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**ONR NGO Forum meeting
28 March 2019
Mercure Hotel, Manchester**

Office for Nuclear Regulation (ONR) present:

Adrienne Kelbie (AK) – Chief Executive (ONR co-chair)
Mark Foy (MF) – Chief Nuclear Inspector
Katie Day (KD) – Director Policy & Communications
Dr Anthony Hart (AH) – Deputy Chief Inspector, Technical Director
Donald Urquhart (DU) – Deputy Chief Inspector, Director Operating Facilities
Division

Environment Agency (EA)

Alan McGoff (AM) – Lead Nuclear New Build

NGO Representatives present:

Rita Holmes (RH) – Ayrshire Radiation Monitoring Group (NGO co-chair)
Katy Attwater (KA) – Stop Hinkley
Peter Banks (PB) – Blackwater Against New Nuclear
Prof. Andy Blowers (AB) - Blackwater Against New Nuclear
Peter Burt (PBurt) – Nuclear Awareness Group / Nuclear Education Trust
John Busby (JBS) – Stop Hinkley
David Cullen (DC) – Nuclear Information Service
Neil Crumpton (NC) – People Against Wylfa B
Rod Donington-Smith (RDS) – Cumbria Trust
Allan Jeffrey (AJ) – Stop Hinkley
Tor Justad (TJ) – Highlands Against Nuclear Transport
Dr David Lowry (DL) – Nuclear Waste Advisory Associates
Ian Ralls (IR) – Nuclear Network Friends of the Earth
Sean Morris (SM) – Nuclear Free Local Authorities
Chris Wilson (CW) – Together Against Sizewell C

Observer

Charles Johnson (CJ) – US International Physicians for the Prevention of Nuclear War

Secretariat:

Daniel Jones - ONR Communications Manager
Linda Johnson - ONR Communications Manager

1. Welcome and actions arising

- 1.1. Adrienne Kelbie (AK) opened the meeting by thanking NGO colleagues for making time to attend. AK welcomed some new attendees to the Forum and also thanked Rita Holmes (RH) for agreeing to co-chair the meeting on behalf of the NGOs, in the absence of Dr Jill Sutcliffe.



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- 1.2. Peter Burt (PBurt) noted that since the last meeting, the independent nuclear expert, John Large, had sadly passed away. PBurt explained that John had been a good friend and colleague to many NGOs. As a mark of respect a minute's silence was observed by all attendees to remember John.
- 1.3. The action log was reviewed with AK noting that action 17.04 had been open for over two years. AK proposed that this action be removed from the action log and asked for consensus on this. All agreed that this action should be removed. AK also noted the status of action 18.11 should be amended to red (delayed) as the Approved Code of Practice (ACoP) for REPIR 2019 had not yet been published.

Action 19.04 – ONR to remove action 17.04 from action log and update the status of action 18.11.

- 1.4. PBurt advised that the NGOs agreed that they would like Dr Jill Sutcliffe to remain in her role as NGO co-chair of the Forum for a further of two years, subject to Jill agreeing to do this.
- 1.5. ONR welcomed the proposal for Jill to remain in the role of NGO co-chair for a further two years, and hope Jill's re-election will help bring continued stability to the Forum and allow ONR and NGOs to continue to build on the positive foundations put in place since co-chairing arrangements were introduced in March 2018.

Action 19.05 – Peter Burt on behalf of NGOs to contact Jill to share this news and ask her to confirm if she would be happy to remain as NGO co-chair for a further two years. NGOs to provide update to the forum.

2. Update from Chief Nuclear Inspector

- 2.1. Mark Foy (MF) welcomed NGO representatives and provided an update on the status of the project to implement a UK State System of Accountancy for the control of Nuclear Materials (UKSSAC). MF directed delegates to the briefing paper issued in advance of the meeting and confirmed that the first phase of the project had been delivered in line with plans. MF advised that ONR is currently 'parallel running' to test the readiness of the SSAC operations. MF noted that the UKSSAC project had been a significant piece of work for ONR.
- 2.2. Dr David Lowry (DL) asked what would happen if there was a delay to the UK exiting the European Union (EU).
- 2.3. MF confirmed that the project is currently being funded by BEIS and this will remain in place until 2020. MF advised that if the UK was not to leave the EU then we would need to review what had been developed and consider future options. MF confirmed that we have undertaken benchmarking visits to Canada and France to review their systems for accountancy and control of nuclear materials, and that further visits would take place in the near future to other countries.



