
INTEGRATION OF FACILITY AND PLANT SAFETY CASES

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Rolls-Royce plc

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Managing Safety Across Boundaries
MoD Abbey Wood 15/16 October 2003**



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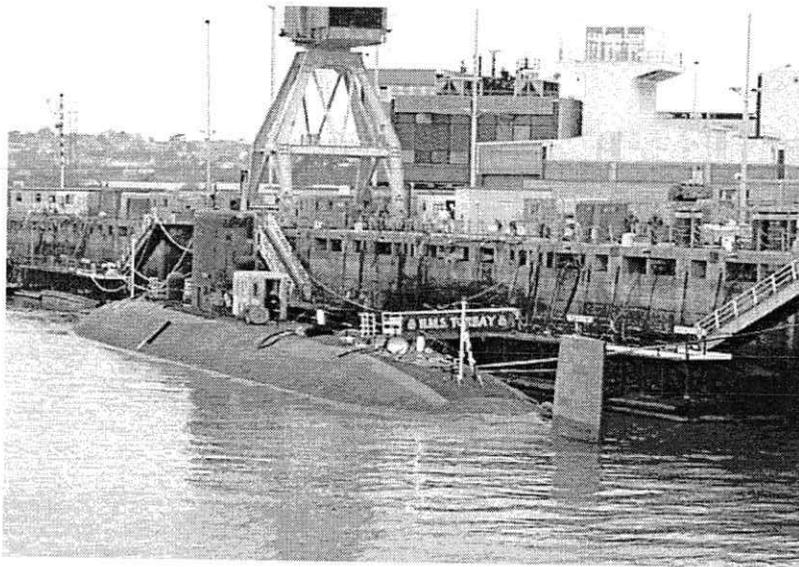
History

- **HMS Dreadnought 1963**
- **DS/MP1 1965**
- **HMS Valiant 1966 + HMNB Faslane 1967**
- **HMS Resolution 1968**
- **HMS Swiftsure 1973**
- **HMNB Devonport 1980**
- **HMS Trafalgar 1982**
- **Shore Test Facility 1987**
- **HMS Vanguard + HMNB Faslane/Coulport 1993**
- **HMS Astute**



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SUBMARINE - AFLOAT & DOCKED



S & T CLASS



VANGUARD CLASS



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History - PSA

- **1960s - Simple unstructured methods**
- **1975 - WASH 1400**
- **1970s - Development of probabilistic methods**
- **1980s - STF first reactor PSA**
- **1980s - Refuelling PSA**
- **1991 - Vanguard PSA**
- **1999 - Refuelling update**
- **2002 - STF RUR**
- **2002 - HMS Vanguard LOP(R)**
- **ongoing - HMS Vanguard new core**



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Plant and Facility Safety Cases

- **Plant safety case had been developed independently of facility safety cases**
- **Facilities designed against defined requirements**
- **Regulator pressure to integrate plant and facility to show balance and dependencies**



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Facility Safety Cases e.g. Devonport

- **Prior to 1987 regulation of Her Majesty's Dockyards was carried out internally by the MoD as exempt from Nuclear Installations Act 1965**
- **In 1987, dockyards handed over to management companies, e.g. DML at Devonport, so no longer exempt from NIA - refuelling activities licensed by NII**
- **In 1997, at Devonport, DRDL bought the dockyard assets and all activities involving nuclear plant became licensed by NII**



