



<p>Mr Alastair Hamilton Shetland Islands Council Head of Services - Planning Infrastructure Services Department Grantfield Lerwick Shetland ZE1 0NT</p> <p>June 2006 Your Ref: RN/PN/EL50</p>	<p>Please respond to:</p> <p>June Love Communications Department D2003/Zone 9 UKAEA, Dounreay Thurso, Caithness KW14 7TZ Tel: 01847 806082 Fax: 01847 806900 Email: june.love@ukaea.org.uk</p>
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Dear Mr Hamilton

UKAEA CONSULTATION: 'STRATEGY FOR MANAGING RADIOACTIVE PARTICLES IN THE ENVIRONMENT'

Thank you for your letter referenced above in response to the particles BPEO consultation. UKAEA welcomes your views and have addressed them as follows. For ease of reference your letter is replicated here with UKAEA's response in blue italics.

The Council believes there are several fundamental issues concerning this project that must first be addressed before any final consideration of the options in this consultation.

1.0 The UKAEA describe this process as a "public consultation on the determination of the Best Practicable Environmental Option for the long-term management of radioactive particles released into the environment."

Despite extensive scientific and technical investigation and modelling, the undisputed facts are: no-one knows precisely what particles were released into the environment (only what particles have been found to date); no-one knows how many particles were released into the environment; no-one knows where the particles have gone; and no-one can say with 100 per cent confidence that no further particles are still being released. At present only 'educated estimates' are possible. *UKAEA has always stated that the number of particles released is unknown. Based on 1998 SEPA data, it is believed that there may be of the order of 10,000 still resident in the seabed near to the Dounreay site. This figure is based on the 2km fishing exclusion zone and took a cautious approach. For this area some assumptions were made, including the figure of one particle per 620 m² (determined by the actual number of particles detected over a large representative area) taken for the area of the 2km circle. Other particles are thought to have been transported to deep water where they could be buried deep in the sediment and are unlikely to present any risk whilst they remain buried. . UKAEA does, however, believe there is no ongoing source of particles being released from the site today.*

UKAEA is at this time conducting the largest investigation to date on the location and extent of particles on the seabed using a remotely operated vehicle.

In these circumstances it is completely erroneous to describe any actions as "managing" this problem. The UKAEA, and the Nuclear Decommissioning Authority as the owners of the site, can at best be described as trying to minimise or reduce the problem.

To suggest the UKAEA or NDA are 'managing' the problem implies a degree of control that is patently not the case. It also creates a quite false tone for the debate on the best actions to reduce these hazards.

The Council therefore urges the UKAEA to rename the consultation, the BPEO process and all associated material, to ensure it reflects the need to minimise and reduce the problem of particles in the environment. *The purpose of the BPEO and public consultation is to identify a strategy to deal with particles in the environment. This initial front-end consultation was to solicit views and help shape full consultation on all feasible options in the winter of 2006. UKAEA will consider your views in the production of further documents.*

2.0 The Council believes it is totally inappropriate for the problem of particles in the environment to be separated from the decommissioning of the Dounreay complex. Even though this problem exists outwith the Dounreay site boundaries, the presence of the particles in the environment is an integral part of the legacy of activities at Dounreay and must be considered central to the decommissioning of nuclear activities at Dounreay.

Phase one of the DSRP (present day – 2025), approved by the NDA, is entitled: 'Hazard reduction and waste management'. 'Hazard reduction' is precisely what is proposed for dealing with the particles in the environment. *UKAEA agrees with these comments and once the BPEO is identified and a recommended way forward is agreed, the programme of work will be incorporated into the site's Lifetime Plan. The NDA strategy supports this process. Further, UKAEA will review and refine the programme of work on a regular basis and ensure the necessary mechanisms are in place to allow for additional work, should new developments arise which warrant a change in the strategy.*