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- 2.4. DL commented that under the new system the UK would effectively be 'marking its own homework' and advised that on 600 occasions over the last 40 years, nuclear material had been withdrawn under the safeguards regime.
- 2.5. MF responded by acknowledging the concerns raised, but emphasised that the IAEA would still carry out inspections under the new regime, and that other countries also have similar systems in place.
- 2.6. John Busby (JB) asked if there would still be a plutonium audit and Neil Crumpton (NC) asked if Euratom and IAEA still have cameras on sites. NC also asked if ONR had a particular preference on which cameras should be used.
- 2.7. MF confirmed that ONR would still carry out a plutonium audit. He also advised that both Euratom and the IAEA have cameras on site, and that ONR is currently discussing the need for the former and their future ownership with the Department Business, Energy & Industrial Strategy (BEIS).
- 2.8. MF updated on the work being undertaken at Sellafield to reduce the hazard and risks at the site, noting the progress made over recent months to enable waste retrieval in the First Generation Magnox Storage Pond. MF also noted the end of reprocessing work at the THORP facility and updated on the NDA funding for the site in 2019/20.
- 2.9. Rod Donnington-Smith (RDS) asked for further details on the funding reductions at Sellafield and PBurt requested further information on what would happen to the THORP facility.
- 2.10. MF explained that we are working with the NDA to understand the funding position, but advised that we're unable to provide further information on actual figures at the current time and NGOs would need to refer to the NDA. He also advised that we expect the THORP facility would be cleaned out in preparation for decommissioning and dismantling at some point in the future, but that is a matter for the NDA. He also noted that the THORP storage ponds would store significant quantities of spent fuel until the GDF becomes available as the long-term disposal solution.
- 2.11. He updated on the Dounreay transport permissions, confirming that ONR has granted permission to enable the transfer of nuclear material to Sellafield.
- 2.12. Tor Justad (TJ) asked if ONR was aware of an incident involving a train which went through a red signal on route to Sellafield and requested further details on the investigation into this incident.
- 2.13. MF confirmed that all incidents are notified to ONR where required and he committed to provide further information on this matter.



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Action 19.06 – ONR to provide an update to the forum on the action we have taken since we were notified of the incident which involved a train running through a red signal on route from Dounreay to Sellafield.

- 2.14. DL asked how many more trips will need to take place to move material from Dounreay. He also asked if ONR had completed a risk assessment to establish if it would be a better option to store material at the site.
- 2.15. MF confirmed that ONR is aware of how many more trips are required, but explained we are unable to confirm those details for security reasons. MF advised that ONR had taken a holistic view regarding storage/movement of materials, and had concluded movement of the material to Sellafield was the most appropriate and safest option.
- 2.16. DL requested further information on how ONR assessed the risks of moving materials from Dounreay and how ONR had assessed the security risks of moving materials.
- 2.17. MF confirmed that ONR had assessed the transport safety case and was satisfied that risks were As Low as Reasonably Practicable (ALARP) and also advised that ONR had not yet granted the full suite of permissions required. He added that security assessments had been submitted which had been considered and assessed by ONR.
- 2.18. DL asked if these assessments were secret.
- 2.19. MF confirmed that was the case.
- 2.20. TJ asked about the costs associated with moving materials and NC asked about potential conflicts between safety and security cases involving movement of materials.
- 2.21. MF advised that there are a number of factors that need to be considered in movement of materials and advised that costs were just one factor. MF confirmed that there had been no conflicts in the safety and security safety cases.
- 2.22. MF provided an update on the new site license issued to Tradebe Inutec at Winfrith, and the work undertaken at Bradwell to move the site into a period of care and maintenance, explaining this was a significant milestone. MF also updated on enforcement action taken since the last Forum meeting in October 2018 and updated on new build activities, noting in particular, the nuclear island consent at Hinkley Point C (HPC) in November 2018 and the on-going engagement with the UK government regarding SMRs/ANTs.
- 2.23. RH requested further details on whether Tradebe Inutec would deal with the drainage pipe issue at Winfrith. MF explained that Tradebe Inutec occupied just a small part of the site, and the matter referred to was in relation to the broader site.



