

6 April 2001

Rev Norman Shanks
Leader of The Iona Community
Pearce Institute
840 Govan Road
Glasgow

Dear Rev Norman

Nuclear Report concerning HM Naval Base Clyde Faslane(updated Nov 2000)

My report contains very serious recommendations and this is the response I have to it.

The Scottish Parliaments Transport & Environmental Select Committee, cant discuss it, because of the reserved nature of the issues raised in it! Mr Andy Kerr Convener, 31 January 2001, all other members of the Committee must agree with him!

Mr Danny Carrigan AEEU, has not acknowledged my report!

Mr Jack Dromey T&G, after a exhaustive inquiry,(which didnt include meeting me) states, there was no foundations to my report, also I may add, it had taken four letters to Bill Morris, before he would act!

The Defence Select, Trade&Industry Select, Labour Backbenchers Defence(LBD) Committees, wont discuss my report!

My local MP Rachel Squire, is Chairperson of LBD Committee, states there is no matters of concerns in my report!

The MOD have had my report since Nov 2000, no reply!

West Dunbartonshire Council, awaiting response since 31 December 2000..

Argyll & Bute Council, awaiting response since 9 February 2001.

Glasgow City Council, did not feel that this was a matter in which, they felt, they could become involved! Quote, Carol Dickson(CD) Secretariat, of Nuclear Free Local Authorities, (NFLA) 28 September 2000.

Since then NFLA at a meeting on 25 August 2000, its 2000 members appointed a independent consulant, to give expert technical opinion on my report, I was informed by CD that he could make no comment on my report, and that the NFLA would now seek the advice of Dr John Large a Nuclear Expert, Ive asked for further information in letter to her on 1 March 2001, no reply yet!

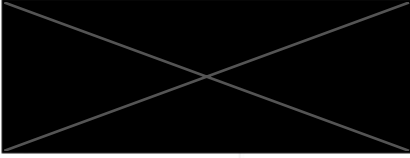
I wrote to Charles Gordon, Glasgow council Leader, asking for his council to discuss my report on 14 February 2001, still awaiting a reply!

Ive also tried CND, Friends of the Earth, Greenpeace, to no avail! plus D Canavan MSP, Mr Harper Green MSP, also to no avail!

My oldest daughter told me that what I was doing was Living History, and that I should get my

correspondence collated, I handed in my report to Edinburgh, Strathclyde, Glasgow Universitys, and I am still waiting for a reply!

What is the way ahead for me!



Nuclear Report

on

The Operational Control of the Ministry of Defence (MoD) Navy and the involvement of private enterprise in the maintenance and repair of nuclear submarines at H.M. Naval Base Clyde Faslane.

Prepared May 1999
Updated November 2000

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Remember
You can't see..
You can't hear..
You can't smell..
RADIATION.

THAT WHY WE NEED RADIATION INSTRUMENTS TO DETECT IT.

CONTENTS PAGE

	<u>Pages</u>
1. Introduction	3
2. My role as safety controller	4
3. Operational Control at Faslane	5-6
4. Instrumentation	7-11
4.1 Secondary Monitoring	
5. Radiation Tunnel Surveys	12
6. Radiation Exposure	13-14
7. Emergency Monitoring	15-16
8. Incident at M11 Workshop	17
9. Health and Safety Executive	18
10. Vectra Technologies	19
11. Reactions to report	20
12. Conclusion	21

1.Introduction

The purpose of this report is to underline the important issues that surround radiological safety at RN Naval Base Clyde, Faslane. It contains a number of concerns that has arisen from my employment with Vectra Technologies at Faslane, between 1994 and 1996 working as as radiation monitor and controller, drawing from my twenty-five years experience within the Health Physics department at Rosyth Royal Dockyard. Those issues discussed include instrumentation, tunnel surveys, secondary monitoring, radiation exposure and emergency monitoring.

It has been revised to include comments from Rear Admiral J.R.Trewby, Rear Admiral B.B. Peronne, Doctor D. Watt, PHD, DSc, FLnstP FSRP, Miss J. Bacon, Director General HSE, and Mr. David Eves, Deputy Director General HSE. It includes questions put forward to the MoD by Mike Hancock, MP, CBE, the Liberal Democrat Defence Spokesperson, Mr Alex Salmond MP, and The Health and Safety Executive (HSE) has also had some input into this matter and their views are included within this report, concluding with my comments and recommendations.

By writing this report, and in highlighting the major problems within the industry, I am confident that all interested parties will treat my comments seriously and act where applicable. More importantly, existing nuclear safety procedures will be immediately reviewed and the health of all individuals in the industry will be given top priority.

