

## PARTICLES RETRIEVAL ADVISORY GROUP (DOUNREAY)

### SUMMARY OF DISCUSSION and RECORD OF RECOMMENDATIONS and ACTIONS

#### 13<sup>th</sup> MEETING OF THE PARTICLES RETRIEVAL ADVISORY GROUP (DOUNREAY) – 15<sup>th</sup> February 2013

**Members Present:**

Prof Alex Elliott (Member) – **AE (Chairman)**  
 Prof Tim Atkinson (Member) - **TA**  
 Dr George Hunter (Member) - **GH**  
 Prof Marian Scott (Member) – **MS**  
 Dr Andrew Tyler (Member) - **AT**

**In Attendance:**

Mr Hugh Fearn (Observer, SEPA) - **HF**  
 Ms Marta Green (Observer, DSRL) - **MG**  
 Dr Christine Lee (Observer, DSRL) - **CL**  
 Ms Anna MacConnell (Observer, NDA)- **AM**  
 Mr Bill Thomson (Observer, DSRL) – **BT**  
 Mr Mark Toner (SEPA) - **MT**

**Apologies:**

Ms Joanne Brown (Observer, HPA) - **JB**  
 Dr Paul Dale (Technical Secretary) - **PD**  
 Dr Jim Gemmill (Observer, SEPA) – **JG**  
 Mr Martin Macdonald (Observer, SG) - **MM**  
 Observer, DSG

Mrs June Moore (Administration) – **JM**

Agenda Item	Summary of Discussion	Recommendation	Action	Status	Target Date
<b>1 Chairman's Introduction</b>	<p>The Chairman welcomed all present to the 13<sup>th</sup> PRAG meeting. He advised the meeting that apologies had been received from Dr Paul Dale (Technical Secretary), Dr Jim Gemmill (SEPA), Ms Joanne Brown (HPA) and Mr Martin Macdonald (SG).</p> <p>AE extended the Group's welcome to Christine Lee and Marta Green, as additional Observers from DSRL, and invited round-table introductions from those present.</p>				

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<b>1</b> <b>Chairman's Introduction</b> <i>(cont)</i>	AE informed the meeting that the prime business of this meeting was to consider and progress the work on the Group's report as far as possible at this time.				
<b>2</b> <b>Minutes</b> <b>2.1</b> <b>Record of Previous Meeting(s)</b> <i>Paper M13/01</i>	The draft Summary of Discussion and Record of Recommendations and Actions from the meeting held on 18 <sup>th</sup> December 2012, Paper M13/01, was accepted. A minor amendment to the Chairman's Introduction was agreed.		December meeting minute to be published on the Website. <b>JM</b>	<b>Open</b>	<b>ASAP</b>
<b>2.2</b> <b>Actions Arising</b> <i>Paper M13/02</i>	<p>In the Tec Sec's absence the Chairman led the Group through the actions outstanding from the previous meetings.</p> <p>AE apologised for the delay in forwarding a copy of the Dounreay Consultation response submitted to SEPA on behalf of the Group, as prepared by AE and PD at the November meeting.</p> <p>GH said that he noted that the HPA had queried an action recorded from the last meeting. The Chairman sought the Group's understanding of the action requested of HPA during the December meeting.</p>	<p>The outstanding action points in Paper M13/02 were considered and <b>noted</b> as closed, superseded or carried forward as ongoing actions.</p> <p>The Group <b>agreed</b> that the action recorded in the M12 Minute, and added to the Actions Arising Appendix from the December meeting (M13/02) captured the action agreed during the December meeting.</p>	<p>Actions carried forward or deferred from previous meetings to be recorded as an appendix to this document.  <b>MT &amp; JM</b></p> <p>AE <b>agreed</b> to circulate a copy of PRAG's written response to the SEPA Consultation for the Dounreay Authorisation.  <b>AE</b></p> <p>It was <b>agreed</b> that although this was not JB's understanding of the action on HPA, and JB's comments are noted, the <sup>90</sup>Sr assessment is definitely a requirement for the report. SEPA will formally request that this work is undertaken.  <b>SEPA/HPA</b></p>	<p><b>Open</b></p> <p><b>Open</b></p> <p><b>Open</b></p>	<p><b>For next meeting</b></p> <p><b>ASAP</b></p> <p><b>Urgently required</b></p>

