



05 January 1998

J.R. Trewby
Rear Admiral
Ministry of Defence
Room 13 Block C
Ensleigh BATH
BA1 5AB

Your Ref: D/NBSA/199/10

Dear Rear Admiral,

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

I enclose information which give details of safety matters and also questions addressed to Vectra Technologies who have not responded. Please refer to Appendix I.

"I can assure you that the safety of those who work within the M.O.D. 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." Rear Admiral, J.A. Trewby, 19 November 1997.

I would like you to consider this quote in relation to the information I enclose regarding safety matters, based upon the correspondence between ourselves and Vectra Technologies over the last twenty months. I am willing to discuss any contentious aspects of this report with the parties involved. Failing any attempt to sort out these issues I feel I may distribute this to other interested parties. I am sure you will agree that our common purpose is to provide a good Health Physics Service to all persons involved at Faslane, in line with other nuclear establishments. I have no objection to you passing this on to Lt Cdr R Copsy SOICP if you feel this is necessary.

I look forward to hearing from you,

Yours sincerely



Enc:

1. My Role as Safety Controller.
2. Operational Control at Faslane.
3. Instrumentation
4. Radiation Tunnel surveys.
5. Radiation Exposure.
6. Emergency Monitoring.
7. Incident at M11 Workshop
8. Summary

1. 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. I started with H.M.S. Dreadnought, Britain's first nuclear submarine 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 M.O.D. Rosyth (Babcock Thorn), it was soon apparent that under private enterprise the health physics department was operating quite differently than M.O.D. Rosyth.

I feel my contract was not renewed because confusion arose between the different working arrangements and I spoke out about certain safety matters. Later I was informed by Vectra Technologies, Mr Ron Kennedy, that I was not wanted back at Faslane as a Radiation Supervisor and not even as a Radiation Monitor. I believe my character and reputation have been questioned.

I was offered work immediately at Sizewell or Dungeness Power Stations at a lower grade but declined. They then offered me a personal reference which I refused. After many failed attempts to be given a reason for my non-reinstatement of my contract, I gave evidence that senior members of Vectra Management were working under part of a cleaning contract, normally carried out by naval ratings. Their response led to me being threatened by the Official Secrets Act 1911-89; which was **ten months out of date.**

2. Operational Control at Faslane

Navy leading hands are 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 myself and the medical assistants 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 (R.C.) which involved an engineer breaking into the primary system. This with the possibility of an external airborne contamination hazard within the R.C. I explained to duty officer, Lt Chilcott that this work was normally done by a 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 understand that employees need to be flexible to cover other staff, but radiation safety of employees should not be sacrificed. Radiation safety is paramount. Compare these events with the statement given by Rear Admiral, regarding the priority of staff safety. (found on covering letter.)

The navy have since stated that "should a problem arise it may be necessary for you to have waited for a relief." This is against all Health Physics practice as immediate advise should always be available. The following quotes appear to contradict each other:

" At all times Vectra staff were under the instruction of client nominated staff at Faslane and sought to be flexible and responsible to the clients needs at the time."

Statement by Vectra Technologies.

The Navy also stated "Your job entailed supervising Health Physics Monitors within the group."
Rear Admiral, J.A. Trewby 8/12/97.

**No-one seemed to be in charge which leads to the diminishing role of radiation supervisor.
The Health Physics Controller's main aim is to be independent of production.**

NOTE. VECTRA TECHNOLOGIES TAKING OVER CONTRACT FROM ROSYTH ROYAL DOCKYARD WITH MANNING LEVELS GREATLY REDUCED. (CONTROLLER HAVING TO DO RADIATION MONITORS WORK?)

3. 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 BP3 Geiger Muller glass probe which 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?**

The navy stated that "in some cases better instruments are considered available, the instruments in use at Faslane are considered fit for purpose." I would, however question this.

In a book by the National Radiological Protection Board 1989, the performance of over twenty surface contamination monitors were 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, why are installed personal monitor I.P.M.7 not used to monitor personnel before they leave the yard? This is the procedure for all other nuclear establishments. The navy's reply to this was that an I.P.M.7 is available, but its use is not compulsory. (Rear Admiral, J.A. Trewby, 8/12/97.)