Jane Braney has informed me; NSBS Secretariat that the security of my report was not a security issue.

I would like to give acknowledgement to Mr Mike Hancock for his valued assistance in obtaining information for this report and to Mr Bruce Crawford JP, MSP for his professional attitude and understanding of the magnitude of my report.

2. My Role as Radiation Safety Controller

I have gained over twenty-five years experience as a radiation monitor, supervisor and a controller in the Health Physics Department at Rosyth Royal Dockyard, now called Babcock Rosyth Defence Ltd. I started with H.M.S. Dreadnought, Britain's first nuclear submarine in 1968 and was involved in the refitting and refuelling of all polaris submarines. I also worked at Faslane for 2 years during its busiest period. This was between 1990 and 1992, then I took early retirement in May '92.

On my return to H.M. Naval Base Clyde Faslane in December '94, working with Vectra Technologies, who had replaced Rosyth Defence Ltd. It was soon apparent that under private enterprise the health physics department was operating quite differently than MoD Rosyth.

Their contract was extended after their initial three years and so were the three controllers contracts except my own, and I feel this was because confusion arose between the different working arrangements, and I spoke out about certain safety matters. Later I was informed by Vectra Technologies (VT), Mr Ron Kennedy, now a director, that I was not wanted back at Faslane, by the MOD (Navy) as a Radiation Supervisor and not even as a Radiation Monitor.

I was offered work immediately at Sizewell or Dungeness Power Stations by Ron Kennedy, as a radiation monitor at a lower grade but declined. They then offered me a personal reference, which I refused. I have never been given a reason for my non-reinstatement of my contract.

My contract with Vectra Technologies at Faslane ended in early 1996, but the radiological issues that I have raised in this report still prevail. The Health Physics department is now operated by MoD Civilian supervisors and monitors, with back up from navy monitoring staff. However, the Health Physics group manager who has overall responsibility is a Royal Naval officer.

Response to the above from Rear Admiral, 26 February '98:

"While it is agreed that Faslane operates differently from Rosyth in some radiation matters, this is not surprising as the nature of the work is also different."

Comment:

My response to this statement is that there was no agreement that Faslane would operate differently from Rosyth, why should it? The health physics' principles are the same. I was referring to the difference between the operational control of the Health Physics department at Faslane compared to Rosyth Defence Ltd who previously had the contract.

3. Operational Control at Faslane

Navy leading hands were in charge of the Health Physics Section at Faslane, giving instructions to Vectra Technologies and Navy Radiation Monitors. They have no requirement to have the City & Guilds Part 1 qualification in Radiation and Safety Practice. Despite this, they are in charge of medical assistants who have this qualification. As a result they are depending on the medical assistants, and myself to ensure that the correct safety procedures are being carried out.

On one occasion, I was asked to cover work in a nuclear submarine reactor compartment (RC), which involved an engineer breaking into the primary system. This had the possibility of an external airborne contamination hazard within the RC. I explained to duty officer, Lt Chilcott that this work was normally done by a radiation monitor and not a supervisor; I would not be held responsible for other radiological problems should they arise in any other nuclear submarines in the base. My hands would be tied with the immediate job and I would not be able to give the needed advice I was employed to do. I was informed that in the case of someone being contaminated on another nuclear submarine, the navy would take on this responsibility.

Vectra Technologies had taken over the contract from Rosyth Defence Limited with manning levels greatly reduced. This led to myself, a supervisor having to carry out radiation monitors' work.

I understand that employees need to be flexible to cover other staff, but radiation safety of employees should not be sacrificed. Radiation safety is paramount.

Question from reporter of the 'Scotsman', 29 May '97: (Story not published!)

"Mr Connor states that as a radiation safety officer, he was on occasion asked to do actual radiation monitoring. Can you confirm this was the case?"

The reply to this from Lt Cdr Tom McAuslin, 2 June 1997 was:

"As a Health Physics supervisor, it was part of Mr Connor's duties to carry out radiation monitoring work on board submarines. When conducting this monitoring, his whereabouts would be known, and he could be contacted immediately, if required."

Comment by The Rear Admiral Trewby, 8 December '97:

"Should a problem arise it may be necessary for you to have waited for a relief."

Rear Admiral Trewby's statement 19 November 1997

"I can assure you that the safety of those who work within the MOD is given the highest priority, nuclear safety is no exception, indeed the standard required in radiological protection are considerably more exacting than in any other area."

