Unite the union response to Environment Agency's 'Geological Disposal Facilities for Solid Radioactive Waste: Staged Regulation Guidance' Consultation.

1. Introduction

1.1. This submission is made by Unite, the UK's largest trade union with over one million members across all sectors of the economy, including manufacturing, financial services, transport, food, agriculture, construction, energy, utilities, information technology, service industries, health, local government and the not-for-profit sector. Unite also organises in the community, enabling those who are not in employment to be part of our union.

1.2. Of particular interest to this consultation Unite represents over 32,000 members in the Energy & Utilities sector many of whom are employed directly in energy generation, with over 1.3 million members who are customers in every nation of Great Britain.

1.3. Unite has been very critical of the actions of past governments over the planning for energy security in the United Kingdom. The use of fuel rod reprocessing for example without any plans to replace it with another facility to reduce the amount of high-level waste materials from fuel rods by 90% and at the same time provide the UK with greater security of supply. Unite has been especially critical of :-

- the long delays in the decisions around the stocks of plutonium.
- delays securing jobs for UK workers in the fuel rod supply chain.
- delays in planning and construction of new power stations
- of the grid connections and wires to distribute that capacity to the rest of the UK.
- and finally, the plans for high level waste storage.

1.4. Unite policy position calls for a two-stage level of geological storage with general high-level waste stored in sealed vessels that hopefully over the course of geological time will not degrade together with an accessible store of spent fuel rods which could provide the UK with a store of new fuel if the nation went back to reprocessing. Doing so would allow the UK to have greater energy security in the very long term. If we simply encapsulate every high-level source of radiation we would make us a hostage to the fortunes of other nuclear material providers. Unite members feel that following this policy would provide the opportunity to more closely monitor these materials and act if required.

2. Consultation Questions

1. Is the document clear and easy to read?

2.1. Unite believes that the document was clear and concise, was informative and had a clear purpose.

2. Are there any inconsistencies in the guidance?

2.2. Unite believes that a shallow disposal facility is not a solution to high-level waste storage but would only be useful for the management of spent fuel rods, thus providing additional or replacement storage to the ponds that are currently used which are fast reaching capacity.

2.3. Unite would argue that there needs to be a long-term solution to store the high-level liquid waste from the nuclear fuel cycle and in research and medical facilities. While the Vitrification of this waste in blocks of glass in a stainless-steel container effectively turns the liquid into a solid form, these require close monitoring while they cool before further encapsulation, transport and disposal.

2.4. Due to the nature of these vitrified liquids, Unite believes that transport should be conducted over the shortest distance possible from its current home in Cumbria, for security and practicality reasons.

3. Are the stages set out in the guidance clear and do they cover all the areas that should be addressed?

2.5. Unite has been calling for a 'graded approach' for more than two decades yet nothing has been done to progress this process to ensure that the number of skilled staff that are currently experienced in working with these materials do not depart from the industry when the power generation side of the nuclear industry or site decommissioning, without a defined career path going forward that retained those skills. Without that Just Transition[1] the sector will be put back years as new recruits are taken onboard without the benefit of the experience of those that were there before.

2.6. Unite feels that there is a distinct lack of thought given to the access to the skilled workers which will be required to work within such a facility.

2.7. The Nuclear power sector has lacked any new facilities since the opening of Sizewell B in 1995 and during the intervening three decades the workforce has not been getting any younger. In the intervening period skills have been lost to the annals of time and have had to be rediscovered ahead of the opening of Hinkley Point C that hopefully will open before the ever-diminishing number of stations can no longer continue generation. Already many stations are working beyond their designed lifespans. In such an environment what school or university leaver would look at the British nuclear industry as a long-term career path, knowing that the government of the day only wishes to kick the often-unpopular decision into the long grass.

4. Is the scope of our regulation of the surface-based intrusive investigation stage clear and does it cover all areas that should be addressed?

2.8. Unite believes that it does not look as deeply as it should at the provision of skilled knowledgeable staff, as outlined above.

2.9. At the moment there are several nuclear facilities that are undergoing nuclear decommissioning, several of these sites still host spent fuel rods as the ponds in Sellafield are full. The Thermal Oxide Reprocessing Plant (THORP) at Sellafield, UK, stopped

[1] There have been efforts by some nations with poor human rights records to alter the original definition as used in discussions for the 2015 Paris climate change talks. The United Nations, International Labour Organisation still believe the term "Just Transition" means ***"Promoting environmentally sustainable economies in a way that is fair and inclusive to everyone concerned – workers, enterprises and communities – by creating decent work opportunities and leaving no one behind".*** This maximizes the social and economic opportunities of climate and environmental action, while minimizing and carefully managing any challenges, including through effective social dialogue and stakeholder engagement and respect for the fundamental principles and rights at work.

reprocessing nuclear fuel in November 2018 meaning that currently 90% of perfectly good fissile materials are left in fuel rods to be buried as waste.

2.10. There are reprocessing facilities left in La Hague[2], in India[3], Russia[4] or Japan but overcoming the logistical issues of spent fuel shipment are currently too great to seriously consider. None the less the inclusion of 'Retrievability' as one of the criteria for the Evaluation Considerations for the Siting Factor - Engineering Feasibility is welcome as it does not totally close the door on reprocessing.

5. Do you agree with our proposed approach to permitting the sites for drilling boreholes during the surface-based intrusive investigations stage?