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<p><b>2.2</b> <b>Actions Arising</b> <i>Paper M13/02</i> <i>(cont)</i></p>	<p>CL requested, through the Chair, a clarification of the action still outstanding on DSRL to conduct a probe test on the Foreshore. CL asked for further information be provided, outwith the meeting and in writing, on the objectives and parameters for this action. This will ensure that the activity needs only to be undertaken once.</p>	<p>Following discussion, it was <b>agreed</b> that clarification would be provided in relation to the purpose and parameters of the work requested by the Group.</p> <p>It was <b>noted</b> that the Members had understood that hand-held equipment would be used for the test.</p>	<p>AT <b>agreed</b> to provide to DSRL, in writing, the reasons for, and parameters of, the request for the 10 point grid probe work on the Foreshore. <b>AT</b></p>	<p><b>Open</b></p>	<p><b>ASAP</b></p>
<p><b>3 Surveys Update – Beaches</b></p> <p><b>3.1 Sandside Beach</b></p> <p><b>3.2 Dounreay Foreshore</b></p>	<p>The Chairman invited DSRL to provide an update on beach surveys. DSRL had prepared a PowerPoint presentation with the relevant updates.</p> <p>BT advised the meeting that the period of enhanced monitoring at Sandside ceased at the end of September 2012.</p> <p>BT reported that five particles had been retrieved from Sandside Beach during the period October 2012 to January 2013; all were of <i>minor</i> activity.</p> <p>BT also reported that two <i>significant</i> particles had been retrieved from the Dounreay Foreshore during January; one from the East and the other from the West Foreshore. One <i>relevant</i> particle had been recovered during November 2012.</p>				

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<p><b>3 Surveys Update – Beaches</b> (<i>cont</i>)</p> <p><b>3.3 Dunnet Beach</b></p> <p><b>3.4 Others</b></p>	<p>BT informed the meeting that routine monitoring continues at all specified beaches.</p> <p>BT confirmed that there had been no particle finds on any other beaches during the period October 2012 to January 2013.</p>				
<p><b>4 Investigation of Sr-Rich Particle</b></p>	<p>The Chairman invited DSRL to update the meeting on the further analysis of the ‘unusual’ particle. The DSRL presentation continued with the most recent data on the ‘Strontium Particle’.</p> <p>BT advised the Group that the particle had been subjected to a repeat Lab analysis and review of the original examination, during which an arithmetical error had been found and corrected. He said that the latest information on the <sup>90</sup>Sr particle had been sent to SEPA.</p> <p>DSRL asked the Group for its category classification for this particle. A discussion ensued and the hazards of potential inhalation and ingestion were considered. GH raised the question of irradiation of the gut wall as a particle passed through, with an increased risk posed by slow transit times if there are gastric conditions present, i.e. Diverticulitis, and this was discussed and considered by the meeting. The Group reiterated the need for advice from the HPA.</p>	<p>It was <b>noted</b> that the new information had not yet been sent to the Group and a copy was requested.</p> <p>It was <b>noted</b> that DSRL will be sending a sample of the Strontium Particle leachate solution to HPA for confirmatory analysis.</p> <p>It was <b>noted</b> that the Group considered that the high level of insolubility of this particle would be unlikely to cause damage if ingested. It was also <b>noted</b> that the Group believed the physical size of this particle would prevent inhalation.</p>	<p>BT <b>agreed</b> to circulate to the Group a copy of the information that DSRL had sent to SEPA. <b>BT/DSRL</b></p> <p>It was <b>agreed</b> that the Group would not expect this particle to cause harm if ingested, but the potential skin dose rate information and dose to the gut will assist with the determination of particle classification</p>	<p><b>Open</b></p>	<p><b>Urgently required</b></p>

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<p><b>4</b> <b>Investigation of Sr-Rich Particle</b> <i>(cont)</i></p>	<p>AE stated that dosimetry assessment is required from HPA before a classification can be made and the Group are currently awaiting this information from HPA.</p> <p>In response to DSRL's request for a jointly-agreed comment which could be used in the event of media interest, the Group discussed and agreed an interim statement.</p> <p>BT reported that DSRL had undertaken the trial requested by PRAG and SEPA to determine whether detection of <sup>90</sup>Sr particles could be improved by the use of carbon fibre casings. The trial took place on 9 February and initial results indicate that there may be a small improvement in detection for activities greater than 1 MBq. A discussion ensued, during which the meeting considered the effect of changing the equipment casing on the probability of detection of <sup>137</sup>Cs particles. BT noted that the report would be available by the end of February.</p> <p>CL was concerned that the alteration to the detection equipment might require permission from the Regulator, under RSA Authorisation requirements, and this was discussed. HF noted that this would probably not be the case, however SEPA would assist if any issues arose.</p>	<p>It was <b>noted</b> that the categorisation of the Sr-Rich particle will be addressed in the Group's report.</p> <p>It was <b>suggested</b> that DSRL and NDA collate a Frequently Asked Questions document that may be used as an agreed response for any press enquiries that may arise.</p> <p>Following consideration, the Group <b>recommended</b> that modification of the detection equipment casing from the High Density Polyethylene currently in use to Carbon Fibre casing should be implemented by DSRL.</p>	<p>It was <b>agreed</b> that SEPA should send a request to HPA for a relevant assessment to be undertaken as soon as possible. <b>PD/SEPA</b></p> <p>It was <b>agreed</b> that a jointly-approved statement would be prepared. <b>DSRL/NDA/AE</b></p> <p>It was <b>agreed</b> that the Group would recommend changing to the new system of Carbon Fibre casing. AE asked HF to facilitate the modification, if necessary. <b>DSRL &amp; SEPA</b></p>	<p><b>Open</b></p> <p><b>Open</b></p> <p><b>Open</b></p>	<p><b>Urgently required</b></p> <p><b>ASAP</b></p> <p><b>As soon as report is available</b></p>