Comment:

Although Lt Cdr T McAuslin stated that my whereabouts would always be known and that I could be contacted immediately if required, I would however have to be confined to the job in hand. The Rear Admiral also states that it may be necessary for you to have waited for relief.

Also the Navy had no one with experience to take over. This completely conflicts with the basic principles of Health Physics, in that if anyone is contaminated, they should not have to wait for expert advice.

It undermines the role of the radiation supervisor and sets a bad example to the young navy personnel as to the importance to their job.

With Vectra Technologies not giving strong leadership due to their lack of experience in the repair of nuclear submarines they allowed the MoD(Navy) to administer the Health Physics Department, to the confusion of everyone with no obvious person in charge.

It gives a hollow ring to the Rear Admiral's statement.

Recommendation

Radiation supervisors should not be asked to do the work of a radiation monitor, for obvious reasons, as explained above. Advice and practical assistance should always be immediately available.

4. Instrumentation

Millions of pounds have been spent on the building of nuclear submarines yet the equipment used to monitor personnel leaving the Reactor Compartment was last used at Rosyth over twenty years ago. These instruments are MK10s with BP10 Geiger Muller glass probe, used for checking personnel of contamination as they leave the reactor compartments of nuclear submarines. There is a risk that these can explode whilst monitoring the person's face. It is also not efficient as a RM5 with a BP7 probe, which they have at Faslane but do not use them on the submarines. **Why risk the safety of staff, particularly when they already have the proper instruments?**

In a book by the National Radiological Protection Board 1989, the performance of over twenty surface contamination monitors was evaluated. The MK10s were not included, presumably because they consider them to be out of date and no longer used.

By still using the MK10s Geiger Muller probe, it is more imperative that installed personal monitor I.P.M-7s are used to monitor personnel before they leave the yard. This is the procedure for all other nuclear establishments, known as secondary monitoring.

The Rear Admiral's reply to the above, 26 Feb '98:

"Instruments are fit for purpose at Faslane."

Question to Health and Safety Executive by John Connor, 18 Dec'98:

"Are MK10 instruments with BP10 glass probes were still in use at Faslane."

The Health and Safety Executive's view/legal position given by D. Eves, 12 January 1999:

"Though there are now more modern instruments on the market, the Mk 10 with Bp10 probe instruments are still regarded as adequate for measuring limited ranges and types of radiation."

The current position at Faslane given by D. Eves, 18 December 1999.

"BP10 probes/MK10 are still in limited use at Faslane. their use is approved by MoD, though they are now regarded a being of limited application and replacement is being considered."

Question by Alex Salmond, M.P. to Secretary of State for Defence 7 March 2000:

"Would the Secretary of State for Defence state his policy on replacement of MK10 with BP10 probe?"

Reply by Dr Lewis Moonie, M.P., MoD, 7 March 2000:

"A specialist section within MoD is actively seeking a suitable replacement for MK10 radiation monitors with BP10 probe for use on board on HMS submarines."

David Eves, Deputy Director General of Health and Safety Executive, 29 August 2000:

"In your letter you ask for confirmation that BP10 probes are not being used on nuclear submarines at Faslane. MK10 instruments were used on submarines until July 2000, when the base changed over to the more sensitive RM5 /BP7 instruments for this work."

Comment:

1. I know from personal experience that a RM5 with a BP7 probe is far more sensitive and superior in efficiency than a MK10 with BP10 Geiger Muller Probe.

2. The suitable replacement, the RM5 with the BP7 probe are already there. It is used in other facilities but not on nuclear submarines.

Recommendations

1. MK10s with BP10 Geiger/Muller glass probe should be replaced immediately with more modern instrumentation, like a RM5 with a BP7 probe.

This has now been implemented in July 2000, but does not take away the need for secondary monitoring.

4.1 Secondary Monitoring

At nuclear establishments, for example at Rosyth and Devonport, radiation workers are firstly monitored for contamination at the exit of the reactor compartments of nuclear submarines. They then proceed to Health Physics Buildings, remove protective clothing, wash hands and have the option to shower. After this, they pass through an Installed Personal Monitor (IPM)-7 type used for detecting external contamination to ensure they go home free of contamination. This is called secondary monitoring.

The navy's reply to this by Rear Admiral, J.A. Trewby, 8 Dec '97:

"An IPM-7 is available, but its use is not compulsory."

Question by John Connor to H.S.E, 18 December '98:

"Does H.S.E agree that secondary monitoring for contamination is not taking place at Faslane?"

