

## SAFETY 1 - Polaris Submarine

Designed for 20 year life - launched 1966-68 -  
all submarines have exceeded their design life -  
structure must now be suspect

Reactor - pressurised water reactor -  
non-missile submarines with exact same reactor found to  
have serious reactor defect - many of these now  
laid-up. (Greenpeace 1)

Steam Generator - HMS Repulse found to have  
developed "stress corrosion cracks" in steam generator  
(STU)

Refits - Each submarine (four - Resolution,  
Repulse, Renown; Revenge) requires a refit every few  
years - costs of these refits becoming too expensive -  
normal length is 18 months - period growing longer  
because of much enhanced overhauls required - Renown  
now at refit since October 1987, four years - no sign  
this submarine will be operational soon - Repulse seems  
to be off active service - Revenge is intermittent -  
only Resolution is fully functional - no explanation is  
forthcoming from Admiralty why above scenario prevails  
(Greenpeace 1)

## SAFETY 2 - Public

Submarines operating in Clyde estuary, North Channel, and Minch are hazards to fishing vessels - many incidents have occurred - fishing vessels damaged and sunk

If reactor should explode whilst submarine is in vicinity of Clyde or at Faslane or Rosyth, would constitute high risk to civilian population of Scotland

Other Populations - Polaris submarines are not allowed to visit ports of friendly nations because of risk - only with expressed approval of Submarine Safety Committee (a Government body) - (STU)

## SAFETY 3 - Trident Submarine

Submarine Hull - three submarines under construction at Barrow - HMS Vanguard nearing completion - may commence trials in early 1992 - but will not enter service until 1995 - delays due to design changes being made throughout programme - these changes to submarine may cause defects

Tactical Weapon System (TWS) - essentially a very sophisticated computer suite - running at least two years behind schedule - no trials have been made yet with this system in harbour let alone at sea - may not function (remember GEC incurred £1 billion on radar system for Nimrod and then completely scrapped) - TWS must be installed on submarine before trials

Clyde Submarine Base, CSB, (includes Faslane and Coulport) - largest civil engineering project currently being constructed - safety standards of shiplift questioned by Director General Submarines and by UKAEA - whole complex is now more than two years behind schedule

Missile - made in USA - known as Trident II (DS) - USA Senate is not convinced that Trident II is design worthy - proposing to change propellant to less volatile type - this may necessitate changes to submarine structure - delays will ensue - missile has not functioned satisfactorily yet (Greenpeace 2)

Warhead - made at AWE Burghhead - or should be made there - but none produced - whole programme has slipped drastically - design of British warhead is secret - USA design known - bad design - has no fire resistant core - does not use insensitive high explosive, IXP - has no ENDS device (enhanced nuclear detonation safety) - accidental detonation of warhead is possible (SCCND)

#### SAFETY 4 - Trident Submariners and Service Personnel

Submariners will be at risk throughout time aboard vessels - service personnel at CSB and at Rosyth will be at risk to nuclear radiation and to enhanced "industrial accidents"

##### Population

An accident in CSB or Rosyth will put large numbers of population at risk to nuclear radiation

#### ECONOMICS 1 - Polaris System

Polaris is requiring greatly increased sums to maintain vessels and to undertake refits - system does not meet design specification - should be two submarines at sea at all times to ensure nuclear deterrent would function - doubtful if one submarine functioning at any given time - facility provided does not merit expenditure incurred even by Admiralty standards

#### ECONOMICS 2 - Trident System

Trident initially cost £10 billion - now estimated to be £25 billion - enhanced costs arising from delays described above will put up overall cost substantially - need for deterrent by British government removed - government may decide to scrap whole programme - and win peace vote. (Much more detail obviously required here)

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#### References

- Greenpeace 1 - "Bring Polaris Home" Report by Greenpeace UK, London, May 1991
  - Greenpeace 2 - "The Problems of the Trident Programme" GreenPeace UK, London, July 1991
  - STV - "In Deep Water - the Problem with Polaris" Scottish Television, 19 September 1991
  - SCCND - "Stop Trident" - Study Pack issued by Scottish Christian CND, July 1991
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