

Planning risks and potential gaps in nuclear weapon convoy and military nuclear site emergency plans.

**Presentation to Nuclear Free Local Authorities seminar
Glasgow, 20 September 2012**

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What we'll talk about



- **Key locations in the UK military nuclear programme.**
- **Legislation and regulation.**
- **Emergency planning arrangements for different types of nuclear accident.**
- **Issues relating to emergency planning zones.**

Ministry of Defence nuclear programmes



- **Submarine nuclear propulsion programme:**
 - Three reactor designs.
 - Construction and dockyard infrastructure.
- **Nuclear weapons programme**
 - Trident warhead.
 - Atomic Weapons Establishment.
- **Nuclear liabilities:**
 - Out of service submarines.
 - Facilities requiring decommissioning.

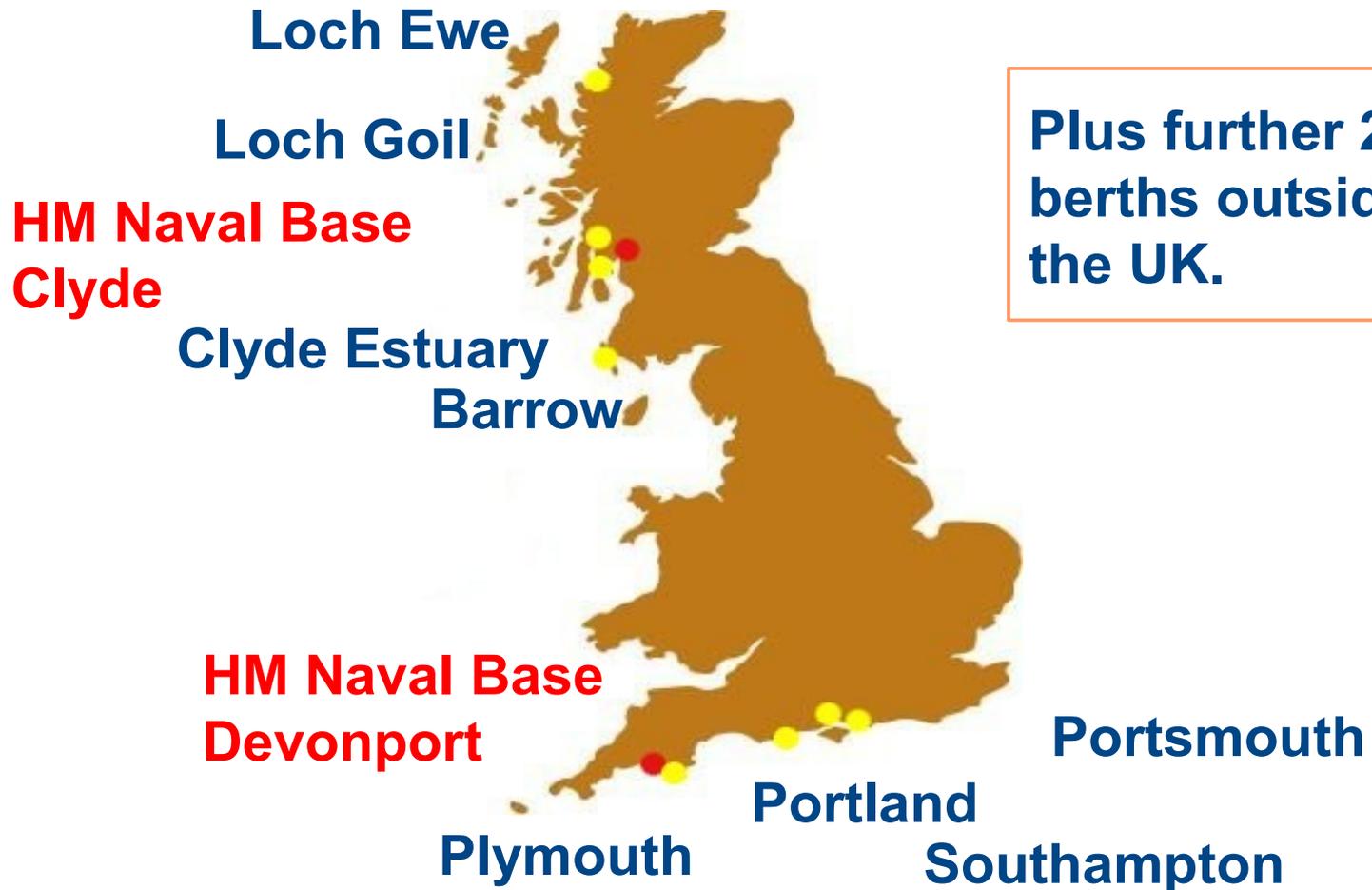
Submarine construction

**BAE Systems
Barrow-in-Furness**



**Rolls-Royce Marine
Derby**

Submarine bases and berths



Plus further 28 berths outside the UK.

Nuclear weapons

**Royal Naval
Armaments Depot
Coulport**

**Atomic Weapons
Establishment
Aldermaston and Burghfield**



Nuclear liabilities

**Vulcan Naval
Reactor Test
Establishment
Dounreay**



**HM Naval Base
Rosyth**