The Legal Position/H.S.E. view on this: D. Eves 12 January 1999

"The Ionising Radiation Regulations (IRRs) require an adequate system for ensuring personnel safety in, and at the exit from, radiological controlled areas. There is no legal requirement for secondary monitoring, though paras 388/9 of the Dounreay Report suggests that turnstile-type monitors are now regarded as modern practice."

The current position at Faslane D. Eves 12 January 1999

"Faslane conducts 'points of exit monitoring' from controlled areas. Where these checks reveal any suspicion of contamination, personnel are directed to an IPM7-type monitor. This is not optional. Even if monitored free of contamination at point of exit, personnel can still opt for the secondary monitor."

Mike Hancock has raised three further questions (18 Jan '99):

- "1. Whether installed personal IPM-7 type monitors are in use at Faslane?"*
- "2. Are all personnel monitored by IPM-7 whenever they leave the yard?"*
- "3. What is the practice at other nuclear establishments?"*

Replies to the above by Mr Spellar, MP MoD, 17 Feb '99:

- "1. One IPM-7 type is installed."*
- "2. They have the option of using the IPM-7 type monitor."*
- "3. Contamination monitors are used as part of the overall monitoring arrangements."*

Comments:

- 1. Faslane states that personnel can still opt for secondary monitoring. However, in my years of experience at Faslane, personnel were never encouraged or advised to have secondary monitoring. It should not be the responsibility of individuals to decide whether to opt for secondary monitoring. At the end of the contract workers shifts, when returning their dosimetry at the Health Physics Building, the IPM- 7 is out of sight. Therefore there is no encouragement for them to use this facility.*
- 2. Navy submarine radiation personnel go straight home from the submarine.*
- 3. MoD states that where checks reveal any suspicion of contamination, personnel are directed to an IPM-7 type monitor. However, if we were 100% sure that personnel were being properly monitored then it would be acceptable for secondary monitoring not to be mandatory, but for the reasons listed below:*

Reasons why secondary monitoring, using IPM-7 type monitor should be mandatory:

- a) It is possible that the monitoring instrument is faulty, and the monitor is unaware of this.*
- b) Some radiation monitors are more conscientious than others when carrying out the monitoring process.*
- c) Personnel could be passed as clear from contamination, and it is not until afterwards that radiation monitor realises that the instrument was not switched on. This can be a rare occurrence but it has happened.*
- d) After personnel are monitored at the exit of the reactor compartment, they remove their protective clothing at the tunnel area. It is therefore possible that they could pick up contamination in the reactor compartment tunnel area. This is more likely when they are doing a daily survey every 24 hours as opposed to a shiftily survey of 12 hours.*

e) Whilst personnel are working on nuclear submarines, they wear protective clothing. However it is possible that liquid contamination could penetrate through to their own clothing. Their own clothing is then worn on their journey home and taken into their homes.

At other nuclear establishments, the Health Physics Buildings are part of the nuclear complex that have washing and shower facilities. At Faslane however, nuclear submarines can range from as much as 100 yards to 1 mile away from the Health Physics Building. This means that contractors/ship staff has no immediate access to washing and shower facilities.

Since no secondary monitoring takes place, there is no way of knowing whether personnel have even washed their hands. What happens to the complacent worker who forgot to wash his hands?

Dr David E Watt, University of St Andrews, 16 February 2000:

"Those monitoring themselves on a daily basis at the primary point, repeatedly found that there were negative results at the secondary monitoring point and eventually by default, the secondary monitoring point gets bypassed."

Comment:

There is no secondary monitoring point for submarine radiation workers. Before making this statement, Dr Watt should have contacted Faslane as to what system is used there. Also, it is this sort of attitude that is the cause of the problems at Sellafield.

Question by Mr Alex Salmond to Secretary of State for Defence, M.P., 7 March 2000:

"What is the Secretary of State for Defence's policy on the use of IPM-7 radiation detectors for safety checks at Faslane?"

Reply by Dr Lewis Moonie, M.P., MoD, M.P., 7 March 2000:

"At Faslane, the 2 I.P.M-7 type radiation detectors are used for secondary monitoring for personnel working in the active processing facility and nuclear repair workshop."

Question by Mr Alex Salmond to Secretary of State for Defence, M.P., 7 March 2000:

"What plans has he to introduce secondary monitoring for staff at Faslane?"

Reply by John Spellar, M.P. MoD, 7 March 2000:

"At HM Naval Base Clyde (Faslane), staff working in the active processing facility and nuclear repair workshop are already protected through routine secondary monitoring."

Miss J. Bacon, HSE 6 July 2000

"There is a secondary monitoring facility at Faslane, which depends on the willingness of individual to follow instructions."

