Meeting to discuss radioactive contamination at Dalgety Bay

Date: 1 November 2005

Time: 10:30

Location: The Queens Hotel, 24 Henderson Street, Bridge of Allan.

Draft minutes of meeting.

Present:

SEPA
Colin Bayes (Chairman)
Allan Reid
George Hunter
Paul Dale
Alda Forbes
Ian Robertson (mins)

Scottish Executive
Richard Grant
Marianne Cook
Elizabeth Gray
Ian Hall
Neil Trotter

MOD
Fred Dawson
Iain Robertson

Fife Council
Phil Mawhood

Fife NHS
Jackie Hyland

HPA
Marion Milton

1. Introduction and Purpose of Meeting

The Chairman, Colin Bayes (CB), opened the meeting and thanked those present for being able to attend at short notice. He outlined the purpose of the meeting by expressing the need to determine and adopt a strategy for dealing with radioactive contamination at Dalgety Bay. Also, he noted that the forthcoming Radioactive Contaminated Land Regulations, the consultation of which began on 28 October, may have an impact on the strategy for Dalgety Bay. CB explained that a recent enquiry had been made by a journalist regarding monitoring work at Dalgety Bay in 2005. This had highlighted the need for developing a strategy for dealing with public

reaction to publicity about radioactive contamination at Dalgety Bay. He added that, in response to this enquiry, a copy of the findings of the monitoring project conducted at Dalgety Bay in March 2005 had been sent to Rob Edwards of the Sunday Herald on 31 October.

2. Résumé – history, monitoring results and initial hazard assessment.

Paul Dale (PD) gave a short presentation in which he explained that a series of 5 monitoring projects had been carried out, on behalf of SEPA, since 1997. In the first three of these, in 1997, 1998 and 2000 identified items of radioactive contamination were removed, where disposal routes were available, from the beach and stored, whereas in 2002 and 2005, a policy of non-removal had been adopted. In the 2005 survey, approximately 100 particles containing Ra-226 were identified which was consistent with earlier surveys. In this study, particles ranging from 5.5 – 427 kBq were detected and, for the most active of these, calculated committed effective doses of 388mSv and 115mSv were derived for inhalation and ingestion respectively. Similarly, skin doses of 50mSv would be delivered in approximately 35 minutes. These findings provided clear evidence that the potential existed for receiving skin doses in excess of 50mSv and committed effective doses greater than 3mSv. PD pointed out that 3mSv was the proposed threshold for the forthcoming Radioactive Contaminated Land Regulations but, currently, SEPA had no powers to intervene in cases of radioactively contaminated land. He also noted that the doses for inhalation and ingestion were likely to be pessimistic.

PD explained that, as the findings of the 2005 survey were very similar to those of the earlier surveys, the continued detection of an apparent constant distribution of contaminated particles indicated the existence of a re-population process that was maintaining equilibrium-type conditions. The possibility of a large cache of sources either offshore, on shore or along the coast cannot be disregarded.

Marion Milton (MM) added that the findings of a survey, conducted at Dalgety Bay in 1996 by the NRPB, had shown that the larger pieces of contaminated material, mainly clinker, were lower in activity compared with the smaller flakes of material which had much higher levels of radioactivity. She pointed out that inhalation of this material was unlikely. If ingested, these insoluble particles would not be readily absorbed but, in their passage through the body, would deliver most of the radiation dose to the gut.

Phil Mawhood (PM) asked if we could be certain that aircraft dials were the original source of the radioactive contamination.

Fred Dawson (FD) confirmed that the use of Ra-226 for luminising was a well established practice in the construction and maintenance of aircraft instrumentation.

Ian Hall (IH) mentioned that a report by Dr Robert Heaton in August 2000, (available on the Internet), had described the background to the origins of the contamination at Dalgety Bay.

PM mentioned that a sewer pipe crossing the beach had been renewed recently by Scottish Water. He added that he understood that appropriate radiological precautions had been taken by the members of staff who had carried out the work in the area of the foreshore and beach.

