# David Harrison - Atomic Weapons Establishment

BEHAVIOURAL SAFETY USER CONFERENCE 2003

I'm from the Atomic Weapons Establishment. Were in two sites. These aerial views give you some idea of how large they are, and the buildings are widely distributed.

**What we do is;**

Meet delivery and maintenance requirements for the UK's nuclear warheads safely and securely.

We do research, which is unusual for behavioural safety, and poses some unusual challenges.

We manufacture things. This is a glove box line where we handle radioactive and quite toxic materials inside.

We also decommission old weapons and take them out of service in a safe manner, and we also put together new weapons. There is a lot of manual handling and PPE issues. For the ultimate in PPE we have the decommissioning of old plants where people wear these suits, commonly known as frog suits, supplied by compressed air through the tail. This is most unpleasant work.

We had to develop a strategy for implementing behavioural safety at our place, so we came up with several directorates, and we realise each of these has there own priorities, sub-cultures and perceptions. With perceptions quite often people get quite fixated with the fact there handling radioactive material and overlook the minor hazards, the tripping, the cutting, etc, which are in fact the real hazards.

We had three pilots running which we learnt a lot from, and from them we developed a scheme to take behavioural safety across the company, expanding as we went, and the only way we could do that was get the individual directorates involved and find out what there priorities were and get individuals in those areas to spread the word on the training.

## Lessons learned from the pilot

We found it was quite important not only to have quick wins but big wins because they are high impact-low cost, but every now and then you would come across something that was high impact-high cost which you do have to deal with. We have managed to tackle some of these things that have been problems for about 15 years, and we've got the senior manager to buy in, and dealt with it.

Most importantly we found the measures were not always understood by the whole workforce. People would say stuff like 'I wasn't consulted about the measures', and 'I didn't realise I wasn't supposed to do that'. We were concerned about the buy-in we had. We tried various methods to remind people what the measures were, and what the process was about, but they were not that successful, so we went on to do something else that I will explain about in a moment.

We also recognised that root-cause analysis was particularly important, and that's something I will touch upon in a moment.

## Examples of wins

The first example is high cost-high impact. Everyone thought this job was going to cost about a million pounds, so people thought &nobodies going to give me that so nobody asked for it. Behavioural safety came up with a solution that cost a few thousand pounds and they had to do it.

In terms of the research department we see an example of a low cost-high impact solution that we can use as a vehicle for publicising behavioural safety around the site and other places.

Here is the spray boot. The problem here is you have to get the trolley from the alley on the right hand side, into the spray booth on the left. There's not enough room to get the thing in there at right angles to the table, and it means stretching while your lifting, bending, while moving a heavy object. The sensible thing would be to turn the thing round, and that's what's going to be done fairly shortly.

Then take the example of a simple mug. It seems simple, but people spilling coffee down the corridors where people were carrying acids, solvents, that sort of thing. I realised they were not spilling those materials (acids, solvents, etc) because they were carrying them in the proper containers. We resisted the temptation to say 'we will ban coffee' or 'put up a paper towel dispenser to clean it'. What we did was get travel mugs and deal with it from first principles.

This was the most important part of all here. This is how we dealt with people who said they didn't understand the measure. A few days before the event we gave an explanation sheet to everybody that explained what we were going to do, with the measure on there. To ensure no one was forced to stand and talk in front of their mates we shut the place on a half-day. We took the staff away to a suitable venue. Split them up around tables to ensure we didn't have a group of managers on one and a group of observers on the other. We then got a facilitator from outside the organisations to sit in at each table, because if you say &have you got any problems' one or two, the usual trouble makers, put there hands up and they are always discredited as they are always seen as moaners, and the people who have the real answers to the problems don't speak up. The facilitator was there to draw this out of them and it worked very, very successfully. The senior manager came in and expressed his support and said how important behavioural safety was, and how safety was more important than production targets. He gave everybody a reminder of the principles of behavioural safety and gave examples of A.W.E. wins.

Then we went through the measure. We said this is what you have been doing for the last 6 months, is there anything about it we need to change? We had around 95% agreement and 'buy-in' to the measure. The facilitators were very busy writing down solutions to problems, sometimes that we never knew existed. Then the committee went through the feedback they had and presented it to the group. We found that this has allowed a much better 'buy-in', and producing a report with warts and all quotes in, meant that the workers could see their suggestions were not being filtered by the managers.

### Root cause analysis

This is something we are just about to start. Were going to take everybody, put them into small groups, and try and identify the pre-conditions for unsafe acts. We're going to use Reasons &Swiss cheese' model. Mark Taylor has been very supportive in this work. What we want to do is rather than see how it goes, we want to identify those parts of the workplace or processes that will cause those unsafe acts, and stop them before they occur. So we don't want to make observations unless they are safe observations.

### Questions

"How are you going to categorise the data using the 'Swiss cheese' model?"

To tell you the truth, I don't actually know. I think it's going to be in the form of a questionnaire, and I want to give the staff some training about what the 'Swiss cheese' model looks like. But so far I haven't got my head round how I am actually going to do it.