Comment:

1. This proves my point about the need for submarine radiation workers to have secondary monitoring. By stating that staff in the active processing facility and the nuclear repair workshop are already protected, proves that radiation submarine workers are not protected and treated as second class citizens.
2. Secondary monitoring should never depend on the willingness of individuals. It should be mandatory.
3. The fact that secondary monitoring has not taken place at Faslane for over twenty years and also that less sensitive instruments were being used up until July 2000 a programme should be set in place to systematically monitor all nuclear submarine worker's homes as soon as practicable.

Lawrence Williams, Head of H & SE, Nuclear Safety Division, 3 August 2000, on BBC

television:

“If it's feasible, if its reasonably practical to bring in a secondary check, which maybe is mobile, maybe can be located close to where the submarines are; if its reasonably practical then we will be looking at it and discussing it with the ministry.”

Recommendations

1. Installed personal monitors (IPM 7-type) should be mandatory for all employees who work in radiological controlled areas.

2. In light of the above statements by Mr. Lawrence Williams and Mr. David Eves, there is a high probability of Nuclear Submarines Radiation workers going home contaminated. A programme should be set in place to systematically monitor all nuclear submarine worker's homes, to assure them and their families that they are free of radioactive contamination.

5. Radiation Tunnel Surveys

Within nuclear submarine reactor compartments there is always the possibility of contamination being found. At Faslane, work was continuous with changes of production shifts every 12 hours. There were also regular inspections by ship staff.

As a result, surveys that confirm the absence of contamination should be done at the entrance to the reactor compartment at the start of every 12-hour shift. **This is so that if contamination is found it can be traced back to what shift the problem arose.** Surveys were taken on a 24hour basis by HM Naval base Clyde, Faslane. This was a change in policy in respect of MoD Rosyth.

A week before my contract finished, I informed Lt Chilcott that it is necessary for radiation/contamination surveys to be done at the start of each 12 hour shift as work is continuous over a 24 hour period. This was always the case during my three-year contract at Faslane, with MoD Rosyth. However, the Navy has stated that "there are no requirements for surveys to be done at 12 hour intervals."

The Rear Admiral Trewby states, 26 Feb '98:

"It is inappropriate to lay down hard and fast rules for the frequency of tunnel surveys, as this depends on the nature of the work being undertaken."

Mike Hancock has asked the Secretary of State for Defence: 18 January 1999

"How frequent radiation/contamination surveys are undertaken at the entrance to reactor compartments during work on nuclear submarines at RN Base Faslane."

John Spellar, MoD 20 January 1999 replied by stating:

*"Radiation/contamination surveys of reactor compartments are carried out **daily** whilst work is being undertaken. This includes entrances and the tunnel area."*

Question by John Connor to Health and Safety Executive: 18 December 1999

"Do HSE agree that if work continues over a 24-hour period that radiation/contamination surveys should first be done once in that period?"

Current position at Faslane D. Eves 19 January 1999

"Personnel are now issued with Electronic Personal Dosimeters (EPDs), which alarm on dose rate and total dose."

Comments:

1. By having daily surveys instead of shiftly surveys at the entrance to the reactor compartment of nuclear submarines, the MoD(Navy) show a lack of vital health physics practices.

2. This is an inappropriate statement by the HSE shows a complete lack of practical experience. EPDs only measure radiation and do NOT detect contamination.

Recommendation

It should be standard policy for radiation/contamination surveys to be carried out shiftly and not daily at the reactor compartment tunnel on nuclear submarines. HSE should advise that shiftly radiation/contamination surveys should be implemented immediately.

6. Radiation Exposure

There are two categories of radiation workers:

Unclassified, only wear an electronic personal dosimeter (EPD) which is read and recorded at the end of their shift. Classified, wear an EPD, which is read and recorded at the end of their shift. They also wear thermal luminescence dosimeter (TLD), which is read and recorded at the end of each month. The highest accumulative reading between the EPD and the TLD at the end of each month is then attributed to the individual. The classified worker also has an annual medical.

During the cleaning of a nuclear submarine reactor compartment, eight young navy unclassified ratings received 950 micro Sv per shift, almost 2mSv in two days. The recommended dose per annum is 6mSv. 2mSv in two days is very high.

They were under the supervision of the duty engineer officer who had no formal qualifications in health physics; and whose main priority is to have the reactor compartment as clean as possible. The navy states that they would be advised by health physics staff on stay times and radiation hot spots, and would be working under a nuclear procedure.

