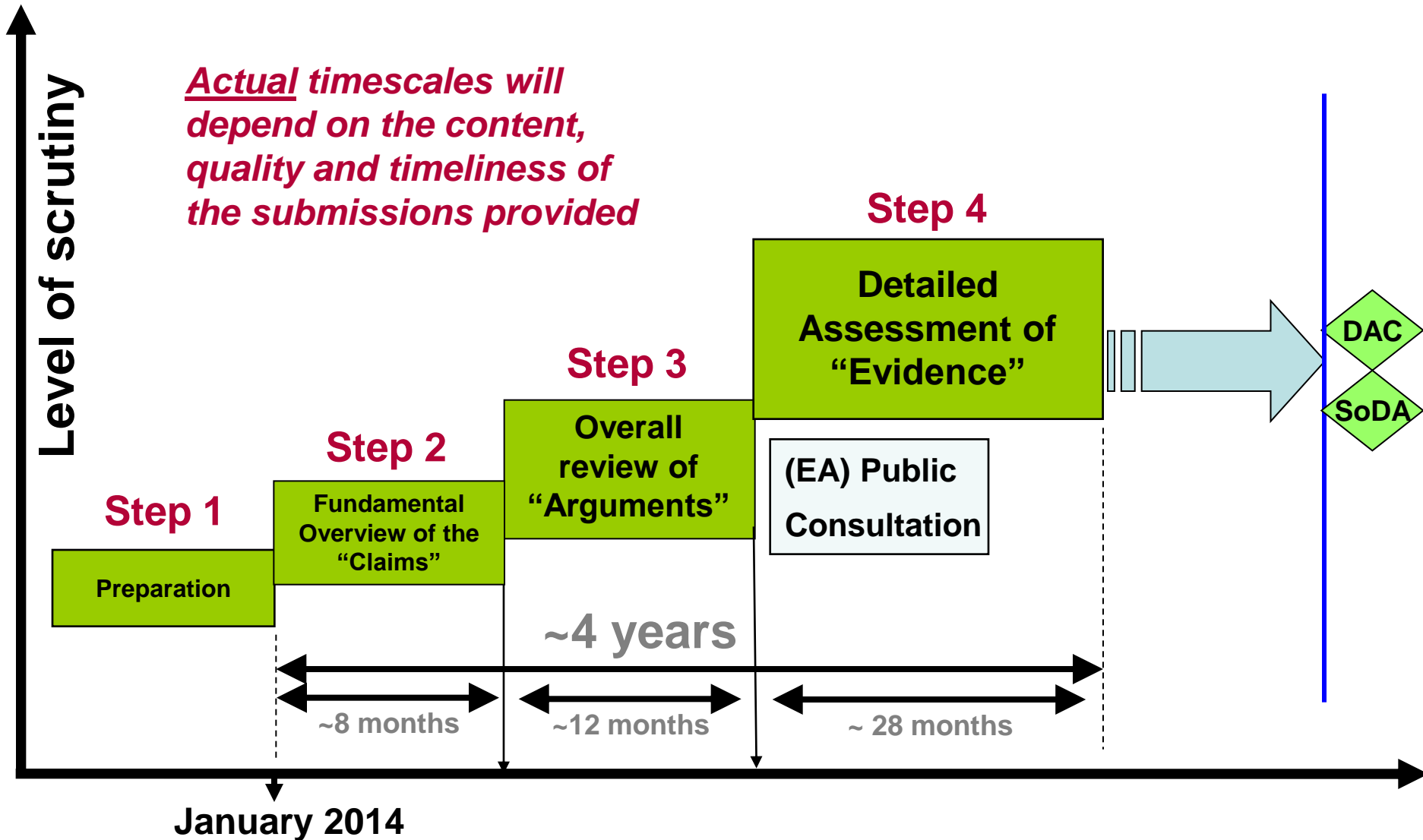
- Developed in 2006 – 2007 by the Office for Nuclear Regulation (ONR) and the Environment Agency (EA)
- Aim: to assess new nuclear reactor designs in advance of any site-specific proposals
- Assessment focus: generic reactor design + assumed UK-relevant generic site
- Assessment scope: nuclear safety, security and environmental impact
- Ultimate benefit: it helps to de-risk the site-specific licensing process
- Strategy: step-wise process with assessment getting increasingly detailed
- Reactors assessed: UK EPR™ (DAC Issued December 2012) and AP1000[©] (interim DAC) and ABWR (in Step 3)

