



Office for
Nuclear Regulation

ONR Update Presentation 3rd UK Nuclear Academics Discussion Meeting

2nd and 3rd September 2014 – University of Leeds

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Office for Nuclear Regulation

- Established as a statutory public corporation on 1st April of this year, under the Energy Act 2013.
- Regulation of safety and security of 37 nuclear licensed sites in the UK
- Regulation of transport and safeguarding of nuclear and radioactive materials

Mission

- To provide efficient and effective regulation of the nuclear industry, holding it to account on behalf of the public.



Principal Function

- The ONR must do whatever it considers appropriate for the ONR's purposes.
- That includes, so far as it considers appropriate, assisting and encouraging others to further those purposes.

Research

- The ONR:
 - may carry out research in connection with the ONR's purposes, or arrange for such research to be carried out on its behalf, and
 - must, if it considers it appropriate to do so, publish the results of any such research or arrange for them to be published.



Current Approach

- Nuclear Research Needs (NRN)
 - ONR view on the need for research
 - A single source of publically available information
 - Coverage - 18 topic areas
 - A position against which to consider duty holder's research programmes
 - Includes research underway and yet to be started
 - Duty holders retain responsibility to determine what research is necessary

NRN Topic Areas

- Civil Engineering
- External Hazards
- Chemical and Process Engineering
- Mechanical Engineering
- Structural Integrity
- Graphite Research
- Radiological Protection and Criticality
- Human and Organisational Factors
- Control & Instrumentation and Electrical Engineering
- Radioactive Waste and Decommissioning
- Probabilistic Safety Assessment
- Internal Hazards
- Deterministic Safety Analysis
- Radioactive Materials Transport
- Nuclear Fuel Research
- Civil Nuclear Security
- Nuclear Safeguards
- Environment Agencies



ONR Research Strategy Review

- Issues with NRN approach
 - Research programme driven by short/medium term technical priorities
 - Weak connection to ONR's overall strategy
 - Poor positioning of ONR research programme within wider research landscape
 - Partial or weak evaluation of past investment
- Research Strategy Review
 - Independent external review commissioned
 - Report received June 2014
 - Under consideration by ONR



ONR Research - Forward Look

- Licensee's continue to have primary duty to undertake research necessary to underpin safety cases
- ONR to develop clear criteria for independent research
- Preserve ONR observer status on research bodies (e.g. NIRAB)
- Reduce work in areas of maturity
- Make best use of independent advice
- Reduced central approach by ONR



Structural Integrity Research

- NRN
 - Structural Integrity: 45 statements of need
- Review example
 - Fracture assessment (metals)
 - Modelling of residual stresses
 - Mature area of technology
 - Aimed at reducing conservatism
 - ONR to monitor developments only

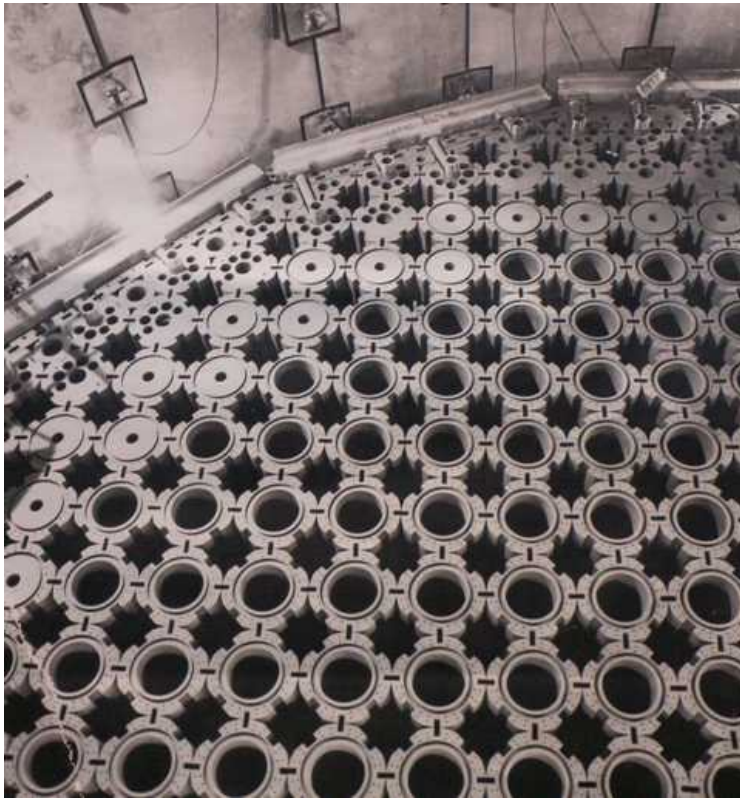


Graphite Research

- NRN
 - Graphite: 21 statements of need
- Review example
 - Independent graphite capability (GTAC)
 - 45 questions raised to date
 - AGR component and core assessment
 - Modelling keyway root cracking
 - Test safety case claims and assumptions



Graphite core under construction





Hoop Stress ManUmat_UKAEACreep vs EDF_Umat