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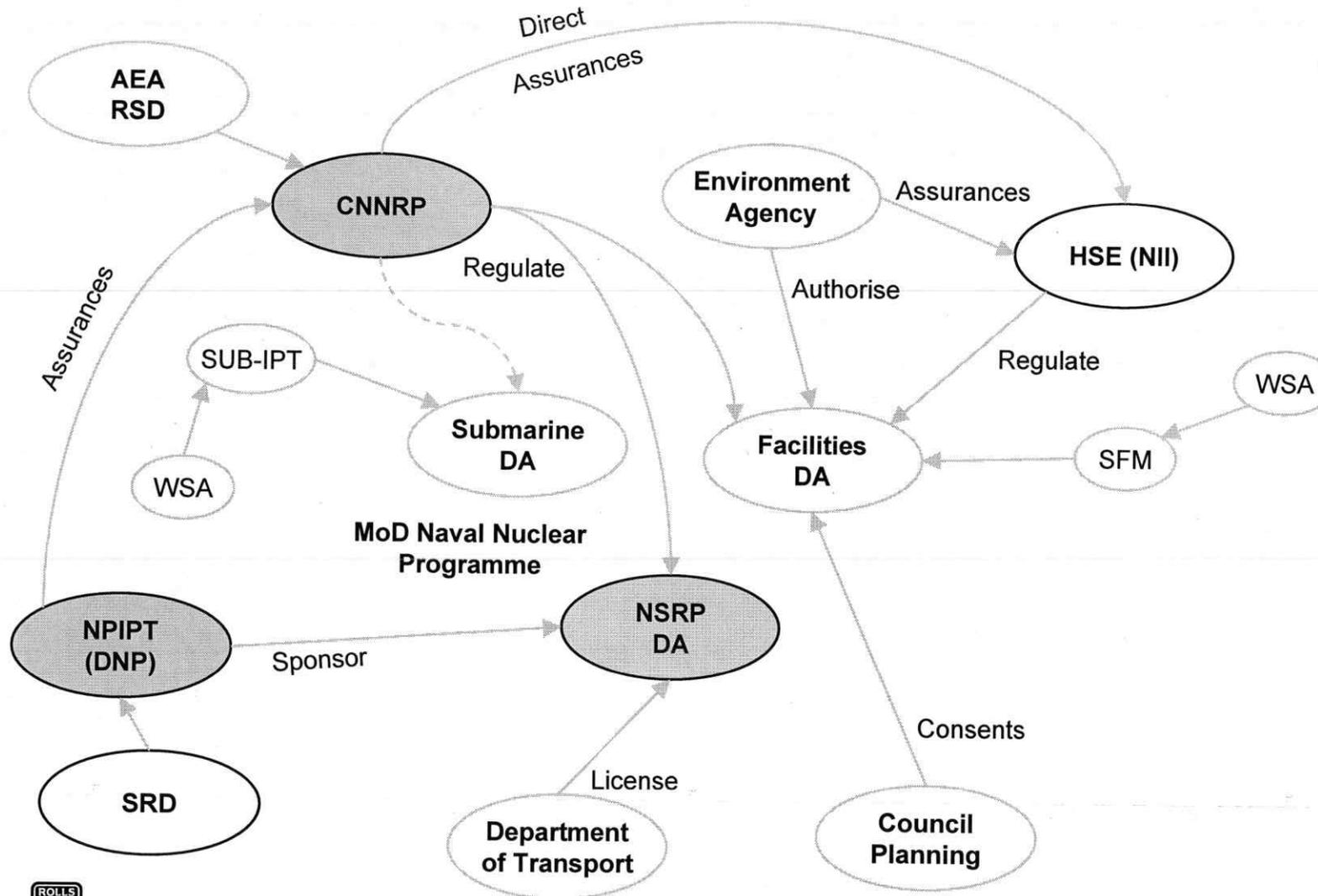
Facility Safety Cases e.g. Devonport

- **DRDL is authorised by MoD regulator, CNNRP, to operate authorised site to MoD safety principles and criteria**
- **DRDL is also licensed by civil regulator, HSE NII, to operate licensed site to HSE safety assessment principles and other regulations, e.g. IRR 1999**
- **DRDL have also to meet their own nuclear safety principles**
- **This makes relationships between operators, owners and regulators complex**



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Naval Nuclear Programme Stakeholders



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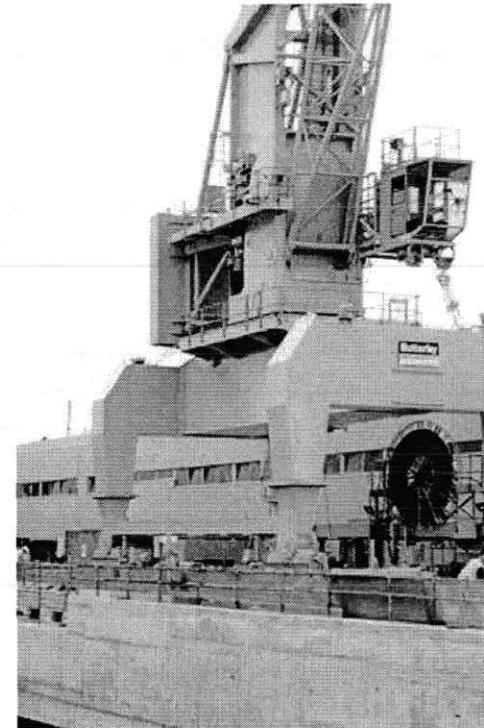
WHICH CRANE ?



