



Faslane - Scotland's Chernobyl

The largest ever nuclear accident exercise will take place at Faslane submarine base from 18th to 20th November 1997. Exercise Short Sermon will simulate a limited release of radioactive material into the atmosphere from the reactor of a nuclear submarine.

The exercise will involve evacuating up to 5,000 people from Faslane base and decisions being made on measures to protect the public in the surrounding area. However the exercise will not simulate the worst possible accident, which could affect most of Scotland.

Nuclear submarines in Scotland

Faslane is the base for eight nuclear powered submarines, three of which are armed with Trident nuclear missiles. Other British nuclear powered submarines based in Devon regularly visit Faslane. There are also visits by French and US nuclear powered submarines, including US submarines armed with Trident nuclear missiles. The base is 7 kms from Helensburgh and 40 kms from the centre of Glasgow.

Conduct of Exercise Short Sermon within Faslane

An accident will be simulated on a nuclear powered submarine. Emergency services from the base and from outside will be called to the scene, where they would need to have a high degree of protection.

Probably just before lunchtime on Tuesday 18th, an alarm will tell everyone inside the base to take shelter. A massive and complex operation will then take place to evacuate 3,000 - 5,000 people who are inside the base. The Emergency Planning Officer at Faslane has described Short Sermon as "perhaps the most intense exercise ever held by NARO (Nuclear Accident Response Organisation) ... All departments, lodger units, ships and submarines alongside will be affected by it. Play within the base will be total with very few exceptions."

Conduct of Exercise Short Sermon outside Faslane

A new version of the Clyde Public Safety Scheme (CLYDEPUBSAFE) has just been published by the Navy. It is assumed that this will form the blueprint for this Exercise.

Units will be despatched to carry out monitoring to find out the levels of radiation both inside and outside the base. They will be told what figures to radio in to their headquarters. Making sense of these readings will take time - in a similar exercise at Devonport in 1993 it took 24 hours to collate all the notional radiation monitoring information.

Apart from monitoring it is unlikely that any real public protection measures will take place outwith the base during Exercise Short Sermon. However emergency services, local authority and other representatives will meet to make decisions on paper about what response would be needed. They will staff the Clyde Off Site Centre at Rhu. Previous exercises involved Strathclyde Regional Council. It remains to be seen how well Argyll and Bute Council will respond to an exercise of this magnitude.

There will also be involvement at higher levels of Government including Whitehall. George Robertson, the Secretary of State for Defence will be kept informed of progress during the exercise.

Argyll and Bute Council will assume that the radioactive fallout would affect an area downwind of the accident in an arc 15 degrees either side of the direction of the wind. (It is likely that the scenario for the exercise will dictate which way the wind will blow). The

public are not expected to participate in Exercise Short Sermon. However the civil authorities are expected to decide on paper that the following should happen:

Preplanned countermeasures Zone This is the area within 2 kms downwind of the accident. Garelochhead, Shandon and parts of the Rosneath peninsula are within 2 kms of Faslane. Garelochhead Primary School and Garelochhead Outdoor Education Centre are described as *vulnerable communities* as they could be inside this zone. In the exercise it will probably be decided that everyone in this zone would be advised to take shelter and issued with Potassium Iodate Tablets (PITs - see below). It may be decided that everyone in this zone would have to be evacuated.

Extendibility Zone This is the area within 10 kms downwind of the accident. Helensburgh (population 16,000), Rhu, Clynder, Cove and Kilcreggan are all within 10 kms of Faslane. In the exercise it may be decided that some or all of the people in this zone would also be advised to take shelter and be issued with PITs.

Wider area Restrictions on food grown on contaminated land would "extend far beyond the area over which other safety measures are required" and could apply over a long period of time. This would result in widespread disruption of farming.

In the type of accident simulated during Exercise Short Sermon contamination of drinking and sea water could be an additional problem. Public and private water supplies could be contaminated over a large area. The catchment areas for water supplies for the Rosneath peninsula, Helensburgh, Dumbarton, Greenock and Dunoon are all close to Faslane. The catchment area for Glasgow's main water supply is 20 kms from Faslane. It is likely that radiation from Faslane would be detected in water supplies downwind of a nuclear accident.

An accident on a nuclear submarine would also pollute the sea with radioactive fall-out. This would be dispersed over a wide area and drift with tide and currents. There would be a long term build up of radioactivity in sediments and mudflats.

CLYDEPUBSAFE lists Glasgow Royal and Glasgow Western as two hospitals which could be expected to receive irradiated casualties. Vale of Leven and Inverclyde hospitals are also mentioned although it is noted that if casualties are sent there radiation monitoring services should be arranged. Ambulance and hospital workers could be exposed to radiation in dealing with casualties from a nuclear accident.

Distribution of Potassium Iodate Tablets (PITs)

This is a major issue which has still not been properly addressed. One of the worst results of the Chernobyl disaster is that large numbers of children in Belarus and the Ukraine have developed thyroid cancer. These could have been prevented if the children had been issued with Potassium Iodate Tablets (PITs) within 1 or 2 hours of the accident. In France a decision has recently been taken to predistribute PITs to those living within 5 kms of nuclear sites. Some predistribution has also taken place around Devonport dockyard. Plans for distributing PITs in the event of a nuclear submarine accident in Scotland are inadequate. In Scotland it is still assumed that local health boards would be able to arrange for mass distribution of these tablets in the immediate aftermath of an accident. However when this was actually tried during one experiment in England, the exercise was soon abandoned. It was discovered that the whole process took far longer than planned because each household had to be told verbally what to do with the tablets.

Where could happen an accident happen ?

