

# Memorandum

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To: **Graham Wyeth** Emergency Planning & Business Continuity Manager M3185-A20

From: **John H Large** 19 November 2009

Cc: David Hoadley – SCANS  
Liz Clachan – Naval Service FoI Coordination Cell  
Sultan Khan - National Oceanography Centre  
M Hancock - Member for Plymouth South  
Rt Hon J Denham - Member for Southampton Itchen  
A Whitehead – Member for Southampton Test

Subject: **SOTONSAFE**

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Large & Associates has been further instructed by SCANS<sup>1</sup> to provide a Briefing Note on the potential radiological environment in the local vicinity of *Berth 38/39* at Southampton in the aftermath of a loss of coolant accident (LOCA) based incident to a submarine nuclear propulsion plant.

Adopting the notation of V4 SotonSafe (S.V4): The nominated incident involving the nuclear propulsion plant is to result in a Category 3 atmospheric release occurring within 3 to 4 minutes of the triggering event, with the bypass release path through a failed reactor compartment services penetration, then via a hull-casing deck hatch opened to facilitate immediate evacuation of the crew. The L&A assessment is to include and take account of the weather and atmospheric stability conditions prevalent during the week, as example, of the receipt of the SCANS instruction (8 to 14 November 2009); the effectiveness of the pre-prepared countermeasures described in S.V4; and the assessment is to consider a ground area out to approximately 1000m radial distance from the berth, that is including within the assessment the National Oceanography Centre (NOC) located in the Eastern Dock Area.

For my assessment of the potential radiological consequences of a Category 3 incident I shall be, amongst other things, considering individuals evacuating from the Eastern Dock area (AEZ). It would most helpful therefore for you to provide the following further information and/or clarification of the S.V4 countermeasure arrangements:

- 1) My understanding of the Automatic Evacuation Zone (AEZ) is to extend beyond the Automatic Counter Measure Zone (ACMZ) of 500m radius to include the whole of the Eastern Docks within which the National Oceanography Centre is located. Accordingly, all persons within the AEZ (including approximately 1,200 individuals at the NOC) are to be evacuated immediately from the AEZ to residential shelter or dispersal beyond 2k.

Would you please provide further information and/or clarification on the following:

- i) As a matter of detail, am I to assume that the *dispersal distance* is to be amended from 2km to 1.5km radius in the awaited revised version of SotonSafe ?
- ii) On a point of information, should not all of the pre-prepared Media Statements for Category 1, 2 and 3 incidents include the phrase “*We have evacuated non-essential persons from a zone 500 metres around the vessel*” and, moreover, should not this be amended to include reference to NOC personnel ?
- iii) Does Item 1, page A7-7 of S.V4 require that those within the downwind area to ‘*self-evacuate*’ (see Section 1.3, para 2 page 1-2 and item c) page 7-2 S.V4) ‘*immediately*’ (as for those in the 500m ACMZ of Section 1.6 page 1-10 S.V4) via Gate 4 also apply to NOC and other personnel located in the AEZ (ie the Eastern Dock area) – in other words, are NOC personnel expected to immediately leave the shelter of the NOC building complex, assemble in the open and then make their way to Gate 4 ?
- iv) As a matter of distinction, other than being included in the AEZ is NOC included or excluded from the automatic countermeasures of the ACMZ – for example, I note that although NOC evacuees will be issued with pre-allocated Potassium Iodate tablets (PITS) (see page A7-7 of S.V4), it is not stated in S.V4 that individually they will be instructed to immediately take the prescribed dosage of PITS (like the 500m ACMZ evacuees) – should not the position of and countermeasures applying to the NOC evacuees be clarified ?
- v) Since NOC will be pre-allocated with a sufficient number of PITS does not the S.V4 table of Pre-Allocation Sites (page 7-5) need to be amended to include for NOC ?
- vi) Do you have available an estimate of the total number of members of public that, on a typical working day, will be within the AEZ-ACMZ zone and thus who will require immediate evacuation (or are expected to self-evacuate) – I note that Table 1 of the HIRE report (Issue 1 November 2007) seems not to take account of NOC and other persons employed within the Eastern Docks ?
- vii) At the public meeting of 4 November 2009 and in response to a question from SCANS asking for further information about the means of evacuation from the AEZ, you stated that no specific transport arrangements (ie buses) would be laid on and that individuals are expected to make their own arrangements for self-evacuation from the Eastern Dock area via Gate 4 – is this a correct interpretation of your statement and, indeed, of the evacuation arrangements specified by S.V4 ?
- viii) There is very little in S.V4 detailing how evacuees are to be processed and managed at Gate 4 and, noting that with the NOC personnel upwards of at least 1,200 individuals will be evacuating through Gate 4, will not delays be expected to arise due to:
  - a) It is not clear how evacuating NOC personnel (and others from VTS) who have been issued with PITS immediately prior to their embarkation towards Gate 4, will be distinguished from others evacuees from the ACMZ who are to be issued with and take PITS at Gate 4 - please indicate how S.V4 that provides for this ?
  - b) S.V4 makes gives no regard to evacuees attempting to self-evacuate in their own private motor vehicles so is it correct to assume that i) possibly contaminated vehicles will be free to leave the Eastern Dock area with the potential to spread

contamination to unknown destinations beyond or ii) will private vehicles be impounded in Eastern Dock area for examination and possible decontamination at some future time ?

- c) Throughout S.V4 emergency services vehicles are directed to Gate 4 for access to the Eastern Dock area so, I assume, these vehicles will be given priority over any vehicles and pedestrian evacuees leaving via Gate 4 – will this not result in NOC and other AEZ-ACMZ evacuees being held in the open for indefinite periods of time ?
- 2) Noting that if an incident occurred during working hours then upwards of 1,200 NOC personnel would be required to exit the Eastern Dock area via Gate 4 (in addition to other non-essential personnel also within the ACMZ and AEZ), this would involve pedestrian evacuees having to make their own way in the open from NOC to Gate 4 and then, possibly, being held and delayed at Gate 4 for processing, again in the open without any shielding or respiratory protection:
- i) Have the potential time delay segments identified in vii) a), b) and c) foregoing been assessed, particularly in account of the presence of dose uptake by external (shine) and respiratory uptake paths whilst evacuees are in the open; and
  - ii) please direct me to those specific measures and/or arrangements of the S.V4 off-site emergency plan that enable those directing and managing the AEZ and ACMZ immediate evacuation countermeasure to minimise the radiation dose exposure of the evacuees ?

In your response, please refer to my order of itemisation above.

Finally, although I understand that Southampton City Council (SCC) may consider that Ministry of Defence (MoD) personnel will be responsible for and are to manage the countermeasures in the AEZ and ACMZ, my understanding is that *Regulation 9* of the *Radiation (Emergency Preparedness and Public Information) Regulations 2001* (REPPIR) places a clear duty on SCC to prepare and maintain the off-site emergency plan. It follows, that being responsible for S.V4 overall, SCC should have the information that I seek readily to hand. That said, you may wish to share this request for further information with the MoD but I ask that you (SCC) coordinate and represent any joint response to me.

I have copied this request to the Naval Service FoI Cell Coordinator; at the instruction of SCANS to the two local constituency Members of Parliament, and the Member for Portsmouth South who recently expressed an interest in SotonSafe and, because I have referred extensively to the arrangements to safeguard NOC personnel, to Sultan Khan who I understand to be the Safety Advisor at NOC.