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- 2.24. MF gave the latest position on the Integrated Regulatory Review Service (IRSS) mission (by the IAEA) scheduled to take place in 2019. He advised that we would expect to be able to share the findings of the review in around 12 months time.
- 2.25. He also updated on the recently published 'External Hazards' Technical Assessment Guide (TAG), explaining that this had received international recognition for its quality and is being used to help shape IAEA standards. He directed attendees to the briefing paper that had been provided for this meeting covering recent questions on external hazards.
- 2.26. Katy Attwater (KA) expressed concerns that NNB GenCo were not considering the latest scientific data on sea level rise with regards to the HPC development, and added that the Design Consent Order (DCO) approval was based on 10 year old data. KA commented on the ONR's frequent use of the term 'reasonably foreseeable climate change', and expressed view that she did not believe that climate change was now 'reasonable' or 'foreseeable' and did not believe that NNB GenCo's safety case for HPC could have included the possibility of a 20 metre sea level rise in the next 200 years (quoted from the IPCC2018 Report). KA suggested that with the construction at HPC ongoing, it could reach a point of 'no return' which could place ONR in an awkward position if it had to tell government it did not consider it was safe to continue with construction .
- 2.27. MF explained that ONR needs to be satisfied that the safety case has considered all external hazards. He explained that ONR has an External Hazards Panel to provide us with expert advice and thinking to inform our regulatory assessments. MF confirmed that if at any point ONR did not consider it safe to continue with construction of HPC, then ONR would take the appropriate regulatory action, which may include halting construction.
- 2.28. KA expressed concern at the lack of transparency and requested minutes from External Hazard Panel meetings.
- 2.29. Ian Ralls (IR) asked how the External Hazards Panel can predict future climate change and asked about the methodology they use to reach decisions.
- 2.30. MF and KD advised that ONR would look to hold a more detailed session with NGOs to look at external hazards, to enable NGOs to put questions/concerns to our external hazard specialists.
- 2.31. Prof. Andy Blowers (AB) asked if the External Hazards Panel has social scientific input. AB advised that there are a number of ethical matters that should be considered as part of the decision making process. He explained that if we construct new nuclear power stations, those unknown risks will be passed onto future generations and we must be honest about those.
- 2.32. MF explained that we have advised UKHPR1000 vendor that, while GDA is a 'generic' process initially devised to support fleet deployment, the



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technology is only being deployed to one site and it would be appropriate to give earlier consideration to site specific issues. He advised that the licensing process is separate from GDA, and at that stage, the vendor will need to submit safety cases that demonstrate the design is safe for the conditions specific to the particular site. MF confirmed that ONR guidance does recognise that external factors change and is updated accordingly, and cited the construction of a flood wall at Dungeness B in response to learning post Fukushima.

2.33. Chris Wilson (CW) commented that he did not believe that EDF were looking more than 20 years ahead in relation to the Sizewell C development.

2.34. MF confirmed that EDF do need to look beyond 20 years in relation to proposed development at Sizewell C as our seismic assessments are based on 1 in 10,000 year event.

2.35. DL asked for details on the composition of the External Hazards Panel. KA asked if information became available which challenged the safety case, what action would be taken at HPC.

2.36. MF advised that we would look at providing further details on the External Hazards Panel. He also advised that ONR has the powers to shut down a site if we did not think it was safe.

Action 19.07 – ONR to provide minutes, membership and governance details for the External Hazards Panel.