Objectives of GDA

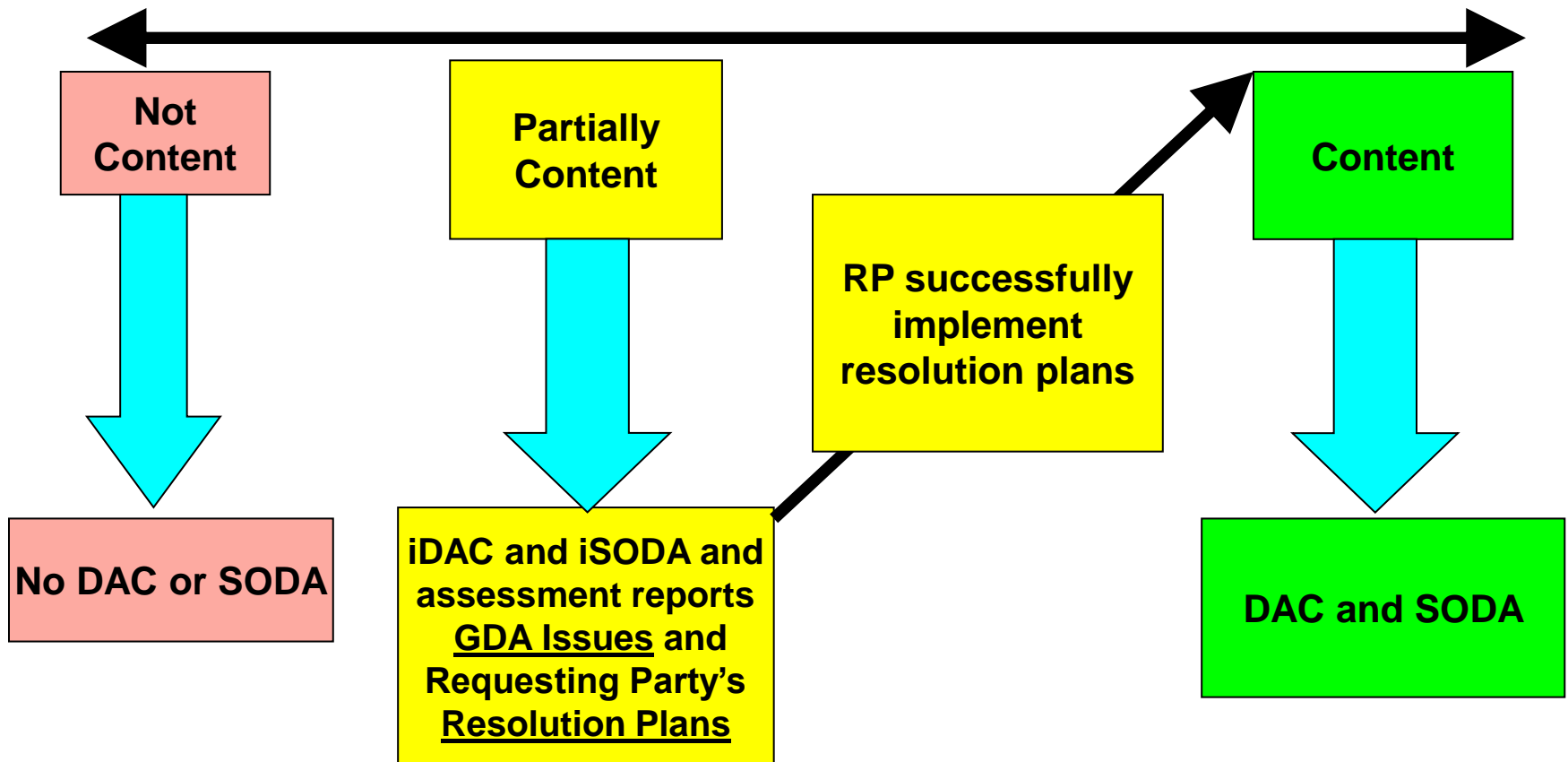
- Engaging early – maximising influence
- Identify and resolve key issues before build – reducing cost and time risks
- Maximise value of pre-application – simplifying site specific phase & standardising plants
- Licensing/permitting programme in line with investment decisions – enabling not blocking
- Openness, transparency and public input – building public confidence
- Regulators working together – clarifying expectations, providing consistency