The exercise simulates an accident at the Faslane base, however this is by no means the only place where there could be a nuclear disaster. Submarines spend a high proportion of their time at sea in the waters around the Scotland. Existing proposals for dealing with even a relatively minor nuclear accident at sea are inadequate. CLYDEPUBSAFE should be concerned with responding to an accident anywhere in the Clyde estuary, however detailed arrangements are only specified for Faslane and for five other sites where submarines are occasionally moored.

Submarines travel on a daily basis within 2 kms of Helensburgh, Greenock, Gourock, Dunoon, Kilcreggan and Rhu. CLYDEPUBSAFE says that a list should be maintained of all farms within 10 kms of the Firth of Clyde from the Cumbræes to the Tail of the Bank. But the safety scheme does not give other detailed plans for protecting the public in these coastal towns. It does not identify schools at risk, give details of where PITs are held, or include any specific proposals of how these communities should be protected. Similar concerns apply to Arran and other coastal communities in the Clyde estuary.

There are limited prearranged plans for responding to an accident at berths where submarines are sometimes moored, called "Z berths". These could be the first port of call for a damaged submarine limping back home. In the Clyde there are Z-berths at Campbeltown, Rothesay, Coulport, Loch Goil and Loch Striven. CLYDEPUBSAFE shows the location of the moorings at Campbeltown and Rothesay:

Campbeltown Submarines are occasionally moored within 2 kms of Campbeltown (population 8,000). If there was an accident on the same scale as the one in Exercise Short Sermon, then thousands of people might have to be issued with PITs or evacuated according to CLYDEPUBSAFE. This lists as *vulnerable communities* Dalintober Primary School, Castlehill Primary School, St Kieran's Primary School, Campbeltown Grammar School, Campbeltown Hospital, Castle Acres Sheltered Housing and Woodside Hospital.

Rothesay There are two moorings for submarines which are in Rothesay Bay, less than 2 kms from the town. CLYDEPUBSAFE says that *pre-planned countermeasures* should be implemented, these including using the Craigmore Tea Room as a Forward Control Point and the Ardbeg Bowling Club as a Rendezvous Point. St Andrews Primary School and Ferfad Sheltered Housing are listed as *vulnerable communities* in the Safety Scheme. The ferries to Rothesay travel within 850 m of the moorings.

The risk of an accident at sea is not restricted to the Clyde. Submarines are frequently in transit or carrying out exercises all around the Scottish coast, particularly in the North Channel, the Sound of Jura and the Inner Sound near Skye. Plans for how to respond to an accident elsewhere in Scottish waters are inadequate. There are limited plans for responding to an accident at nuclear submarine Z berths which are situated at Dalgety Bay, Firth of Forth, Portree, Raasay, Loch Ewe, Dales Voe and Lerwick.

Does Exercise Short Sermon simulate the worst that could happen ?

Naval training manuals which were classified are now in the public domain. They make it clear that the type of accident being simulated in Exercise Short Sermon is not the worst case. The worst case accident would actually affect a large part of Scotland. The manuals

from Greenwich College show the radiation doses people could receive. Applying the Site Specific Intervention Levels in the CLYDEPUBSAFE to these radiation doses shows that:

Evacuation - everyone within 30 kms downwind of the accident should be evacuated from their homes. For an accident at Faslane this could mean evacuating Alexandria, Dumbarton, Clydebank, Greenock or Dunoon.

Shelter & PITs - everyone within 120 kms downwind should be told to take shelter and issued with PITs. This could apply to a very large part of Scotland. Not only the people of Glasgow but even those living in Edinburgh or Dundee could be seriously affected.

There are no publicly available plans which detail how the emergency services would respond to an accident of this magnitude. Exercise Short Sermon is likely to illustrate the severe difficulties that there would be in trying to respond to a relatively small nuclear accident. In the worst case the emergency services would be totally overwhelmed. For example, the distribution of PITs around Garelochhead within 2 hours of an accident would be very difficult to achieve. There are no arrangements in place for even attempting to distribute them across a large part of Scotland in this timescale.

Taking account of the fact that an accident could happen not just at Faslane, but anywhere frequented by nuclear submarines, it is clear that the whole of Scotland is at risk. The true scale of a nuclear disaster is illustrated by the fact that on 3rd May 1986 a significant amount of radioactive fall-out was detected in raindrops in Govan, over 2,300 kms from the Chernobyl reactor which was on fire at the time.

In the previously classified Navy manuals the worst case scenario is a reactor containment failure accident. CLYDEPUBSAFE indicates that the probability of an accident like this is more remote than 1 in 200,000 years of reactor operations - but this does not stand up to close scrutiny. The risk of an accident on a nuclear powered submarine is much higher than for a shore based reactor.

One indicator of the real risk of a major accident is the fact that today 8 nuclear reactors are lying on the sea bed as a result of past accidents. In one case the reactor on Russian submarine, K-314, exploded at Chazmha Bay in the Pacific in 1986. An eye witness described what was left of the vessel as "like a crushed beast".

Submarines can and do collide with other vessels. Any fire in the confined space of a submarine is a major hazard. All submarines carry torpedoes and both the warhead and the propellant of each torpedo is explosive. Trident submarines also carry up to 800 tonnes of high explosive in the form of rocket fuel plus a large number of nuclear weapons. Submarines are lifted out of the water in the Faslane shiplift which was dogged with structural problems and still does not have through-life safety clearance. Fundamentally these are warships which are likely to be deployed in dangerous situations. At least two nuclear powered submarines were engaged in the Falklands war. During the Cold War British and American submarines would deliberately manoeuvre very close to Soviet vessels - resulting in a number of serious collisions. This practice may still continue today.

What you can do

Ask what plans exist for protecting your community from the effects of a nuclear submarine accident at Faslane, or elsewhere, in particular what arrangement have been made for distributing Potassium Iodate Tablets.

Help to publicise the fact that Exercise Short Sermon is taking place.

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