



**Navy Command**

**Naval Service FOI Coordination Cell  
Navy Command Headquarters  
MP 1-4, Leach Building  
Whale Island  
Portsmouth  
PO2 8BY**

**Our Reference: FLEET/585/1**

**Telephone: 02392 625081  
Fax: 02392 625279  
Email: [fleet-dcsfoicell-f@mod.uk](mailto:fleet-dcsfoicell-f@mod.uk)**

30 October 2009

Mr J Large  
Large and Associates  
[largeassociates@o2.co.uk](mailto:largeassociates@o2.co.uk)

Dear Mr Large,

Thank you for your letters of 22, 24, 26 and 29 October 2009 in which you raise various points concerning the matter of the submarine operational berths at Southampton. The majority of the questions you raise are addressed below. However, one of the questions of 24 October requesting the MOD internal Assessment of the NAR response plan together with your requests for MOD communications concerning the Foxwater 09 Post-Exercise Observations and Actions are considered to be requests for specific documents which, therefore, will be handled as a request for information under the provisions of the Freedom of Information Act 2000.

We will reply to you separately on these requests for information. In general, a response is to be given within 20 working days of your application i.e. 23 and 26 November 2009 respectively. However, if your request is complex it may take some time to process in which case we will advise you further.

Turning to the remaining questions in your letters, you seek confirmation of the information Southampton City Council (SCC) have supplied to SCANS on the revision of the REPIR Regulation 9(1) defining the area of off-site emergency planning. Our letter of 16 October 2009 attached information that had already been supplied to the SCC. SCANS have a copy of all the information that MOD has supplied to SCC, however, they should contact SCC direct to confirm this.

Referring to the Report of Assessment (ROA) of the HIRE, the term "catastrophic failure" should be taken as a complete failure of the containment system, which could include a breach of the pressure hull. However, as described in Section 5 of the Report, this has been shown to be not reasonably foreseeable. The Reference Accident, which is an accident sequence that covers all three accident categories, assumes that nominal leakage past containment may occur to the atmosphere, i.e. above the waterline. There are no reasonably foreseeable routes that will result in a release into the water surrounding the submarine. The fission products can be released as aerosols, noble gases and gaseous iodine.

**Comment [b1]:** I think we have misinterpreted his question – he is asking whether we have supplied SCANS with all the information that we have provided to SCC, not what info have SCC provided to SCANS. The answer is that SCANS have all the info, however, they should approach SCC to confirm.

The HIRE assessment is based on end of core life and considers all submarine classes in all operating states of the plant when in port, port approaches and any necessary transition between operating states. The HIRE was conducted in accordance with REPIIR in order to determine if a radiation emergency is reasonably foreseeable as described in Section 5 of the ROA. Consideration of malicious action as a result of saboteur or terrorist attack lie outside the scope of submarine operations and as such are not considered in the plant HIRE, however, access control, security and prevention of malicious intent are included in the specific assessment of each berth. It is MOD policy not to publish precise security arrangements.

You sought clarification of two parts of the HIRE assessment – the final paragraph of Section 3.2 and paragraph 2 of Section 5. It is considered that you are referring to Section 3.1 (page 6), which is explaining that all information as required by REPIIR has been provided to the appropriate authorities, which includes a scenario of total failure of containment. However, total failure of the containment system has been demonstrated to be not reasonably foreseeable in the HIRE. Consequently a *nom/nom* argument was presented as part of the Reference Accident sequence. This was subsequently amended to a *min/nom* argument by the HSE, based on their assessment that minor containment impairment may occur with a fault condition.

On the matter of radiation dosages, dose or dose rate triggers are not employed as a trigger for the implementation of countermeasures – rather countermeasures are implemented as a precaution. The area affected as determined by the HSE is the area where members of the public are likely to be exposed to ionising radiation in excess of 5mSv and, for this purpose, any health protection measures taken during the 24 hours immediately following the event are disregarded (as defined in REPIIR Regulation 2(1) and Schedule 1). The MOD HIRE calculates doses received over a year, disregarding all health protection measures.

The MOD countermeasure advice is based on the Emergency Reference Levels (ERL) as endorsed by the Health Protection Agency (formerly NRPB). Members of the public in the downwind sector between 400-1200m are advised to shelter and take PITS. The lower ERL for shelter is 3mSv effective dose and for PITS is 30mSv thyroid dose and it is not reasonably foreseeable that these dose levels will be exceeded beyond this distance. Also note that it is not reasonably foreseeable that the lower ERL for evacuation will be exceeded in the downwind sector beyond 400m from the submarine.

The MOD has established emergency exposure dose levels for its employees, in accordance with Regulation 14(1) and these have been approved by the HSE in accordance with Regulation 14(3). It is the responsibility of each employer to identify the potential emergency exposures of their employees.

Information on when and how the radiological environment is to be monitored is included in the SOTONSAFE plan which is available from SCC.

The Naval Accident Response exercise programme is conducted to meet the requirements of REPIIR. As such, each operational berth is tested. There is no test of a generic submarine at a hypothetical berth.

You sought information about REPIIR Schedule 9. Schedule 9 defines the minimum requirement for prior information that should be distributed to the local population, i.e. those people who live in the area covered by the emergency plan. As the emergency plan is owned by SCC, it is for them to provide this information. Similarly, Schedule 10 of

REPPIR, which relates to the information that is to be provided in the event of a radiation emergency, is also the responsibility of SCC to whom you should address this question.

Finally, in respect of identification of the methods of projecting radioactive, dispersion and deposition forecasts and consequently, the radiation dose uptake, the HIRE was produced by POYRY and used COSYMA. Subsequent analysis conducted by MOD was done using CONDOR, a bespoke computer model developed in conjunction with SERCO/RR and the NRPB (now HPA). There are no methods of assessing/forecasting radiation dispersion into the aquatic/marine environment as there are no reasonably foreseeable routes that will result in a release into the water surrounding the submarine. Dose contour graphs contain classified information and, as such are not routinely released.

Finally, you requested a copy of the MOD Local Authority & Emergency Services Information (LAESI). This publication is available on the MOD Website at the following link: <http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/HealthandSafetyPublications/NSEPublications/LocalAuthorityEmergencyServicesInformation.htm>. The URL for MOD Directorate of Claims may be found at the following link: <http://www.mod.uk/DefenceInternet/AboutDefence/WhatWeDo/HealthandSafety>. The Nuclear Security and Emergency Planning area is accessible from this site.

Yours sincerely,

*Anita McDonald*