UK ABWR GDA – Indicative Timescales

Actual timescales will depend on the content, quality and timeliness of the submissions provided



Potential Outcomes of GDA



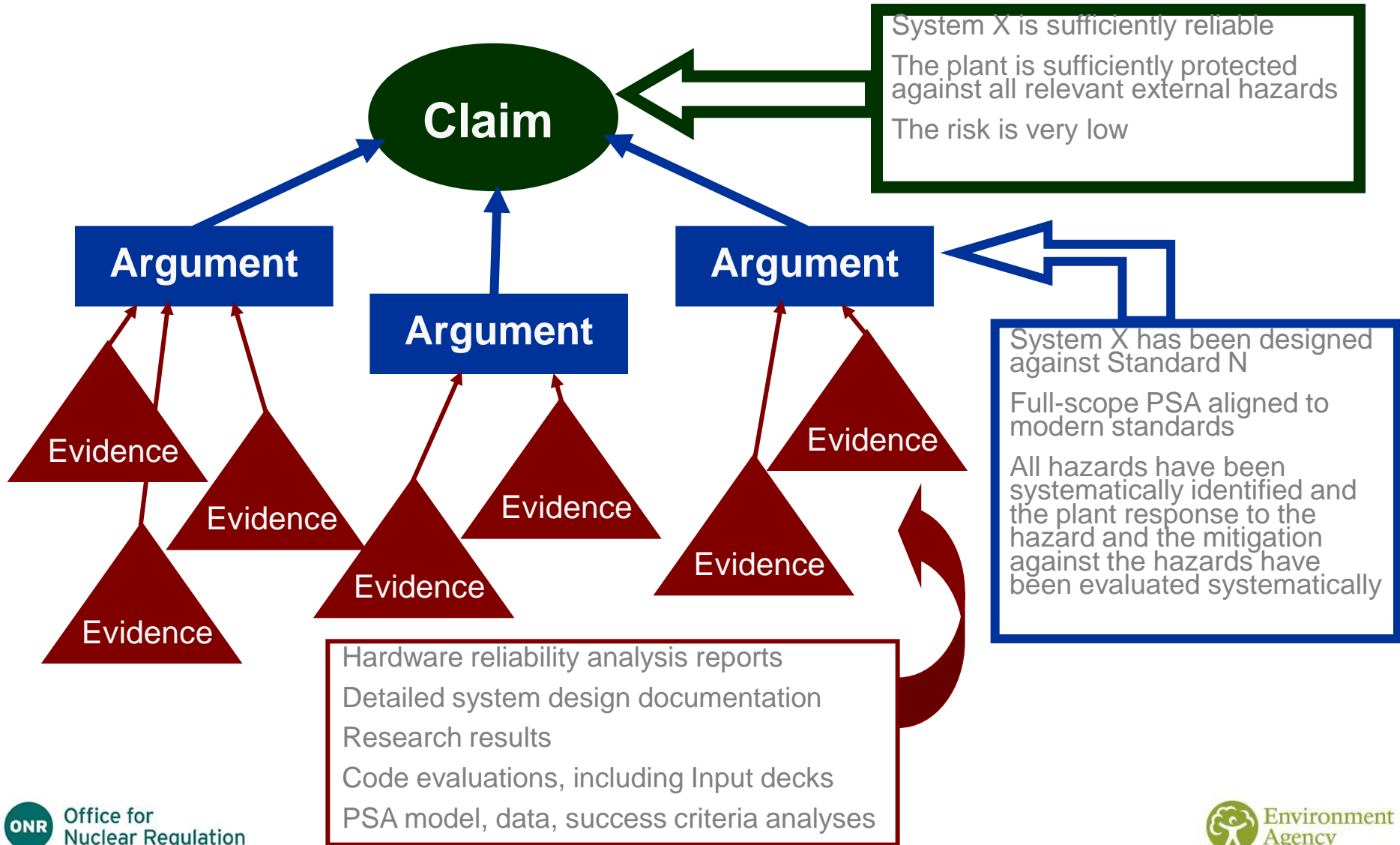
DAC: ONR's Design Acceptance Confirmation (iDAC: interim DAC)