I was on duty at the time and was not consulted, nor did I sign any procedure. This is contrary to what would have happened under MoD Rosyth.

If As Low As Reasonably Possible (ALARP) had been implemented, the navy ratings would only have received half the dose 1mSv by reducing the stay time by half. The dose the ratings received was recorded but no post discussions or enquiries were made. There is no point having procedures recorded if they are not going to be followed up and investigated. With radiation limits reduced now from 50mSv to 15mSv per year for classified workers (believed to be now 8mSv), surely Electronic Personal Dosimeters, (EPDs) which all radiation workers wear in the reactor compartment of nuclear submarines to measure radiation and not contamination should be set at 300mSv or even less, per shift. This is instead of the current 950mSv; the same dosage used almost 30 years ago.

Not enough care is taken to ensure that employees working in radiological controlled areas receive appropriate radiation limits, such as ALARP, as shown in the example above with the young navy officers. Not only is insufficient concern given to employees presently at Faslane, but also no consideration is shown to previous employees of Faslane, and their families. When considering the importance of the genetic effect of radiation, there is a need for compulsory follow-up procedures such as yearly medicals.

People higher up in the hierarchy, such as the Officers of the Navy, and the Health and Safety Executive should take direct action and a more prominent stance to ensure the implementation of ALARP.

Rear Admiral Trewby reply to the above, 26 Feb '98:

"Noting the particular dosage incidence that you have highlighted, it can be established that at no time were ionising radiation limits or even the more stringent MoD limits knowingly exceeded."

Comment:

I question this comment of 'more stringent MoD levels' as this level was the amount I received 30 years ago when I worked on the HMS 'Dreadnought', Britain's first nuclear submarine's refit in 1968.

Question by John Connor, put forward by Minister for Armed Forces:

"What qualification in Health Physics did Duty Engineers Officers in charge of eight young navy personnel have when they received almost 2 mSv in two days?"

Rear Admiral Trewby replied, 19 Nov '97:

"The Duty Engineer Officer holds no formal qualification, but all personnel entering reactor compartments are briefed by Health Physics trained staff. Health Physics staff would advise personnel on stay times and hot spots and they would be working under a fully authorised nuclear procedure."

Comments:

With regard to Rear Admiral's comment that Health Physics trained staff briefed personnel, it is most likely that the reactor compartment tunnel monitor at the time received a two-week training course. They are not qualified to give advice or cover radiological work in the reactor compartment, but trained only do tunnel-monitoring duties. Whilst I was on duty, I did not give any advice nor sign any procedure.

Mike Hancock on 18 January 1999, asked:

"As Low as Reasonably Possible (ALARP) is an extant legal requirement. Was it implemented when the eight young naval personnel received almost 2mSv in two days? If it was in use, how was it implemented?"

No reply was given to this question by MoD.

Miss Jenny Bacon CB. H&S 22 April 1999

- a) *"Daily dose limits "the statutory requirement for radiation doses to be kept ALARP applies irrespective of the dose limits*
- b) *Faslane currently operate to EPD settings of 500 Sv for a daily limit for work inside the reactor compartment."*

Dr David E Watt, University of St Andrews 16 February 2000:

"Although this dose is within the internationally recommended maximum annual dose limit, it is probable that the level of dose delivered should not have been necessary. Presumably some internal enquiry took place. There should be written records of such a discussion. If this has not been considered, then attention should be given to it now."

Rear Admiral B.B. Perowne 15 September 2000

"If individuals do have concerns themselves, you will be aware that daily and cumulative dose levels are kept on computer records which be readily released on request."

Rear Admiral B.B. Perowne 4th October 2000.

"The recommended annual dose limit for unclassified radiation workers is now 6mSv."

Comments.

1. The recommended dose limit for unclassified workers at Rosyth is 4mSv. At Dounray if the unclassified workers receive between 1-2 mSv they become classified workers.

- 2a. Now that Faslane now currently operates to 500 Sv for a daily limit.
- b. That Dr. D. Watt's recommendations were not implemented.
- c. The fact that ALARP was also not implemented.

The eight young navy ratings (unclassified) and their families **must now be informed**. If the MoD Navy have been lackadaisical in this case, how many have gone undetected in the past?

Recommendations

1. When Electronic Personal Dosimeters (EPDS), worn by Radiation Personnel in the Reactor compartments reach their maximum settings, inquiries and post discussion should always take place. The Health and Safety Executive should be recommending that radiation settings should be reduced to 300mSv per shift, or even less on EPDs.