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<b>3 Surveys Update – Beaches</b> <i>(Additional information)</i>	<p>In conclusion of his presentation, BT reported on the wind-storm event that occurred in the area on 4<sup>th</sup> February, producing wave heights of up to 55 ft (17m) in the Pentland Firth. He informed the Group that waves, driven by high winds from a Northerly direction, were breaking over the top of Holburn Head and were seen striking the Dounreay Castle. A video was shown of the wave heights during the storm. BT said that, to date, there had been no discernable increase in the number of particles detected on beaches as a result of the storm.</p>	<p>The impact of the extreme wave heights on potential particle disturbance and/or fragmentation was <b>noted</b> by the Group.</p>			
<b>5 Final Report to SEPA and DSRL</b>  <b>5.1 Chapter on Offshore Retrieval Operation</b> <i>Papers: M13/03A;/03B;/04 and /05</i>	<p>The Chairman advised the Group that the meeting would consider the draft sections of the report currently available for consideration on-screen and that 'live-edit' would be executed by MT to incorporate any amendments or additions to the text agreed by consensus during the meeting.</p> <p>AE invited TA to lead the Group through the draft text. TA stressed that, due to delays attributable to a recent period of illness, together with other commitments, his draft chapter currently remains as 'work in progress' and he asked the Group to consider his paper only as a working document. TA led the meeting through the draft text for the chapter on the offshore retrieval operation.</p>		<p>It was <b>agreed</b> that further work is required on this chapter.  <b>TA</b></p>	<p><b>Open</b></p>	<p><b>ASAP</b></p>

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<p><b>5</b> <b>Final Report to SEPA and DSRL</b> <i>(cont)</i></p> <p><b>5.2 Chapter on Beach Monitoring</b> <i>Projected Paper</i></p> <p><b>5.3 Chapter on Sr-Rich Particle</b></p>	<p>The Chairman invited MS and AT to address agenda item 5.2.</p> <p>AT informed the meeting that a draft document had been circulated to the Group late last night, which could now be considered on-screen. AT and MS led the Group through the draft chapter, which they advised was still very much 'work-in-progress'. The text, graphs and tables were considered and discussed.</p> <p>During consideration of this section, CL informed the Group that SEPA's recommendation, following the Dounreay Authorisation Consultation, was for DSRL to undertake quarterly monitoring at Sandside beach. However DSRL is continuing at present with monthly surveys. The value of monitoring the most easterly and westerly beaches was discussed and the possibility of identifying criteria for a termination point of beach monitoring was raised.</p> <p>The Chairman advised that, as further information on the <sup>90</sup>Sr particle has not been forthcoming, there is no progress on this chapter. GH is to undertake further work on this section as soon as the data is available.</p>	<p>It was <b>noted</b> that the results of the <sup>90</sup>Sr beach trial are due at the end of February. The Group <b>recommended</b> that the results of the trial should be included in its report, if possible.</p> <p>It was <b>noted</b> that there is further work required on this chapter to enable the Group to incorporate recommendations for future monitoring regimes into its report.</p> <p>The Chairman confirmed that the Group's <b>recommendations</b> in respect of frequency and seasonality of beach monitoring will be addressed in the final report.</p> <p>It was <b>noted</b> that the trial results, due at the end of this month, would be included in this section.</p>	<p>It was <b>agreed</b> that BT will send the results of the trial to PD as soon as available. HF <b>agreed</b> that the information will be distributed to the Group as soon as possible, for inclusion in the PRAG report. <b>DSRL and SEPA</b></p> <p>BT <b>agreed</b> to provide MS with dates of new monitoring systems (currently 2002 &amp; 2008). <b>DSRL</b></p> <p><b>MS and AT</b> agreed to undertake further work on this chapter. <b>MS &amp; AT</b></p> <p>It was <b>agreed</b> that the <sup>90</sup>Sr particle would be included in the Beach Monitoring section, but that a separate chapter would be incorporated into the report in recognition of its significance.</p>	<p><b>Open</b></p> <p><b>Open</b></p> <p><b>Open</b></p>	<p><b>As soon as available</b></p> <p><b>ASAP</b></p> <p><b>ASAP</b></p>