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

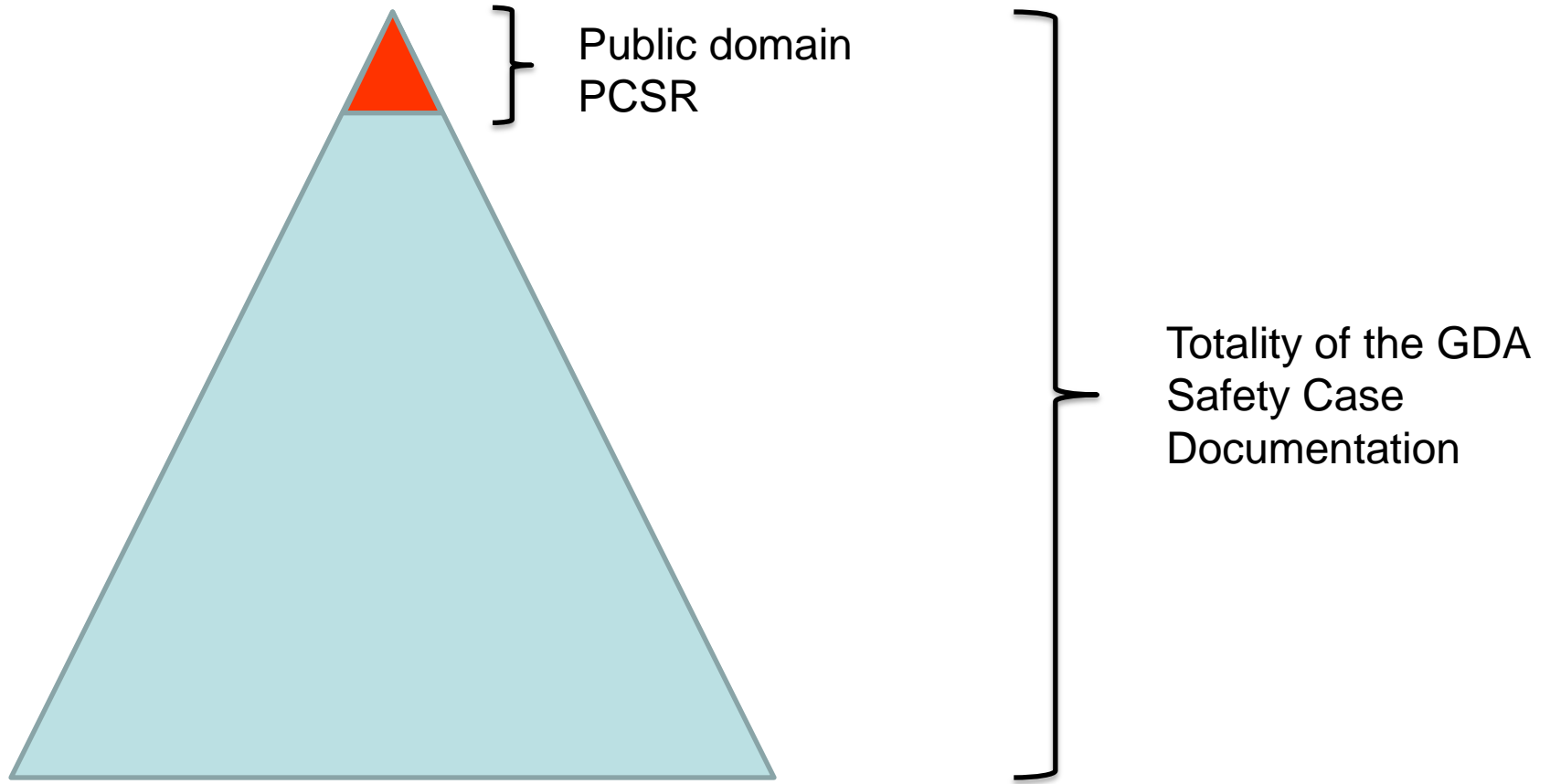
Phase 2 – Nuclear Site Licensing

- Operators use GDA in site-specific Licensing documentation together with:
 - Site and operator specific changes
 - Design updates - learning from builds
- Operator / Requesting Party establishes a programme to address other assessment findings from GDA
- ONR's assessment considers the site-specific plant (taking account of the assessments undertaken throughout GDA), the specific site and the operating organisation that will become the licence holder