Action 19.08 – ONR to arrange a session/webinar with NGOs to focus specifically on external hazards.

2.37. AB expressed view that operators/vendors need to do much more at site specific stage as he felt there was a degree of complacency. He asked whether the noises from ONR are “strong enough.”

2.38. MF advised that ONR requires a robust demonstration of safety and security at all stages of a nuclear facility, including prior to agreeing to the start of construction. He added that CGN have not yet completed the site characterisation at Bradwell and that ONR is still assessing the GDA aspect of the design.

2.39. PBurt commented that the future risk of climate change is indeterminate and suggested that if ONR is applying a cautionary and principled approach, is it ever practicable to allow construction of new build sites at coastal sites. PBurt asked if ONR is making these points to government.

2.40. MF advised that in relation to HPC, ONR’s judgement is that it is safe to construct.

2.41. DL asked in relation to the Wylfa Newydd project, if ONR had been paid by Horizon following the suspension of the project. NC asked if ONR is



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prepared should the Wylfa project recommence.

- 2.42. MF confirmed that ONR had been paid by Horizon and that ONR is prepared in the event the project recommences.
- 2.43. MF went on to update on progress to prepare his new CNI annual report.
- 2.44. PBurt commented on the ONR Regulatory Events Report 2015-17 and asked if ONR will be publishing a report of this type on an annual basis. He also asked if ONR actively looks at events/accidents to learn from them.
- 2.45. MF confirmed that ONR expects to include the events report as part of his annual CNI report going forward. He also confirmed that ONR does consider reported events and that we are developing new knowledge management software and systems, which will allow us to take all events into consideration and identify trends and potential learning opportunities in a more efficient manner.
- 2.46. Sean Morris (SM) commented on the proposed MoD plans regarding submarine dismantling as a cause of concern.
- 2.47. MF and Donald Urquhart (DU) confirmed that the safe defueling and dismantling of laid up submarines remain a priority for ONR and that we want to see a solution. MF confirmed that our concerns have been communicated to the MoD Minister and senior naval personnel.
- 2.48. DL asked, in relation to the GDA of the UKHPR1000, if ONR Inspectors check references if they are in Mandarin.
- 2.49. MF confirmed that if necessary ONR will arrange for documents to be translated.
- 2.50. MF finished by updating on the work ONR had undertaken following the publication of the Hackitt report into Grenfell. MF confirmed that ONR's regulatory oversight function had conducted a review, which indicated that ONR was broadly following the regulatory approach recommended in the report. He advised that the audit had identified seven areas where further improvement should be considered as part of continuous improvement, which his regulatory leadership team was now reviewing. To conclude, MF advised that following a successful procurement, DL and PBurt had been appointed to his Independent Advisory Panel and he was looking forward to them joining the first meeting tomorrow.

3. Overview of ONR's Operating Facilities Division

- 3.1. Donald Urquhart (DU), Deputy Chief Inspector and Director of ONR's Operating Facilities Division, delivered a presentation which covered the following areas: overview of the Division, outlining its role and responsibilities; regulatory challenges which it is currently managing, focusing specifically on AWE and its ageing facilities, graphite cracking at

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Hunterston B, conventional health and safety matters at Devonport Royal Dockyard (DRDL) and corrosion of concealed pipework at Dungeness B.