2.11. Unite agrees that the only way to know for sure is to drill test boreholes as only so much can be ascertained from seismic readings and assumptions based of other locations. Unite would argue, however, that sites need to be made good after the tests have concluded in each location so that nobody would realise that the site had undergone such work. Unite would like guarantees that this will be in marked contrast to the lack of enforcement of a similar position to return to the way it looked prior, that occurred when test fracking site boreholes were dug in the past.

6. Is our approach to regulating the initial and subsequent borehole drilling activities during the surface-based intrusive investigations stage clear and fit for purpose?

2.12. Unite believes that the approach as set out is clear and fit for the purpose outlined, however, it does not investigate the potential of such a location for a full Geological Disposal Facility (GDF) rather than just one to act as a stop gap until such a proper GDF is constructed.

7. Is it clear which construction activities we would permit during the underground investigations stage?

2.13. Unite feels that the consultation activities provided, list of permitted construction activities undertaken during the investigations stage before a borehole is attempted, but these are all based around the facilities that could be constructed on the surface before the evaluation of the geography are attempted. Unite would argue that this approach is backwards.

2.14. Unite would caution not to omit any new technique which could save money, time or cost or improve health and safety developed after the consultation closes. Atomic Dielectric Resonance (ADR) technology can achieve depth penetration of several hundred meters, depending on the geology and the specific application, allowing it to image subsurface features at significant depths, often exceeding the capabilities of traditional ground penetrating radar techniques; some sources even claim potential for depths up to 80km

[2] The lifespan of this facility has been extended until at least 2100

[3] There are three locations in India where reprocessing still takes place Trombay, Tarapur, and Kalpakkam. India has been reprocessing spent fuel for over five decades, with significant research and development conducted by the Bhabha Atomic Research Centre (BARC).

[4] Due to the ongoing tensions with Russia due to its invasion of Ukraine the facilities in Ozersk (Mayak) that uses the using the PUREX (purification/extraction) technology are off limits.

below the surface with further development[5]. Unite is not qualified to suggest that this technology will work in every location down to the depths required but if a non-invasive option is possible then that should be used before any surface evaluation or drilling commences. If nothing else, it could potentially provide a better understanding of where to drill and if the efforts to evaluate the surface are worthwhile. ADR is also nonintrusive geophysical survey work but Unite would argue that it is far more important than a drone overflight to map the topography.

8. Is guidance on the supporting information required for permitting each stage clear and does it cover all the areas that should be addressed?

2.15. Unite believes the supporting information laying out the requirements needed for stage permits is clear and understandable. Unite feels that there needs to be financial securities that need to be in place which ensure the funds for restoration work, to be completed after the permissions are surrendered, will take place. This was not always the case following the tests for possible fracked gas supplies[6] and Unite does not wish to see a similar situation happen here

9. Are permit surrender requirements for the investigatory and post-operational stages clear and relevant to each stage?

2.16. Unite does not believe that the surrender requirements are clear and relevant, as stated. They do not go far enough to guarantee the site will be returned to the state it was found in before drilling commenced. There is nothing as far as we could see in the Welsh consultation documents about surrender requirements at all and the phrase 'surrender requirements' only appears once in the consultation document[7],- in this question.

2.17. Unite therefore assumes from what is contained that the reference refers to the surrender of the site in 300 years or so once the facility is filled with high level waste and the site entrance and all surface infrastructure is removed not just any radio active material. Unite would argue, to ensure that the general public is more accepting of the facility, that any equipment for site evaluation is removed and the site returned as soon as is practicable to its previous state.

3. Conclusion

3.1. Unite can understand the need for time taken to ensure that plans are correct and the need to consult at every stage to ensure community engagement but is obviously frustrated with the delay to the construction[8], however. Discussions around the work by the Welsh government culminated in a policy[9] which is dated 2001 and as stated in the consultation was augmented in January 2019 for the disposal of high-level activity

[5] According to claims by the Director/Geoscience Consultant, Paetoro Consulting UK Ltd. Subsurface resource risk, estimation & planning.

[6] Cuadrilla still has not restored the Preston Road near Blackpool facility that was closed after it caused 120 earth tremors.

[7] Disposal facilities for solid radioactive waste: guidance on requirements for authorisation (GRA) November 2024 Draft for consultation

[8] of a deep GDF for high level nuclear waste and facilities to store and hopefully another, in the future, to reprocess spent fuel rods

[9] Welsh policy on implementing geological disposal is set out in three documents: Management and Disposal of Higher Activity Waste , Geological Disposal of Higher Activity Radioactive Waste: Community Engagement and Siting processes and Geological Disposal of Higher Activity Radioactive Waste: Working with Communities

radioactive waste. The last generic Disposal System Safety Case (gDSSC). that was subject to regulatory review and scrutiny was drafted nine years ago. The UK government policy was published in December 2018 on this topic but since then we appear to be no further forward.

3.2. While we wait the storage ponds are not getting any younger nor are the canisters of vitrified liquid waste, fuel rods and other radioactive materials from sectors other than electrical generation. Unite is concerned that by the time a GDF is constructed the current skilled workforce and possibly those now entering apprenticeships now would have long since retired.

3.3. Unite therefore calls on the government to commence these evaluations of potential locations as soon as practicable. This should not be another 30 years or hopefully not even 30 months but very soon after this consultation is completed and results evaluated.

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