2. As the eight young Navy ratings were unaware of the high level of radiation they received over the two days, it is only right and proper that they and their families are made aware as soon as possible of the high doses they received and the consequences, bearing in mind the genetic affect of radiation.

7. Emergency Monitoring

Although emergency procedures are carried out at Faslane, experienced staff is necessary to enable proper control in the event of an external emergency situation. To gain experience takes several years to accomplish yet this is not possible at Faslane because of continual change of staff. The Health Physics Department is treated no differently from any other department in the Navy.

In the event of an external emergency, the Navy states that they can call on at least four radiation monitors who have the City & Guilds Part 1 qualification. However I would question the number of these monitors called upon, as this seems inadequate in an emergency situation. Help may be called upon from Rosyth Defence Ltd but their assistance was not asked for in their last exercise nor in the last ten years. It is most important for radiation monitors to have a good knowledge of the area.

Rear Admiral Trewby, reply to the above, 26 Feb '98:

"The base is frequently exercised by external authorities who have always been satisfied with the number of monitoring personnel available for duties. In a real emergency, additional monitoring staff would automatically be despatched to Faslane from other nuclear sites. Be they MoD or civilian, these plans are articulated and published in the Clyde Public Safety Scheme (CPSS)."

Comment:

Although these plans are published by CPSS, they are not readily available to the public. I experienced great difficulty in even obtaining their telephone number.

Rosyth Defence Ltd (BRD) and RN Naval Base Clyde Faslane do an emergency monitoring exercise once per year held at Rosyth, with BRD Ltd playing a minor role?

Previously, BRD Ltd, having the most experienced Health Physics Civilian staff did their own emergency monitoring, whereas at present Faslane play the major role. Is the reason for this, due to the fact that in an emergency situation, information will be kept in the hands of the MoD Navy Personnel?

Mike Hancock raised the question to the MoD, 18 Jan '99:

"What proportion of supervisors in the Health Physics department at Faslane are qualified to City & Guilds Part 1 Radiation and Safety Practice?"

Reply from John Spellar, 20 Jan '99:

"All supervisors working with Health Physics group at HM Naval Base, Clyde are qualified to both City & Guilds part 1 & 2 in Radiation and Safety Practice."

Comment:

The above only applies to the present civilian system, controlled by MoD Navy, that began in March '97, which replaced Vectra Technologies. What is of concern is that where there is an emergency situation the MoD Navy at Faslane is in charge and they do not have these qualifications.

Recommendations

- 1. More navy monitors and supervisors should be trained to City & Guilds standards, to assist in the possible event of an external radiation/contamination hazard at HM Naval Base Clyde Faslane.**
- 2. In order for navy radiation monitors and supervisors to receive more Health Physics experience they should be given greater incentive to work longer within the Health Physics Department. This should also apply to the commander who is in overall charge and is frequently moved on.**
- 3. The Health and Safety Executive should be ensuring that more navy staff are qualified to City and Guilds level, for the protection of the general public in an external emergency situation.**

4. Most important of all a whistle blower system to be set-up for personnel within the nuclear industry to report inefficient practices.

8. M11 Incident

At the start of the Rosyth Royal Dockyard contract at Faslane in 1989, radiation hot-spots were found in the M11 workshop, by Roysth civilian radiation workers which is used by Naval engineers who work in radiation controlled areas on the nuclear submarines.

Due to inadequate radiation monitoring techniques over many years, hot spots developed over many areas of the workshop with radioactive pipe work and valves from nuclear submarines even being found in the radiation engineers own personal lockers.

The Rear Admiral Trewby's reply, 26 Feb '98:

"No incident report can be found to support this claim, but if contamination had been found, an investigation would have been carried out. I can confirm that current monitoring techniques prevent an incident of this kind you describe from happening."

Mike Hancock asked the Secretary of State for Defence, 22 Jan '99:

"Would he make a statement on the radiation hot spots discovered in the M11 workshop at RN Base Faslane in 1989."

Doug Henderson's, MP, MoD reply, 8 Feb '99:

"No radiation hot spots were discovered in the M11 workshop."

Comments:

1. This sums up the lackadaisical attitude of the MoD Navy Health Physics Department. If there is a denial then this matter should be thoroughly investigated.
2. When the Rear Admiral refers to current monitoring techniques, does this imply that they differ from previous monitoring techniques? If so, in what way have they changed?
- 3a. When you consider the M11 incident, caused by inefficient monitoring techniques and:
 - b. No shiftly surveys.
 - c. Less sensitive instruments being used.
 - d. No secondary monitoring.

Recommendation

Therefore the homes of the Faslane nuclear submarine radiation workers must be systematically monitored to assure tem and their families that they are free of radioactive contamination.

