

**SOTONSAFE**

**A BRIEF REVIEW OF THE**

**OFF-SITE EMERGENCY PLANNING MEASURES**

**RELATING TO THE**

**BERTHING ROYAL NAVY NUCLEAR POWERED**

**SUBMARINES AT SOUTHAMPTON**

**TEXT OF PRESENTATION**  
**TO**  
**SOUTHAMPTON CITY COUNCIL**  
**OF**  
**4 NOVEMBER 2009**

**CLIENT: SOLENT COALITION AGAINST NUCLEAR SHIPS**

<b>1<sup>st</sup> ISSUE</b>	<b>REVISION N<sup>o</sup></b>	<b>CURRENT ISSUE DATE</b>
2 NOVEMBER 2008	SOTONSAFE 4 NOVEMBER PRESENTATION-R6 AMBULANCE TRUST COMMENT ADDED 04-11-09	<b>4 NOVEMBER 2009</b>

I am John Large.

I am instructed by the Solent Coalition Against Nuclear Ships or SCANS to present to you my review of the SotonSafe off-site emergency plan.

I am a Chartered, Consulting Engineer.

For 20 or so years, I was a tenured, full time academic a Brunel University during which time I undertook research for the United Kingdom Atomic Energy Authority – amongst other things, I completed research into nuclear fuel systems, including the performance of dispersion fuels of uranium-aluminides now in use in naval propulsion reactors.

In my professional consulting career I have been directly involved in a number of projects that relate to the presentation of my review here today.

On behalf of the Fire Brigades Union, in the 1990s I negotiated with the Home Office the *National Radiation Dose Limitation System* the basis of which remains in service and serves firefighters today; I acted as the retained Consultant to the City of Plymouth advising on its concerns about the nuclear dockyard at Devonport, and for the Medway Towns Council I negotiated with the Ministry of Defence with regard to the past radiation dose exposure of nuclear submarine refit workers at the Royal Dockyard at Chatham.

On matters submarine: I acted on the then Soviet Union Technical Working Party evaluating the potential impact of the sunken nuclear powered submarine K-278 Komsomolets that foundered in the Barents sea in 1989; I advised the Government of Gibraltar throughout the year-long repairs to HMS Tireless when she was stranded in the port in 2000 with a very serious nuclear plant primary circuit defect; and I selected and headed up the team assessing the nuclear and radiation hazards for and during the world-first successful salvage of a nuclear powered and armed submarine K-141 Kursk, also lost in the Barents Sea in 2000.

I have laboured over my qualification and experience in both matters nuclear and, particularly, nuclear submarines so that, first, you will recognise that there are sources of authoritative knowledge outside the vested self-interests of the UK Ministry of Defence and, secondly, so that you will not disregard or lightly dismiss my Review of the SotonSafe emergency plan.

Now to that Review.

In preparation for my review I sent out about 20 requests for further information from the parties involved in the SotonSafe emergency plan – I was particularly interested in determining how employees of the various parties involved had been nominated and agreed to work in a radiological environment and, if so, whether these individuals had been trained and properly resourced.

It is this one aspect of Sotonsafe that I wish to concentrate on in the limited time made available to me today.

I received just three responses to my requests in time for this presentation. Yes, just only three but nevertheless sufficient for the points that I wish to make now.

One response was from the Hampshire Fire and Rescue Service. It provided clear information and confirmation that its firefighters managed their individual exposures to radiation in conformity with a National Scheme of Dose Limitation – in short, individual firefighters could receive up to 20mSv per incident, no female firefighters of reproductive age could attend and, of course, all firefighters are trained for working in a radiological environment and equipped with dosimeters with which to monitor and manage their individual dose receipt.

In effect, firefighters comply with *Regulation 14* of the *Radiation (Emergency Preparedness & Public Information) Regulations* or REPPIR – this is because individually they are nominated by the Brigade to participate in nuclear emergencies, they have individually agreed to do so, and they are suitably equipped and trained to manage and mitigate their individual dose receipt.

But what of the other two arms of the emergency services – police and ambulance personnel?

I have yet to receive a reply from either of these bodies but they too, like the firefighters and any other employee being directed into the SotonSafe countermeasure zone, are also subject to *Regulation 14* this being, essentially, that any individual employee must agree prior to his or her involvement in duties in the emergency plan that might subject him or her to radiation exposure and, once agreement has been reached, that individual has to be adequately trained and properly equipped.

Well I know that, generally, the Ambulance Trusts around the UK have adopted a zero tolerance policy to radiation exposure so the crews are not specifically trained or equipped to undertake recovery operations in a radiological environment. In other words, unless the South Central Ambulance Service Trust employees are individually signed up to Regulation 14, they cannot be instructed or volunteer to work in a CMZ where any increment of radiation dose will be received as a result of them undertaking their SotonSafe duties.

**Comment [JHL1]:** See South Central Ambulance Trust FoI response received on 4 November but just too late to incorporate into this presentation - see [large-solent-coalition-against-nuclear-ships-nov2009.pdf](#)

I assume that individual police officers are in much the same situation.