The UKAEA and NDA cannot and should not isolate the particles problem in the financial, technical and administrative planning for decommissioning the licensed site. The decommissioning of Dounreay cannot and should not be completed until the hazard of the particles has been reduced to a level that local, regional and national stakeholders agree is tolerable. Consideration of options in the BPEO should not be restricted by the timetable for completing the decommissioning programme, currently set by the UKAEA and NDA to be completed by 2036. *The Lifetime Plan covers the time up to the end of physical decommissioning of the site, however, it is presumed that parts of the site will remain under institutional control for many years after the work is complete. UKAEA has considered this view and will delete the criteria "timescale within the Dounreay site clean-up programme". In addition, the Dounreay Stakeholder Group (DSG) will consider how to engage the community on the site end point and the possibility of ongoing remediation will need to be taken into account.*

It is vital that any proposals are based on the knowledge that the UKAEA states in 'The Dounreay Particles Technical Résumé' that "it will be around 200 years...before the activities of the larger particles...have decayed sufficiently that they can no longer be considered a potential hazard" (section 4.1.4) *However, some of the options would reduce risks associated with particles by reducing the chance of contact with the particles. Therefore, the concern associated with the hazard of individual particles becomes less relevant if one of these options is chosen. Other options reduce the numbers of particles in the environment, which could reduce the overall hazard and risk remaining.*

Reducing the hazards of the particles onshore and offshore will involve considerable costs. On the 'polluter pays' principle these costs should be borne by the owners of Dounreay, presently the NDA, and included in the cost of decommissioning Dounreay.

The Council strongly recommends that reducing the hazard of the particles in the environment should be an integral part of the Dounreay decommissioning plan and costs and not considered in any way a separate matter. The BPEO should have no attribute that limits possible options to the current deadline set by the UKAEA and NDA. Attribute 8.1 'Timescale within the Dounreay Site Cleanup Programme' should be omitted.

NDA and UKAEA are working closely together on this issue. The NDA has clearly stated in its recently published strategy its support of the BPEO work currently being carried out on particles. In addition, NDA recognises that as the statutory body for long-term nuclear decommissioning, it has the responsibility to ensure that appropriate funds are available in order to implement any agreed strategy. As stated above, once an agreed strategy is developed this will be fully programmed, costed, and resourced and will become an integral part of the Lifetime Plan.

3.0 The Council welcomed the conclusions and recommendations of the 2004 report the UKAEA commissioned from Faulkland Associates to review its consultation process. The Council also welcomed the UKAEA's unconditional acceptance of the report's recommendations.

The Council seeks assurances that the recommendations in the Faulkland Associates report will be fully implemented in this consultation exercise. *UKAEA is continuously looking at ways to improve its public participation process taking into account the Faulklands report which reviewed our public participation process. The particles consultation has, indeed, already introduced new concepts which had not been part of previous consultation. The new concepts include the setting up of an independent consultation steering group to oversee the transparency of the process and the front-end consultation where the long list of options was made public and views sought to ensure the completeness of the options and also the criteria with which the feasible options will be fully assessed. The views and issues received from the front end consultation held in January will help to shape the full consultation on the options in winter 2006. UKAEA has always said it will take 'a horses for courses' approach depending on the subject of the consultation and this will not change. Therefore, different consultations will take different approaches.*

4.0 The Council believes it is unfortunate that Mr Geoffrey Minter and the Sandside Estate have not been closely involved in this consultation exercise and the preparation of the draft BPEO.

UKAEA recognises the importance of the issue raised by SIC. UKAEA has endeavoured over a long period of time to work with Mr Minter and seek a satisfactory resolution to issues raised by him. UKAEA remains committed to this and will continue to seek constructive dialogue with Mr Minter and other affected land-owners and land-users.

Consideration of options for reducing the hazard of particles in the environment

5.0 The Council has considered the options for reducing the hazard from the particles in the environment on the basis that it will never be known accurately how many particles are in the environment, nor their location. It is likely that it will never be known if the problem has been eliminated, only that the risk has been reduced.