**Atomic Weapons
Establishment
Aldermaston and
Burghfield**

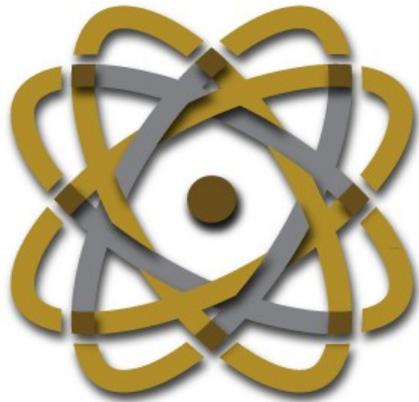
**HM Naval Base
Devonport**

Legislation



The Radiation (Emergency
Preparedness and Public Information)
Regulations 2001

- **Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR) covers nuclear sites.**
- **Authorisee must undertake Hazard Identification and Risk Evaluation.**
- **Local authority responsible for preparing off site emergency plan.**
- **MoD is not exempt.**
- **Does not cover weapon transport or visiting submarines.**



Regulation

- **Principal responsibility for safety lies with the MoD Authorisee.**
- **Office for Nuclear Regulation:**
 - **Civilian nuclear regulator.**
 - **Responsible for overseeing REPPiR.**
- **No control over warhead design, transport, military sites, or areas outside UK .**
- **Defence Nuclear Safety Regulator: MoD internal nuclear regulator.**

Emergency planning arrangements

Licensed / Authorised sites:

- Off site emergency plans (LA).

Submarine berths:

- Special safety schemes (LA).

Nuclear weapons / materials in transit:

- Local Authority and Emergency Services Information (LAESI) (MoD).
- Warhead / Special Nuclear Material convoys.
- Air transport.
- Rail transport of spent fuel.



