

# **Technical support for new civil reactor build**

**Alex Miller**  
**NuSAC RG6**  
**2/10/07**

# Generic Design Assessment

- HSE started a new process of GDA in July, with 3 assessment steps over about 3.5 years, in increasing detail. The main NuSAC in October will consider GDA.
- Four designs are being considered in the initial assessment step:
  - Areva EPR
  - WEC AP1000
  - GEC ESBWR
  - AECL ACR1000

# Technical support needs for GDA

- HSE's detailed assessment strategy for GDA is still being developed, including the balance between internal and external assessment.
- HSE/ND Division 6 needs ready access to technical and scientific support which is independent of the vendors and is able to provide advice on the claims of the vendors.
- HSE's published guidance for GDA states that HSE will take advantage of existing information available overseas.

# Support arrangements

- In preparation for the later stages of more detailed assessment, arrangements are being made to ensure access to external information and advice. At a time of renewed interest, there is increased competition for external resources.

## UK support arrangements – not specific to new build

- HSE has an existing framework agreement with Serco, BOMEL & Engineering, Safety and Risk Technology (ex-AEAT).
- HSE-ND is currently considering options for ensuring access to a suitable range of contractors for nuclear support.
- HSE has an MOU with HPA-CRCE (former NRPB).

## Access to other regulators' information

- The designs for GDA (or closely related designs) have all been or are being subjected to assessment by other countries' regulators (USNRC, ASN, STUK, CNSC).
- HSE has or is negotiating Information Exchange Arrangements with all these regulators.
- HSE has 2-way secondments with ASN and is discussing potential secondments with USNRC.
- HSE is participating in the Multinational Design Evaluation Project under the auspices of OECD-NEA.

# Access to Technical Support Organisations overseas

- HSE is interested in facilitating:
  - access to existing reports,
  - discussions with staff
  - potentially placing contracts.
- HSE:
  - has such an arrangement with IRSN France.
  - is negotiating an arrangement with VTT in Finland
  - has research exchange agreements with USNRC for severe accidents and computer modelling (T/H, neutronics)

## Initial assessment step

---

- This will be completed by Easter 2008
- Work is being carried out on a contingent basis, subject to the government declaring its nuclear power policy.
- Support contracts have been given to:
  - IAEA for assessment against IAEA Safety Standards
  - HPA for advice on accident consequences.

# Research requirements (1)

- The vendors are expected to have carried out all the required safety research.
- HSE will seek access to safety research carried out by overseas regulators.
- Potential further safety research requirements will be considered in the second assessment step next year and carried out in the third and final assessment step.

## Research requirements (2)

- Factors affecting research requirements include:
  - Departure from proven technology
  - Uncertainties in performance
  - Degree of defence-in-depth.
- HSE may carry out additional confirmatory research or technical analyses to support its regulatory decisions and it may also engage external contractors, including non-UK organisations. Factors affecting such research requirements include:
  - Familiarity of the technology to the UK
  - Issues arising from early steps of the safety case assessment
  - Other R&D programmes, including research information from other overseas regulators who have reviewed the design.

## Future research arrangements

---

- Priority will be given to collaborative arrangements.
- It is too early to consider the potential role of a national nuclear lab in new civil reactor build work.
- It is too early to identify future research topics.