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<p><b>5.3 Chapter on Sr-Rich Particle</b> <i>(cont)</i></p> <p><b>5.4 Introduction and Summary Sections</b> <i>Projected Paper</i></p>	<p>AE provided a revised version of the draft for this section, which was displayed on-screen for the Group's consideration.</p> <p>AE led the meeting through the revised text for the Introduction section. BT provided figures for AE during the meeting, required for section 1.2 in this chapter.</p> <p>The Chairman stressed to the Members that the outstanding work required on these separate sections would need to be undertaken as soon as possible, if the Group is to meet its deadline for production of the whole report by the end of March.</p>		<p>It was <b>agreed</b> that this section now has an increased importance and GH will provide a new draft of a separate chapter. <b>GH</b></p>	Open	ASAP
<p><b>6 Future PRAG(D) Work Programme</b></p>	<p>The Chairman outlined the timetable for final provision and collation of data for inclusion in the report, and summarised actions identified during the meeting:</p> <ul style="list-style-type: none"> <li>• copy of <sup>90</sup>Sr Lab information sent by DSRL to SEPA to be forwarded to Tec Sec and JM for dissemination to Members;</li> <li>• the results of the detector casing trial report to be distributed by the end of February;</li> </ul>		<p>BT to forward Lab analysis to PD/JM for circulation. <b>DSRL</b></p> <p>BT to send trial results to PD/JM when available. <b>DSRL</b></p>	Open  Open	<p><b>Urgently required</b></p> <p><b>As soon as available</b></p>



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<p><b>6</b> <b>Future PRAG(D) Work Programme</b> <i>(cont)</i></p>	<ul style="list-style-type: none"> <li>AE and PD to contact HPA to clarify requirement of dosimetry assessment.</li> </ul> <p>AE asked all Members to provide draft chapters for their sections by the end of the month, as complete as possible, for collation into a composite report. This would allow for a final edit and proofing of the fully-collated report at the March meeting.</p>		<p>AE and PD to clarify dose assessment with HPA. <b>AE &amp; PD, then HPA</b></p> <p>Full draft chapters to be sent to the Chairman and Tec Sec no later than <b>28 February</b></p>	<p><b>Open</b></p> <p><b>Open</b></p>	<p><b>Urgently required</b></p> <p><b>By 28 February</b></p>
<p><b>7</b> <b>Any Other Business</b></p> <p><b>7.1 Admin</b></p> <p><b>7.2 DSRL Contact</b></p>	<p>The Chairman informed the meeting that June Moore is retiring from SEPA at the end of March and requested that a vote of thanks be recorded on behalf of the Group, in recognition of June's administrative support to DPAG and PRAG(D) during the past eight years.</p> <p>MG informed the meeting that she and BT would be the Members' lead contacts at DSRL in future.</p>	<p>The Group <b>noted</b> that any outstanding expense claims should be submitted as quickly as possible, to enable JM to process before leaving SEPA.</p> <p>The Group <b>noted</b> that Marta Green and Bill Thomson are now PRAG's lead contacts and that all future requests for information and/or data from DSRL should be channelled directly through MG and BT.</p>	<p>The Group <b>agreed</b> to the vote of thanks proposed by the Chairman.</p>		

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<b>8</b> <b>Chairman's Closing Summary</b>	<b>AE</b> thanked those present for their attendance and contributions to the meeting. He requested that every effort be made by the Group to finalise production of PRAG's report by the due date.				

**Acronyms**

DPAG	Dounreay Particles Advisory Group
DSG	Dounreay Stakeholders Group
DSRL	Dounreay Site Restoration Limited
FY	(SEPA) Financial Year: 1 <sup>st</sup> April 2012 to 31 <sup>st</sup> March 2013
HPA	Health Protection Agency
NDA	Nuclear Decommissioning Authority
PRAG(D)	Particles Retrieval Advisory Group (Dounreay)
SG	(The) Scottish Government
SEPA	Scottish Environment Protection Agency
Sr-Rich/ <sup>90</sup> Sr	A particle of irradiated nuclear fuel which has significantly greater activity of <sup>90</sup> Sr than <sup>137</sup> Cs