Although it is conceivable that material/physiological claims may arise the consequences will have to be faced.

9. Health and Safety Executive

I am deeply disappointed with the response and action taken from the Health and Safety Executive (HSE). Although Faslane is not subject to the permissioning regime of a nuclear site License, the HSE Site Inspectors produce a quarterly report, which seems to miss all the main radiological problems.

Statement by Rear Admiral, 8 Dec '97:

"They (HSE) are more than happy with all aspects of radiological protection at the base."

Jenny Bacon, Director General of HSE, 15 Dec '98:

"We have no reason based on our experience of operations at Faslane to dissent from Rear Admiral Trewby's comments to each of the points you have raised in your report."

In the words of D. Daniel's, HM Inspector at Faslane:

"HM Inspectors being part of the HSE have the power to take enforcement action if matters of concern are found during the course of their site inspections."

Comment:

However, in contrast to the above, the serious safety radiological issues that I have raised to the HSE have been completely ignored. I feel that the main problem, as far as Faslane is concerned is a lack of practical experience from the HSE inspectors in order for them to take any course of action.

Recommendations

The HSE should reconsider their previous response to this report and assist on implementing the recommendations I have made, as soon as practicable.

At the beginning of my correspondence to the Health and Safety I was getting an immediate response. Now it seems that my letters are going missing or ignored!!!

10. The Involvement of Vectra Technologies at HM Naval Base Faslane

Vectra Technologies (VT) replaced Rosyth Defence Ltd on November 1992 with a three-year contract with extensions to March 1997.

V.T. had no previous experience in the repair and maintenance of nuclear submarines.

Question by Mike Hancock, MP, 5 March'99:

"What role did V.T. have at RN Base Clyde Faslane?"

Reply from J Spellar, MP:

"V.T. supply specialist safety engineering and project management services. It is an approved defence contractor providing the Royal HM Naval Base Clyde with expert consultancy support in the production of nuclear safety management systems, and on management system audits."

Comment:

When V.T. were at Faslane, four senior members of V.T. were part of a Grade 'A' cleaning contract, which is labour intensive and normally done by ships staff. It was also the first time they had been in a reactor compartment of a nuclear submarine.

Question by reporter of 'The Scotsman', 29 May'97:

"Were radiation supervisors/controllers required to do nuclear submarine tunnel monitoring, working in the dosimetry section, and doing 30 hours shutdown surveys?"

Reply from V.T., 2 June'97:

"It is true, their work involved monitoring in tunnel, and issuing and reading dosimeters. At all times Vectra staff were under instructions of client nominated staff at Faslane, and sought to be flexible and responsive to the clients' needs at the time."

Questions by reporter of 'The Scotsman', 29 May'97:

"Who was in charge of overall radiation safety in the event of a spillage or emergency?"

Mr Connor states that safety checks (contamination surveys) should be carried out every twelve hours after a shift at Faslane? Do you agree with this, or do you consider the checks are adequate?"

Reply from V.T., 2 June '97:

"These are questions better asked of MoD Faslane, and addressed to them."

Comment:

1. VT had no previous experience in the repair and maintenance, and their inability to answer the above question confirms this.
2. There should be an enquiry as to how they got the contract.

Recommendation

MoD should in future ensure that companies they employ for work in Health Physics have radiological experience.

11. Reactions to report.

First of all, I would like to say how disappointed I have been with certain members of the Labour Party, politicians of the British and Scottish Parliaments would have been aware of my report and have done little to support me. The lack of response by the following Councils, Argyll and Bute, Dumbarton and Glasgow who constituency members were directly affected by my proposals due to the close proximity of Faslane. This was mirrored by well known environmental organisations that failed to recognise the implications of my report.

BBC Scotland Television gave a good presentation of one aspect of my report, but I was disappointed that it was not shown nationwide and that it did not reflect my discontent with the two main industrial unions, A.E.E.U. and the T&G. and also the Health and Safety Executive. There has been no follow-up by the national newspapers despite them also being aware of my report.

To conclude my report must be discussed at the Defence/Environmental Committees either in London or Edinburgh Parliaments. If not then what access to information will the general public have in the event of a serious nuclear incident.

12. Conclusion

After reading through the various issues in this report, hopefully you will have gained an insight into the safety and radiological matters that are highlighted. By presenting this report to the appropriate persons, I anticipate that my recommendations will be implemented as soon as possible, for to ensure the safety of all navy and civilian personnel working in radiological controlled areas on nuclear submarines.