4. 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 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 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 M.O.D. Rosyth. However, the Navy have stated that "there are no requirements for surveys to be done at 12 hour intervals."

5. Radiation Exposure

During the cleaning of a nuclear submarine reactor compartment, eight young navy ratings received 950 micro Sv per shift, almost 2mSv in two days. The annual limit being 15mSv per annum. Although the MOD investigation level over a period of time 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 M.O.D. Rosyth.

If As Low As Reasonably Possible (A.L.A.R.P.) 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 were 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, surely dosimeters should be set at 300mSv per shift, instead of the current 950mSv; the same dosage used almost 30 years ago.

6. Emergency Monitoring

Although emergency procedures are carried out at Faslane, experienced staff are 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 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 Royal Dockyard but their assistance was not asked for in their last exercise or in previous years.

7.M11 Incident

At the start of the Rosyth Royal Dockyard contract at Faslane in 1989, radiation hot-spots were found in the M11 workshop, which is used by Naval Engineers who work in radiation controlled areas on the Nuclear Submarines.

Due to inadequate monitoring techniques hot-spots developed over many areas of the Workshop.

Reply from Rear Admiral Trewby, dated 3 January 1998

There is no incident report on record for 1989 and in any event, I am assured that present monitoring techniques comply with current regulations.

I have noted your comments, but if my statement above is denied, I will be able to name the Rosyth radiation monitors who did the surveys.

8. Summary

The protection of all navy and civilian personnel working on Nuclear Submarines has to be our main concern.

The Health Physics Department was set up to provide this service and must be independent . This was undermined by Vectra Technologies lack of experience in the this field by directing their supervisors to undertake other tasks.

Again undermining the essence of providing Nuclear safety.

The Navy Health Physics Departments are hard working and conscientious, but with the continual change over of staff, they are not getting the experience to provide proper control. Also what is of grave concern is that in the event of a Nuclear Incident outwith the yard, this lack of experienced personnel must be a concern to the general public.

Appendix 1

Issues addressed to Vectra technologies.

1. [REDACTED] replaced Mr P Norton as Radiation Controller/Supervisor during Vectra's three year contract as H.M. Naval Base Clyde (Faslane). Four senior members of Vectra Technologies, one has since become a Director (Mr R Kennedy) , were part of a Grade A cleaning contract in a nuclear submarine reactor compartment? More importantly the implication of this is that they were prepared to do labour intensive work, thus in turn complicating my position as a Supervisor.

2. When Vectra Technologies won the contract from Rosyth Royal Dockyard in November 1992 what previous experience did they have in the maintenance and refitting of nuclear submarines?

3. You have stated in previous correspondence that radiation Controllers/Supervisors should be flexible and responsive to clients needs, therefore that explains why you agreed they should do radiation monitors work in;

- a) tunnel monitoring
- b) issue and reading dosimeters
- c) reactor compartment radiation shutdown surveys
- d) controlling engineers working in possible contamination job operations.

Therefore

- a) who, if radiation Supervisor is doing the above jobs is in charge of the overall radiation safety in other Nuclear submarines?
- b) how often should reactor compartment tunnel surveys be done?
- c) do you consider radiation checks adequate?

To the above questions Vectra Technologies responded....ASK M.O.D.

THIS PROVES MY POINT THAT NO-ONE SEEMS TO BE IN CHARGE!!!!

4. You have stated that Vectra Technologies are confident that safety procedures their staff work at at Faslane are correct and proper. If they were not ,who would be responsible?

5. Why were P Forker's and R Jeffries's (who now work for M.O.D) contracts as radiation Controllers/Supervisors at Faslane renewed in March 1996 and J Connor's terminated?

R Jeffries had not worked as a Health Physics Supervisor on nuclear submarines and P Forker had not worked as a Supervisor until both were employed by Vectra Technologies at the start of a three year Contract. Mr Hynd who replaced Mr Connor had not worked as a Supervisor for over 20 years until employed by Vectra.