As the size and location of the offshore problem is not accurately known, it follows that it is impossible to know accurately the nature of future problems onshore. Equally the current onshore problem is not fully known – the only known information is from the current limited monitoring programme.

It is therefore not possible to consider any option that claims to involve the recovery of "all" particles, as it is impossible to state confidently whether this can ever be achieved either onshore or offshore.

The Council therefore recommends that references or claims to recovering all individual particles, i.e. Options 3 and 12, should be changed to recovering only identified particles. UKAEA agrees, the description of options 3 and 12 outlined in the newsletter referred to 'detectable' particles to address this issue. It was also made clear in the Options and Attributes document that recovery of all detectable particles was not achievable. UKAEA will endeavour to make this clearer in all future documentation. UKAEA notes that because of the uncertainties, this issue cannot be completely remedied but a great deal can be undertaken to ensure the risk is reduced. Indeed the latest SEPA report describes the risk of coming into skin contact from a typical Sandside particle is very low. UKAEA believes that it meets the requirements set by SEPA for detection of particles on Sandside. Recent trials on the beach monitoring system were designed to assess performance and results will be available soon.

5.1 The Council believes the presence of radioactive particles in the environment is a regional problem. The public's perception, particularly overseas, is of the Highlands and Islands of Scotland and there is always the danger of the whole region suffering because of individual localised problems. In addition, it is impossible to say how far this problem has spread in the past four decades. Only informed estimates and computer modelling are possible. *UKAEA agrees with the Council's views. Work continues to delineate the plume and test the model predictions of the particle contamination offshore using the remotely operated vehicle (ROV), which can access deeper waters, than conventional diving techniques.*

5.2 The Council supports the improved monitoring of the seabed and recovery of identified particles. Monitoring and recovery methods and equipment must be regularly improved.

In considering the offshore options for reducing the risk from the particles, any activities have to be weighed against the effects on the natural environment.

The Council therefore rejects the proposed options that would involve widespread and unnecessary disruption and damage to the natural environment, such as widespread and serious disturbance of the seabed in the search for particles.

However, it is possible the strictly targeted overturn of sediment or dredging of the seabed might be advisable where concentrations of particles have been identified.

The Council is concerned that its recommendations do not fit neatly into the offshore options offered by the UKAEA. But in general the Council supports Option 11, Monitoring with Recovery, with the condition that techniques and equipment are regularly improved to allow for better detection and recovery at greater depths and in deeper sediment. Options 13 and 15 may be acceptable, but only in specific targeted and limited areas.

As a result of the consultation process a number of the options have been revised to ensure that they cover a number of variations on the implementation of the options. UKAEA hopes that this will address your concern.

Some options, such as Options 12 and 14 are rejected as unfeasible. Over what area of seabed would you dredge or overturn sediment when the location of the problem is unknown?

Monitoring alone is not acceptable – recovery of identified particles is essential. The Council is therefore concerned at decisions to stop the diving programme and use remote controlled vehicles when these are unable to recover any identified particles. Identification without recovery is pointless and achieves nothing. The current ROV monitoring programme cannot take into account re-population factors and non-recovery cannot facilitate the assessment and measuring of particles that we believe is necessary. Also it probably will not meet the

requirements of the likely recommendations of the DPAG. Equally there must be an on-going programme of laboratory assessment of all recovered particles.

The Council believes it is unacceptable that such a fundamental decision as to stop diver monitoring and retrieval and replace it with the ROV monitoring programme was taken in advance of the outcome of the BPEO consultation and without consultation with stakeholders. This is not acceptable and will undermine the trust of stakeholders.

The Council believes therefore that the use of divers with recovery equipment must continue until suitable remotely controlled vehicles capable of recovering particles are available. The Council favours the use of suitable ROV equipment, capable of detection and recovery. Monitoring without recovery of particles is a pointless exercise.