- 3.2. SM advised that Reactor 3 at Hunterston B was taken offline as 370 cracks had been identified in the graphite bricks that make up the core. SM commented that EDF have suggested they will request that the number of cracks permitted be increased to 700 in the new safety case. He asked if ONR could accept this.
- 3.3. DU emphasised that decisions regarding restart of reactors 3 and 4 at Hunterston B would be based on evidence and facts. DU was clear that reactors would only return to service if ONR was satisfied that it was safe to do so. DU advised that ONR had not come under any pressure from EDF to speed up assessments, and noted that EDF have behaved commendably to date. DU explained that it's not only the number of cracks that ONR needs to consider when assessing the safety cases, but also the stability of the core structure. Therefore location and type of crack, and the extent to which they may open, which could exert pressure on other bricks, are taken into consideration.
- 3.4. IR raised the issue of graphite weight loss.
- 3.5. DU explained that the number of cracks was not always the issue, but how they affect and impact on the geometry of the reactor core. DU acknowledged that graphite weight loss was also an age related factor, but advised that in the case of Hunterston B, the life limiting factor is likely to be graphite cracks.
- 3.6. RH asked if EDF was using the Hunterston B safety cases to see how long they could operate other reactors for.
- 3.7. DU reiterated that ONR would base decisions on the evidence and facts, and would not allow reactors to return to service if we did not consider it would be safe to do so.
- 3.8. MF confirmed that ONR will seek to engage more with the local community on graphite when decisions have been reached regarding future operation of the Hunterston B reactors and suggested that, subject to the approval of the Site Stakeholder Group (SSG) chair, ONR would do this via the Hunterston SSG meeting.
- 3.9. RH asked for clarification on the seismic simulation modelling and DL also commented that as ONR had been surprised with the rate of cracking, whether there was an issue with EDF's modelling.
- 3.10. MF clarified the point regarding the seismic simulation modelling. DU explained that EDF's modelling gives a range of approximate outcomes and advised that EDF were reviewing their modelling.



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Action 19.09 – ONR to arrange a webinar to allow more detailed discussion on graphite cracking.

- 3.11. David Cullen (DC) commented that the Permanent Secretary at the MoD had said that construction of replacement facility at Aldermaston (known as the “ATC”) had been delayed because construction had commenced when the design of the facility was only ‘10% mature’. DC asked for ONR’s view on learning from this.
- 3.12. AK advised that all senior leaders across government and arm’s length bodies are subject to lessons learned, but felt this particular question was probably more appropriate for the MoD. MF added that AWE need to move into modern facilities and that there were a number of factors that have contributed to delays in delivering the ATC replacement facility.
- 3.13. PBurt asked if AWE were planning more major projects and asked if the ‘Pegasus’ project would still go ahead.
- 3.14. DU confirmed that AWE have a new principal contractor and have strong project management in place, so we have reasonable confidence as the regulator. DU and MF confirmed they were not aware of ‘Pegasus’ being cancelled.
- 3.15. PBurt also asked if AWE was to begin looking at replacement for the Trident warhead.
- 3.16. DU advised that ONR was not engaged in any discussions on this matter, but if any activities on a site gave rise to safety points for current facilities, then we would engage .
- 3.17. DC asked if the failures involving cranes at DRDL were mechanical or organisational and requested information on what the cranes move.
- 3.18. DU advised that ONR is currently conducting a formal investigation into the matter. He added that the incidents in question were not related to nuclear safety and that the cranes do not move nuclear fuel.
- 3.19. PBurt commented that he is pleased ONR is looking at the submarine dismantling programme, and expressed surprise that MoD wanted to consult again on this. PBurt also noted that neither DRDL nor AWE allow NGOs to attend their Local Liaison Committee meetings.
- 3.20. MF confirmed that ONR is working with the Safety Directors Forum to look at how sites engage with local communities and advised that ONR would continue to do this. AK added that ONR has sympathy with NGOs on this matter and confirmed that ONR would continue to seek progress to address this issue.
- 3.21. NC asked if the corrosion issues at Dungeness B were to do with sea water ingress.



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3.22. DU advised that there is a high chlorine concentration due to the local environment. He confirmed that EDF have made good progress with replacing pipework.

4. Update on revised REPPiR legislation and Approved Code of Practice

4.1. Dr Anthony Hart (AH), Deputy Chief Inspector and ONR's Technical Director, delivered a presentation covering the following areas: Basic Safety Standards Directive (BSSD) implementation; REPPiR 2019; the ACoP and outlining ONR's role in land use planning around nuclear sites.