MM said that monitoring by NRPB had shown that the level of contamination in the vicinity of the pipeline was similar to the rest of the beach and that the radiological risk to the staff of Scottish Water carrying out the installation was minimal.

3. Intervention options

In reply to questions about the extent of the detected contamination, MM said that in an earlier NRPB monitoring survey, contamination was detected in a small area adjacent to the foundation of the sailing club and also in the garden of one of the nearby houses. She confirmed that the identified material in the garden had been removed and stored pending disposal.

Elizabeth Gray (EG) asked about the possibility of the existence of a larger source of contaminated material.

PD said that the monitoring programmes, carried out for SEPA, had shown that there were contaminated items in the headland that was subject to erosion.

CB suggested that there could be more than a single source, one of which could be re-deposition from the marine environment.

There was general discussion about possible sources of the contamination: eg erosion of contaminated land, diffusion from a large source of contamination, vertical re-circulation within a certain depth of sand or re-deposition from the marine environment. FD pointed out that if it were erosion or diffusion from a single source, repeat surveys would probably show a decline in measured levels of contamination. PD thought that the existence of a re-population effect would be consistent with the monitoring findings obtained over the set of surveys spanning the 8-year period of investigation.

George Hunter (GH) said that the monitoring work carried out on behalf of SEPA had not established the full geographical extent of the contamination. He said that it was necessary to establish risk criteria from which to derive threshold levels of contamination for defining the area of the monitoring survey. Also, he asked if the same equipment should be used in further monitoring surveys.

There was general agreement that there was a need for carrying out a monitoring project over a larger geographical area to determine the full extent of the land affected by the contamination and that the same or similar equipment should be used as this would permit comparison with previous survey data.

4. Communication – Community Council
Media
Others

The Chairman, CB, said that in view of the implications of potential radiation exposures, it was important to establish and maintain liaison with authorities and interested bodies.

PD said that SEPA had kept Dalgety Bay Community Council informed of the monitoring work that had been carried out.

CB made the point that the Community Council did not want ‘Dalgety Bay’ to attract a disproportionate level of attention in the public domain.

Neil Trotter (NT) asked about the policy for public access to the beach area.

EG asked if any information notices or warning signs had been posted at the beach.

GH said that no such notices or signs had been erected. He added that, although a policy of demarcation and control of access had not been employed hitherto, he was of the opinion that, in view of the radiological risks indicated earlier, compliance with the EURATOM BSS through the Radioactively Contaminated Land Regulations would necessitate adoption of such a policy when this legislation came into force in 2006.

MM added that, following the NRPB survey of the beach and foreshore, the Community Council had been warned not to carry out any further building work adjacent to the beach.

Ian Hall (IH) said that a risk-based assessment could show that there was no need to restrict access to the foreshore providing systematic monitoring was being conducted on a regular basis.

MM said that in view of the low specific activities of the larger pieces of clinker, this type of material posed only a low level of radiological risk. However, a problem could arise if fine, higher activity, material adhered to the hands.

Jackie Hyland (JH) asked if it was possible to predict future risks and the consequent implications for children playing in the area.

IH said that children were unlikely to collect material composed of fine particles, but potential danger could arise if a high activity particle became lodged under a finger nail.

JH said that it was not appropriate to make assumptions about how people behave.

EG stated that at Sandside Bay near Dounreay and at Aberdeen beach a policy of removal of identified contamination had been adopted. She added that, in her opinion, contamination should be removed even where the risk was minimal.

Allan Reid (AR) expressed the view that, as far as public perception is concerned, removal of all contamination would be the only acceptable solution.

IH said that a strategic risk assessment was required. He added that, from a cost/benefit analysis point of view, it would be prudent to remove contaminated items. Also, he suggested that in any future monitoring work involving removal of material, the location and level of activity of detected items should be recorded to permit comparison with data collected in previous surveys.