FASLANE



BARROW

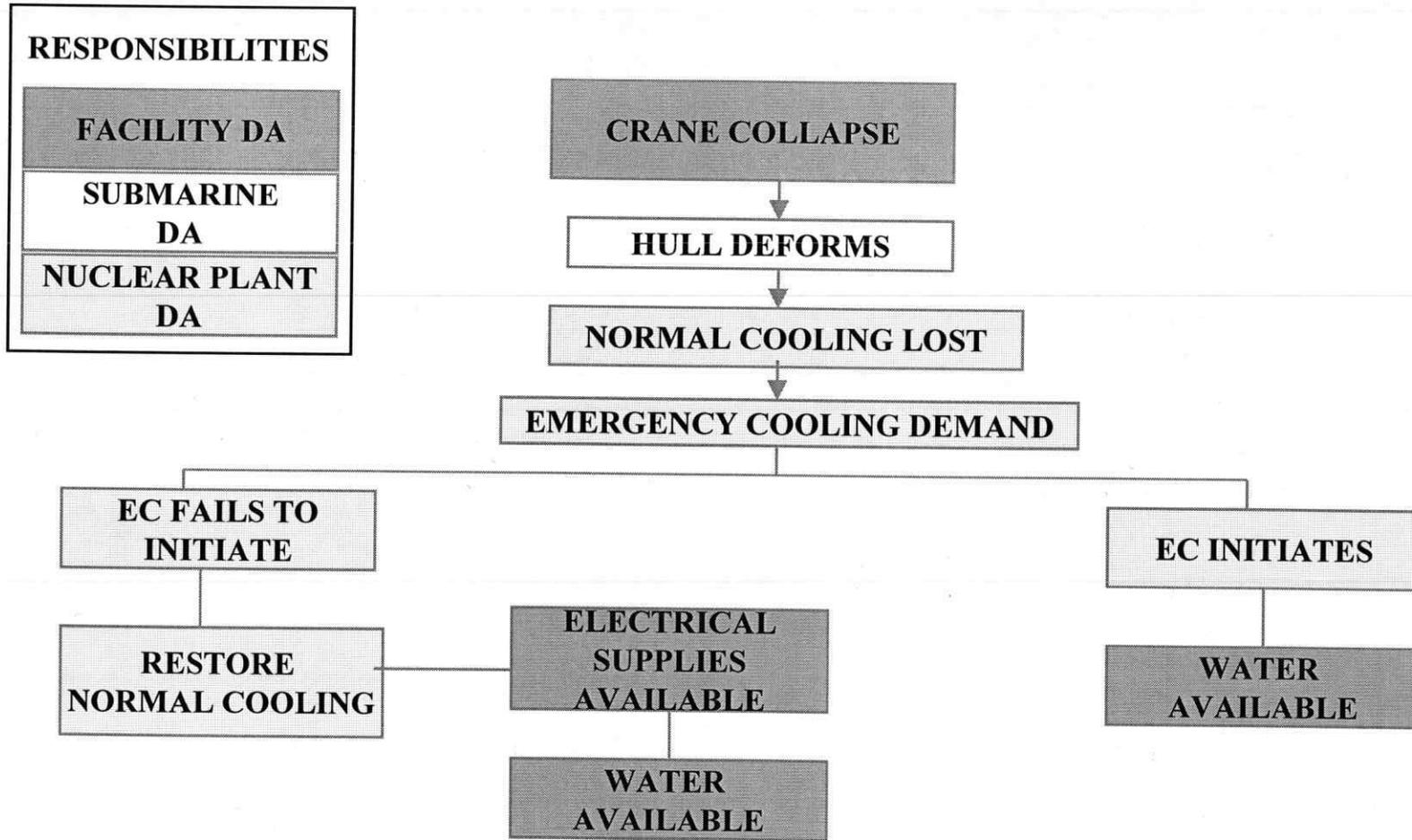


DEVONPORT



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INTERFACE - PLANT & FACILITY SAFETY CASES



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PLANT/FACILITY SAFETY CASE INTERFACE REQUIREMENTS

- **Considers Risk Drivers at Facility Level**
- **Clearly identifies contributions of risks**
 - **Submarine (inherent risks)**
 - **Facility (Activities)**
 - **Shared (Support System Failures)**
- **Reflects the Facility**
 - **Scope**
 - **Hazards**
- **Reflects agreement on provision of safeguards**