4.2. AH set out the latest position regarding the implementation of the REPPiR 2019 regulations, confirming that the regulations place duties on both operators and local authorities to put in place plans to cater for potential radiation emergencies. AH confirmed that the consultation on the ACoP is expected to commence shortly. AH addressed some of the specific concerns of the NGOs regarding compliance with the REPPiR 2019 regulations, and outlined the enforcement powers available to ONR to hold local authorities and operators to account under the new regulations.

4.3. IR expressed concern at the reasons why the UK has chosen to exit Euratom, and the risk that without membership, standards could be changed in the regulations.

4.4. AH noted that while leaving Euratom is a matter for the government, the UK has a long history of leading the world in standards of nuclear safety, and this will not change. Katie Day (KD) added that leaving Euratom would not prevent UK from influencing international standards. MF confirmed that there are a number of peer review processes and that global pressure would be applied to the UK if we were found to be non-compliant.

4.5. DL commented that the credibility of the regulations is predicated on understanding the dangers of radioactivity. He advised he remains concerned that those in charge of setting radiological protection standards don't accept that the models for risk/dose could be wrong and the impact/risk is therefore not estimated correctly.

4.6. AH advised that ONR's focus is on preventing any release of radiation and that is why we require operators to have defence in depth. The prevention required is not affected by the uncertainties that some suggest in regard to the dangers of radiation. He added that the regulations required a detailed planning zone and an outline planning zone to cater for unforeseen events. The scenarios that are subject to detailed planning apply significant conservatism in the analysis that more than offset the suggested uncertainties in the risks from radiation. AK noted that we had discussed this matter before at a previous NGO Forum.



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- 4.7. DC asked to what extent does the new guidance account for “public chaos” and if this is modelled.
- 4.8. AH confirmed that ONR would be looking for local authorities to demonstrate in their plans how they would deal with various scenarios (how they might happen, the types of measures needed) in the event their plan needed to be deployed. This would include the practicability of the plan – i.e. providing assurance that it could be delivered.
- 4.9. KA advised that she has tried to obtain details from her local authority about emergency evacuation and accessibility to potassium iodide tablets, but has been unable to do so.

Action 19.10 – KA to provide further details to KD following her unsuccessful request to obtain information from her local authority on potassium iodide tablet accessibility and emergency evacuation procedures.

- 4.10. SM raised an issue regarding local authorities having a political dimension, and the risk of a perceived closer relationship with operators. He also expressed concern about the financial pressures on local authorities and their capacity and capability to meet the new regulations.
- 4.11. AH advised that under the new regulations, ONR will regulate those who set emergency zones, as opposed to being the body that sets them – giving greater separation and independence. He confirmed that whether local authorities could meet the additional costs would be a matter for government, but advised that ONR would be working with local authorities to help them understand and implement the new regulations.
- 4.12. In the discussion around land use planning, DL expressed a view that proponents of small modular reactors (SMRs) may like to put them next to centres of population and asked what impact that would have on emergency planning zones. CW also noted the increase in population around Sizewell at certain times of the year with tourists and asked if this would need to be taken into account. AH confirmed that this would fall under discretionary criteria for land use planning. Normally plans look at what is required for residents.
- 4.13. TJ asked how REPPIR impacted on the movement of materials, citing as an example, the movement of materials from Dounreay to Sellafield which pass through a number of local authorities.
- 4.14. AH confirmed that the REPPIR regulations only relate to sites. He advised however that the movement of materials is covered by the Carriage of Dangerous Goods (CDG) regulations, which have recently been updated to reflect new emergency planning arrangements to implement the BSSD. AH confirmed that ONR would issue guidance on these amended regulations soon.



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5. ONR Strategic Plan 2020 – 2025

- 5.1. Katie Day, ONR Director of Policy & Communications, introduced this session by explaining that we are starting work on our 2020-2025 strategy. KD advised that as part of our engagement to shape the strategy, we are keen to seek the views of NGOs and invited each table to consider three questions: What is working well that we should keep doing? What do you think ONR's top regulatory priorities should be in the 2020s? What needs further thought?
- 5.2. After 30 minutes of discussions, each table fed back their responses to the meeting. Feedback from each table (3 in total) was listed on flip charts, which will be fed into ONR's development work. KD confirmed that ONR intends to issue a draft strategy for consultation in the autumn, and plans to publish a consultation response alongside the strategy in March 2020 setting out how the feedback from engagements such as today and other stakeholder feedback has been considered / addressed.