PD said that, given the uncertainties of the number of particles, hazard, risks and extent of contamination, it was appropriate to adopt a policy of demarcation, delineation and if necessary, control of access, by the competent body.

EG asked what information should be given to the public.

JH pointed out that the question will arise, ‘Why did you not put up signs earlier’.

PM asked when signs should be erected.

JH said that it was necessary to start talking to people to make them aware of the situation.

NT suggested that signs should be used to inform the public of what is being done. He further suggested that the Community Council should be consulted about the use of the local press.

5. Agree strategy for intervention

The chairman summarised the outcome of the discussion at this stage by identifying three topics for attention:

a) a need to carry out further work to determine the geographical extent of the area affected by contamination,
b) methods of providing information and the signage which should be used to advise the public,
c) re-commencement of a programme of monitoring with removal and storage of contaminated material.

GH expressed the opinion that, in considering various exposure scenarios, it was not appropriate to focus attention solely on deterministic effects.

NT enquired about possible effects on the food chain.

MM said that the herbs grown in the domestic garden, where contamination had been detected, did not show any signs of contamination.

Regarding the marine food chain, MM said that this was a topic that merited investigation

6. Future management

At this point in the discussions, CB suggested that a small group of representatives should meet with the Community Council.

AR said that on the basis of the experience of signage at Aberdeen beach, engagement with the Council is critical.

The Chairman said that he thought that a meeting with Fife County Council would be appropriate and suggested that PH, JH and SEPA representatives should attend.

CB raised the question of where Ra-226 contaminated material should be stored pending disposal.

FD, acknowledging that Rosyth Dockyard had been used in the past for this purpose, undertook to enquire about the possible use of an MOD storage/disposal waste-stream for Ra-226. Although FD was willing to assist with the recovery programme, he pointed out that the MOD did not accept liability.

In reply, CB said that, irrespective of the question of liability, he was pleased to acknowledge that the MOD was co-operating with SEPA and recovery would be carried out once MOD agree to take the waste.

The Chairman said that a current group was looking at SEPA, SE and MOD issues. He suggested that the remit should be extended to include Fife County Council.

On establishing that MM was not a member of this group, CB said that further consideration of membership of the group was necessary.

CB said that the next meeting of the current representatives was scheduled for 25 November. He expected that the agenda of this meeting would include consideration of the longer-term issues.

CB said that a letter should be sent to the Community Council stating that this meeting had taken place.

7. AOCB

EG asked about the timing of the planned monitoring survey work.

PD said that he expected it to be re-started before the end of the year once Mod have a disposal route available.

EG said that she hoped it would be possible to start it sooner than that.

NT asked if there were other sites associated with the disposal of aircraft parts.

FD said that there was a site near Stirling and another at Gowkthrapple in North Lanarkshire. He added that luminising other parts of military hardware had been a common practice and one not confined to aircraft instrumentation. He said that he was aware that there were other sites where there was a potential problem. He pointed out that any related issues at such sites would be addressed when the new radioactively contaminated land legislation came into force next year.

There being no other competent business, the Chairman thanked everyone for their attendance and contributions.

8. Date of next Meeting

The date of the forthcoming meeting was, as noted earlier, 25 November 2005.

The meeting closed at 12.30 pm.

Meeting to discuss radioactive contamination at Dalgety Bay.

Invited Organisations:
Fife Council
Health Protection Agency
Ministry of Defence
Scottish Executive
SEPA (Chair and Secretariat)

Date: 1st November 2005

Time: 10.30

Location: The Queens Hotel, 24 Henderson Street, Bridge of Allan.

Agenda

Time	**Agenda Item**	**Duration** (mins)	**Lead**
10.30	**1. Introduction**	20	SEPA
10.50	**2. Roles and Responsibilities**	20	All
11.10	**3. Potential Hazard**	20	SEPA
11.30	**4. Radioactive Contaminated Land Regulations**	10	SE
11.40	**5. Required Actions**	45	All
12.25	**6. AOCB**	5	
12.30	**Lunch**	30	
13.00	**Close**		