Scope of Assessment: Claims / Arguments / Evidence

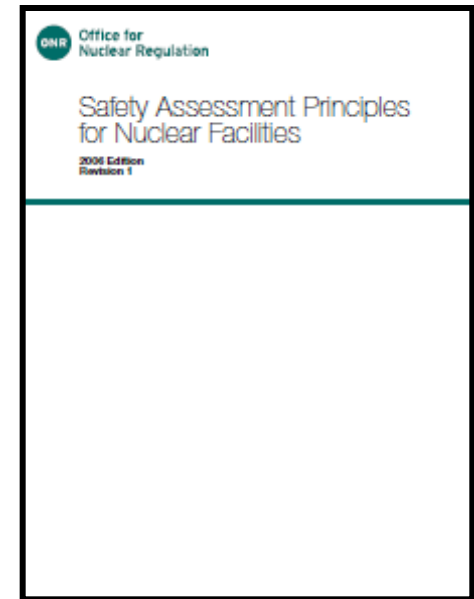


Scope of the Safety Case



Safety Assessment Principles for Nuclear Facilities (SAPs)

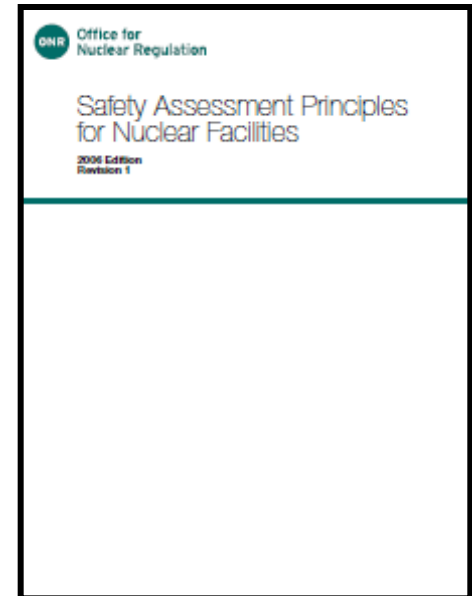
- SAPs are for all nuclear facilities regulated by ONR and cover a wide range of nuclear safety hazards, they are designed to be:
 - Applied proportionately to the hazards (6.0×10^{26})*
 - Consistent with and supportive of IAEA work and that of bodies such as the Western European Nuclear Regulators Association (WENRA)



*Fission products created in a year by a 300Mw_{th} (100Mw_{e}) reactor module.

SAPs

- ONR are reviewing their SAPs
 - Review initiated to address lessons learned following the Fukushima Daiichi accident, reinforcing safety expectations
 - The SAPs review process includes had an external engagement stage for a period of eight weeks
 - Publication of the revised SAPs is targeted before end of 2014



International Context (MDEP)

- An OECD-NEA programme involving the regulatory authorities from 13 countries.
- Currently covering 5 reactor designs with ONR playing a significant role in three of the reactor working groups.
- ONR also fully supports the three issue specific working groups.
- ONR have and will continue to support MDEP and views the work of this group to be an important element of ONR's work on GDA for delivering effective and efficient regulation.

Final Messages

- ONR's GDA process has developed over the past 7 years to become a very efficient and effective process.
- It is a very challenging process, for example resulting in 81 design changes to the reference EPR™ design, and by the end of Step 2 (August 2014) a number of important design changes to the ABWR.
- From the start of Step 2 the time is generally four years although this is flexible dependent on:
 - The quality of the safety case and supporting evidence presented.
 - The maturity of the design and whether it has been certified in another country.
- How long it takes is largely in the hands of the Requesting Party – a high quality safety case (PCSR) supported by in-depth evidence is the best way to ensure timely and potentially faster route to a DAC.