6. Environment Agency's Regulation of Nuclear Sites

- 6.1. Alan McGoff (AM), Environment Agency (EA) New Nuclear Build Lead, delivered a presentation covering the following areas: overview of EA and regulatory responsibilities; permitting process; EA involvement in Generic Design Assessment process; role of EA in advising and influencing planning decisions; engagement; and EA and ONR collaboration.
- 6.2. DL asked for further information about the ScienceWise project, which AM referred to when explaining about EA's Communication and Engagement.
- 6.3. AM explained that ScienceWise was set up to support public understanding of science. He said that the reports that they had developed looking at improving engagement in GDA were good and applicable much more generally than just GDA.
- 6.4. DL requested clarification on who had made the decision to authorise the 'mud dumping' from the Hinkley Site off the coast of Wales, and asked if EA had provided permits to do this.
- 6.5. AM confirmed that Natural Resources Wales (NRW) was the organisation who provided permission for these disposals to take place. MF added that the mud was analysed prior to it being disposed and the levels of radiation were well below any level that would pose public safety concerns.
- 6.6. DL expressed a view that the mud had not been tested for all forms of radiation and that he felt the public had been hugely let down by the regulators on this matter.
- 6.7. AM reiterated that he was aware of NGOs views but that this was a matter for NRW and that he could not comment further.

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- 6.8. CW commented on the massive carbon footprint associated with nuclear new build and asked if this came under EA vires.
- 6.9. AM confirmed that EA do input into energy policy as do others, but the decision maker on UK energy policy is the Department for Business, Energy and Industrial Strategy. He said that his understanding is that the carbon footprint for nuclear power was broadly similar to other low carbon sources, such as solar and wind. He noted that the Parliamentary Office for Science has produced a note on this in the past.
- 6.10. DL disputed this and suggested that not all carbon emissions were taken into account as part of the studies.
- 6.11. Alan Jeffrey (AJ) commented that two thirds of heat produced from nuclear power is lost and placed back into the environment as thermal energy. IR also noted that research suggests the contribution of emissions from nuclear power stations to climate change is reasonably significant.
- 6.12. AM confirmed that modelling looks at impacts of thermal energy being placed into the environment, including the dispersion of heat. The need to dispose of the heat arose from the use of the steam cycle to generate electricity and it was the same for other thermal power stations.
- 6.13. RDS commented about the geological disposal programme noting that with regards to 'deep bore' drilling the EA only appear to get involved in the process once permits are required, and asked if EA should be involved earlier on in the process.
- 6.14. AM confirmed that EA will be involved throughout explaining their role to interested parties. From a regulatory perspective environmental permits must be applied for and obtained from EA before exploratory bore holes are undertaken. This was a significant improvement as previously permits were only required at the operational stage. He expected that there would be a need for significant pre-application discussions and additionally EA will be a consultee in the planning process, so will be involved throughout.
- 6.15. DC advised that he had responded to the consultation, which concerned an increase to AWE permit levels. He commented that he found the process unsatisfactory and was concerned that the eventual decision contravened regulations due to its 'national significance', and asked how EA could therefore regulate defence sites.
- 6.16. AM advised that the EA team would have required AWE to demonstrate that they would use 'Best Available Techniques' (BAT) process to minimise discharges and their impact. .

7. Summary and close

- 7.1. AK closed the meeting by thanking all NGO representatives for taking the time to attend the meeting, which she hoped they had found useful and

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productive. AK reminded representatives that the next meeting would take place on 7 November 2019 and invited NGOs to consider where they would like to hold the next meeting. She also noted thanks to Charles (“Chuck”) Johnson for observing the meeting and reminded NGOs that if they had any further questions to provide them direct to contact@onr.gov.uk