UKAEA has no intention of pre-empting the findings of the BPEO assessment. The decision to move away from diving was on safety grounds hence it was not appropriate to wait for the BPEO. The ROV system does allow work at greater depths than divers to delineate the particle plume and hence improve our knowledge. In addition, information on particle activity and depth can be estimated from the gamma spectra. Using the ROV to carry out the studies at this time does not preclude the possible use of divers in the future. Discussions are ongoing into developing a retrieval tool which can be used in conjunction with the ROV and this may be another option for offshore monitoring and retrieval. Nothing has been ruled out at this time and no choice of viable option is being favoured.

UKAEA notes the Council's views. The BPEO assessment process will help to inform the best strategy. The front end consultation held in January, and to which this response has been based, was intended to ensure the completeness of the options and the criteria against which options will be assessed. Initial screening of all the options will be carried out and a combination of an on-shore and off-shore options will be assured before fully assessing the list of options that are left. The present ROV mapping programme is designed to provide information about the dispersion of particles, without which decisions on retrieval would be compromised.

5.3 The full nature and extent of the onshore particle problem is also unknown as there is currently only a limited monitoring and recovery programme, even at the Sandside beach.

As with consideration of offshore options, the Council believes any work to identify and reduce the onshore hazards must be balanced against any additional harm to the natural environment. For that reason alone options such as a physical barrier, for example across Sandside Bay or even Dunnet Bay, should be rejected along with onshore immobilisation and the removal of all sand/sediment from all affected beaches or foreshore areas – unless an area of high concentration of particles is identified.

While rejecting onshore Option 4 - Bulk Removal, because of the likely harm to the natural environment, the Council believes there should be consideration of a 'pilot' project to remove all sand/sediment from a relatively small area of beach where there has been a concentration of particle finds. With regard to the 'pilot' a similar exercise was completed on the Dounreay foreshore hence experience of this option has already been gained. This option has therefore been taken forward as a variation to option 4. Please see EPD(06)P258 Particles BPEO – New Options.

Monitoring of the foreshore and beaches must continue and should be regularly improved and extended. Monitoring of the north Caithness coastline should be extended to identify any new areas of concern and provide reassurance to the public. The equipment and methods used for monitoring must also be regularly reassessed and improved so more particles are detected and at greater depths. Monitoring should cover all areas of beaches, in particular Sandside beach, including between low and high water marks.

Restricting public access to areas of regular contamination with fresh particles has to be considered. At the very least full clear warnings must be prominently displayed at all affected locations.

The Council believes onshore monitoring must be extended and the equipment and techniques used regularly reassessed and improved for better detection of particles. Consideration might also be given to a 'pilot' project for a programme of removal, examination and return of a small area of Sandside beach, with the approval of the owners. Options that seriously harm the existing natural environment should be rejected. Clear warnings and information for the public must be given at affected locations. As on the previous page – until full assessment of all feasible options are taken into account it is premature to comment on the Council's preferences. UKAEA will ensure that the Council's views are available when consideration of scoring feasible options is being carried out.

Finally, the Council believes all measures undertaken to address this problem must be regularly assessed and improved. Work to identify and recover offshore and onshore particles needs to be re-assessed in the light of new information and the UKAEA and NDA should plan for the work to continue for decades given that fact the particles will remain hazardous to humans for 200 years. Local and regional stakeholders must be central to decisions on reducing the hazards from the particles. *UKAEA endeavours to keep abreast of all the latest technology and will continue to do so. Indeed UKAEA organised and funded trials of alternative particle detection technologies in 2005. The Dounreay Particles Advisory Group (DPAG) will produce a report in the autumn 2006 and this together with ongoing research by UKAEA and the feedback from the front end consultation will all come together to help shape the full consultation in the winter.*

The Council has no objections for its views or this submission to be made publicly available.

I hope that our response has addressed your comments. UKAEA would like to thank the Council for their full and frank submission and look forward to further interaction when consultation on the options begins. If you require further clarification please do not hesitate to contact me.

Yours sincerely

Phil Cartwright

**Particles and Contaminated Land
Department Manager**