Local Authority and Emergency
Services Information (LAESI) Edition 9

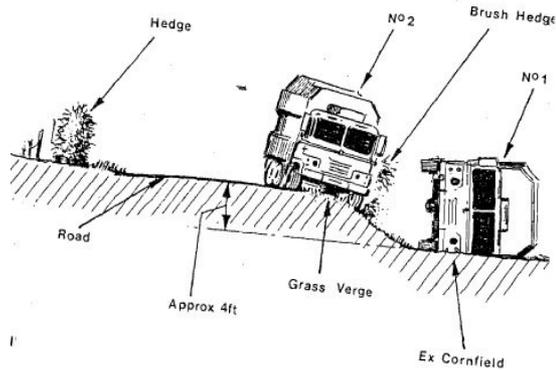


Emergency plans



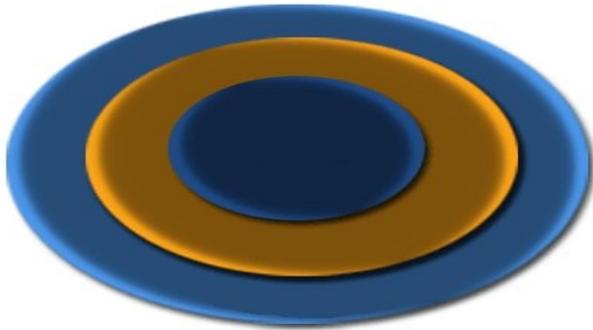
- **Sites:** No plans publicly available for HMNB Clyde, Barrow, or Vulcan.
- **Berths:** No plans publicly available for Portland, Clyde Estuary, or Loch Goil.
- **Plans not required for Rosyth or Derby** as ONR considers there is no reasonably foreseeable off-site emergency at these sites .

How would a military nuclear accident play out?



- Led by central government with MoD as lead department.
- Heavy military involvement and presence.
- Civil responders would rely on MoD for nuclear expertise.
- Military will consider that security of their asset trumps immediate public safety concerns.

Emergency planning zones



- **Nuclear emergency countermeasures are based on a zoning system:**
 - **Evacuation zone.**
 - **Sheltering zone (Detailed emergency planning zone).**
 - **Extendibility zone.**
- **The size of these zones varies with different accident scenarios.**
- **ONR is keen to control development within these zones.**

Issues relating to the DEPZ



- Calculation performed by authorisee, not regulator.
- Methodology and parameters not available to the public.
- Key Hazard Identification and Risk Evaluation (HIRE) documents not published.
- Generic HIREs used for submarine berths and warhead convoy halts.
- No public consultation.

Inconsistencies



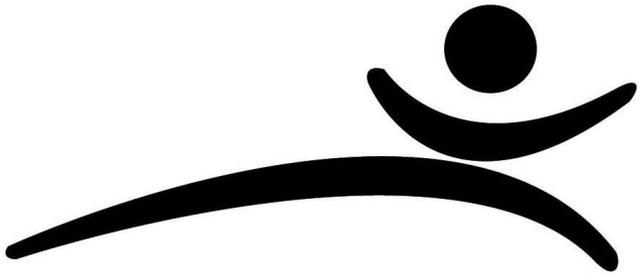
- **AWE Burghfield DEPZ:**
Sheltering out to 1.5 km.
- **LAESI for warhead convoy:**
Evacuate to 600 m and shelter to 5 km downwind in a 45 degree arc on wind direction
- **US Pantex nuclear weapons plant:** Inner zone of 8km and extendible outer zone of 16 km.

Lack of regulatory scrutiny

“I have briefly reviewed the AWE's formal submissions ... NII (now ONR) is unable to establish the extent of analysis that has been undertaken by AWE ... NII does not have the time to undertake detailed assessments of such submissions”

**- Email from Office for Nuclear Regulation inspector,
8 August 2013**

Extendibility



- **No specific pre-planned arrangements in extendibility zones.**
- **No field emergency exercises have been undertaken to test extendibility plans.**
- **Experience from Fukushima suggests that an emergency affecting the extendibility zone would be the norm.**

Transparency



- **Accident scenario used for emergency planning is not disclosed.**
- **The basis on which emergency zones are calculated is not disclosed.**
- **MoD and DECC failing to engage with the public.**
- **Present arrangements are opaque and appear to be arbitrary.**

Recommendations



- **Recognise the shortcomings in emergency planning arrangements.**
- **MoD must engage actively with communities affected by nuclear programmes, local authorities, and NGOs.**
- **Review emergency planning policies and set a defined standard of service for emergency arrangements which will protect people and society from the hazards of the nuclear industry.**

Action local authorities can take



- **Request clarification and certainty from central government agencies - 'muddling through' is not good enough.**
- **Pressure for improvement and openness at the political level.**
- **Press to bring regulation of MoD nuclear programmes under an independent civilian regulator.**

Thank you friends.

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