I put very much the same question about individual employees agreeing to be nominated under Regulation 14 to Southampton City Council's Emergency Planning Officer. In his response he states and I quote

*“ . . . the Council has concluded it will seek to avoid any exposure of its staff to such (a radiation) risk . . . Albeit the Council may be called upon to support the emergency services in such emergencies, this support function would be discharged in a manner whereby Council staff were beyond the declared zones of critical risk. . . ”*

Now this might seem to be one of those cleverly compiled evasive answers but disentangled it means that City Council employees are NOT TO and will NOT participate in any activity within the CMZ that would result in them, individually, receiving any increment of additional radiation dose.

Now you can see where I am going with this.

To operate Sotonsafe with personnel who have not signed up to Regulation 14, it has to be certain, absolutely guaranteed, that the increase of radiation dose rates within any part the CMZ are insignificant, else only Regulation 14 participants can be involved.

To the extent that their dose limitation system permits their attendance firefighters will remain in attendance but others, most probably the ambulance trust personnel, more than likely police officers, and most certainly City Council employees will all have to withdraw from the CMZ.

Some of you here today know that no emergency action can rely upon voluntary actions alone, for some might stay and others might go – Regulation 14 means that employees cannot be forced to work in a radiation environment - resourcing an emergency plan like SotonSafe has to be structured and most of all reliable in all **Reasonably Foreseeable** circumstances.

REASONABLY FORESEEABLE . . . . now there's a turn of words which brings me to the third response to my Freedom of Information enquiry, that received from the Ministry of Defence.

Now the MoD claims that it can reliably predict all Reasonably Foreseeable internal and external events that might befall a nuclear submarine in transit to and from and whilst moored at the Z-Berth almost in Southampton City centre. It claims that it can model and project the dispersion and deposition of any reasonably foreseeable radioactive release, and it admits to have undertaken modelling of this release to determine the reasonably foreseeable projected dose exposures to individuals, both public and those Regulation 14 employees engaged in the CMZ.

All very well BUT the fundamental shortcoming of the MoD's contribution to SotonSafe, and upon which SotonSafe critically relies, is that MoD claims a lot but demonstrates very little. This is because it will not release into the public domain for proper open and independent scrutiny even the most essential of detail for those other parties with employees in the CMZ noting that, and again I quote . .

*“ . . dose contour graphs contain classified information. . “*

Now here's my point.

In the absence of the projected radiation dose exposures it is entirely unreasonable to expect any individual to sign up for Regulation 14 – no signed up employees then no guarantee of ambulance personnel, police and other emergency staff – just a few watches of brave firefighters eking out their individual dose exposures and whatever MoD personnel can be corralled into service.

Moreover, the MoD is dismissive of the need of the other participating parties including the City Council, the other local authorities, the ambulance trust, police, etc to comply with *Regulation 14* with the somewhat disingenuous remark that, and I quote

*“ . . It is the responsibility of each employer to identify the potential emergency exposures of their employees. “*

Which of course is a nonsense because these other parties are entirely reliant upon the MoD's projected dose contours to, themselves, forecast the *Regulation 14* exposures.

**Let me sum up:**

SotonSafe is fundamentally flawed because of

- the failure of the MoD to provide adequate and meaningful information and data about the submarine incident severity, type and the timescales projected for its development.
- Critically, the MoD will not publish its own projections of radiation dose exposures to employees and the public in the CMZ – it is shameful that the MoD chooses to withhold this essential health and safety data.
- The SotonSafe plan should NOT and CANNOT rely upon the involvement of the Nuclear Installations Inspectorate as a guarantee that all is well with the MoD's most generalised assurances. In this respect because of military secrecy and mutual defence pacts with the United States that has strong interests in the submarine nuclear plants and, particularly the fuel system, it may be that the NII is itself not sufficiently informed.

- And, I haven't covered the way in which a new generation of naval reactor, the PWR2 with its greater fuel mass and very much higher fuel burn-up, and hence radioactivity, has been sneaked into the MoD's HIRE assessment. On the basis that the containment surety of the PWR1 system could not be that much improved (ie it was and remains about as good as it could be), the introduction of the new PWR2 reactor, with its increased fuel core mass and greater irradiated fission product inventory, suggests that the CMZ should be increased rather than reduced in area.

And so on and so forth, for the many other reasons that I have set out in my Review available to you here today, I judge the SotonSafe off-site emergency plan to be both inadequate and unreliable.

SotonSafe is an emergency plan that is in great need of revision ,

It needs to be revised so that all of the contributing facts and information are openly transparent and, most of all, its needs to be revised so that the areas covered by the CMZ provide the best possible mitigation for members of public, that is in my judgment the CMZ needs to be substantially expanded rather than, as is the proposal here, reduced from an already insufficient area to an even smaller area of coverage.

Finally, I say to you that SotonSafe is about the protection of the public so, I put to you, that the decision whether or not to adopt this new SotonSafe emergency plan with its substantially reduced CMZ should be referred to the public's Elected Members at Cabinet level and not, as seems to be the case so far, determined by unelected Officers alone.

Thank you.

**JOHN H LARGE**  
LARGE & ASSOCIATES  
Consulting Engineers, London