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**PLANT/FACILITY SAFETY CASE
INTERFACE REQUIREMENTS**

continued

- **Contained in referenceable documents**
- **Provides consistent strategy all sites**
- **Minimises work**
- **Provides mechanism for responding to safety significant change**



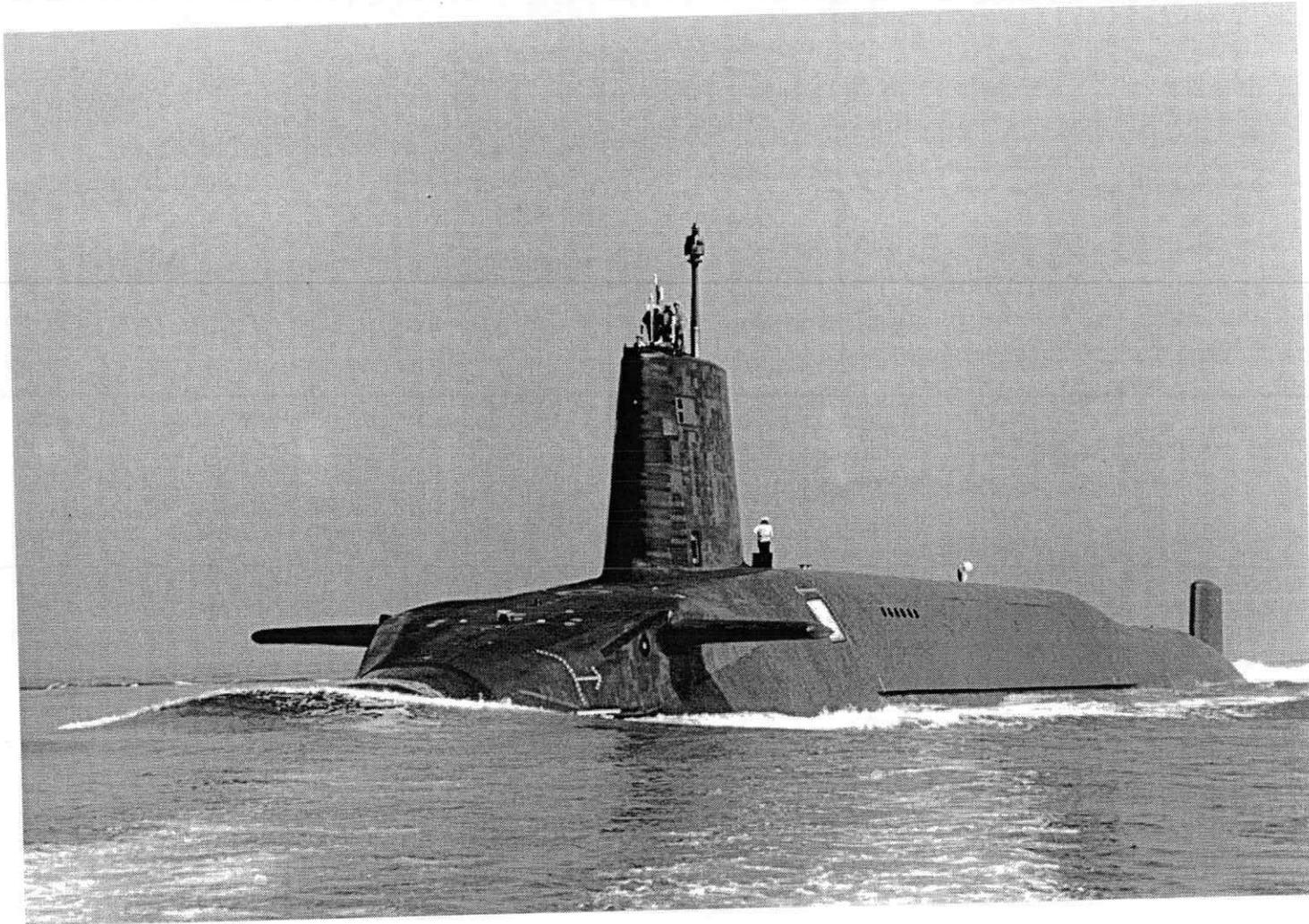
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CONCLUSION

- **Multi-Sites**
 - Common Approach**
 - Supplemented by Facility Specific Requirements**
- **Submarine Role**
 - Submarine Withstand/Safeguards better defined**
- **Transfer of Ownership**
 - Operating limits/conditions in clear referenceable support documents**
- **Dual Regulation**
 - Clear justification to ‘Modern Standards’**



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