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VISIT TO UKAEA DOUNREAY AND MEETING WITH HIGHLAND COUNCIL, 12-14 MARCH 2008

Present

1. David Broughton, Margaret Burns, Brian Clark, Francis Livens, Les Netherton, John Rennilson, Lynda Warren; Adam Scott (secretariat).
2. This was the first visit by Members to a nuclear facility since their appointment in October 2007. It was an opportunity to see how some of the UK's radioactive wastes were generated and managed, and to hear from a range of people and organisations involved in or affected by the process. Their next visits to nuclear facilities would be to Sellafield in Cumbria, and to Sweden and Finland.

Visit to UK Atomic Energy Authority site, Dounreay, 12-13 March

3. Members met UKAEA staff and visited parts of the site including the Dounreay Fast Reactor (DFR), the Prototype Fast Reactor (PFR) and waste management plants.
4. The long-term strategy and "end state". Doug Graham, programme strategy manager, described the development of thinking since the 1990s. (For his detailed presentation, see [annex 1](#).)
5. The establishment of the Nuclear Decommissioning Authority had stimulated opportunities for faster decommissioning. The main targets were now 2032 for completing decommissioning (achievable by 2025 if finance available), 2062 for conditioning and transfer of intermediate level waste to a national geological disposal facility, 2077 for conditioning and transfer of spent fuel, closure of the site and institutional control between 2078 and 2300. Low level radioactive waste will be produced and disposed of at Dounreay throughout the decommissioning and closure programme, on the assumption that the New LLW Disposal Facilities are approved.
6. Issues or questions raised by Members included:
 - how UKAEA could accelerate the process, and constraints to doing so;
 - what wastes, such as ILW, presented special challenges;

- whether the "letter of compliance" regulatory system was still geared to the former Nirex disposal concept;
 - whether assumptions about coastal erosion were being reviewed; and
 - the respective roles of the Highland Council and of the Scottish Government which did not identify Dounreay as a development facility.
7. Some observations from David Broughton:
- This depends on moving intermediate level waste and spent fuel off site to the national disposal facility, i.e. it does not as yet take into account the Scottish Government's strategy of keeping wastes on site in storage. NDA has instructed Dounreay to keep to the original strategy.
 - Only minimal levels of radioactive contamination will be left in-situ on the general site. All major underground facilities will be removed e.g. PFR reactor vault, ILW Wet Silo, effluent pits.
 - Some small amounts of special fuel would not be economic to process at Dounreay but should be considered as part of a national inventory of difficult materials needing a final solution.
 - The strategic plan requires a large amount of infrastructure and equipment to undertake the waste and fuel movements, which the UK has not as a whole geared up for yet.
8. Simon Middlemas, Dounreay's Director, gave a further presentation (see [annex 2](#)). Dounreay's main product now was waste. The smaller neighbouring site, Vulcan, managed by Rolls-Royce for the Ministry of Defence, was mostly self-contained. It received services from the UKAEA side, but in the long term might need to become self-sufficient. He stressed the significant safety culture change that UKAEA had undertaken at Dounreay with positive effects. Although safety, health and care of the environment had been properly addressed and all regulatory requirements adhered to in previous eras of the site, the emphasis had been on the research programmes. Different and more productive relationships with the regulators were now in place.
9. He summarised the major organisational changes around 2005-6 which had been turbulent, but essential. The alliance of UKAEA with CH2MHill and AMEC had been necessary to complement skills in order to compete for managing Dounreay in the future. Significant stakeholder involvement had been introduced in the past 5 years.
10. Issues or questions raised by Members included:
- whether NDA were supportive, and how Dounreay rated against Sellafield in terms of re-organisation and resources;
 - previous attempts at socio-economic development in Caithness, and the need to get the private sector involved;
 - the different and often conflicting needs of different local communities, and the need for effective and representative local leadership;
 - In what circumstances, or organisations regulation was most, or least effective.
11. The waste legacy. Alec Anderson described how this was being dealt with. A key facility, the Dounreay Cementation Plant, was about to be restarted after recovery work had been completed after a spillage 2 years ago. This facility immobilised Materials Test Reactor reprocessing liquids in cement in 500l stainless steel drums which were then stored in 2 shielded vault stores attached to the plant. A recently commissioned Import Export facility could move 200l and 500l drums of waste in and out of the stores either for additional processing or return to customers. Another cementation plant, D3900, was being designed which would

immobilise the PFR reprocessing liquors and store all the remaining treated ILW coming from the decommissioning of Dounreay.

12. The low level waste facilities project. Mike Tait described plans for a new sub-surface disposal facility for up to 175,000 m³ of waste that would eventually arise on site. A copy of his presentation is at annex 3.
13. This project was the most advanced current project in the UK for disposal of LLW. A planning application was with Highland Council which was waiting for a response from SEPA as a statutory consultee. This was expected in June 2008. Considerable stakeholder engagement had been involved from the Best Practicable Environmental Option Study through to detailed layout considerations. The proposed facilities were in accordance with UK and Scottish Governments' strategy for managing LLW. The proposed facilities were for Dounreay site wastes only (which included Vulcan).
14. Points raised in discussion included
 - the need for long term records, including alternatives to current IT systems, and information not only from official records but also from those with direct experience of works.
15. Members observed the strict safety and security procedures that were in place for all employees and visitors at the facilities. Members who had little previous association with nuclear facilities and projects welcomed the opportunity to see at first hand the size and complexity of the Dounreay site, its facilities and the decommissioning work in progress. The enthusiasm and knowledge of all the managers involved in the visits was obvious. The close working with the regulators was explained to Members.
16. Visits to facilities on site. Members visited a number of facilities on site including the Dounreay Fast Reactor, the Prototype Fast Reactor, the intermediate level waste shaft recovery project and the Dounreay Cementation Project for intermediate level waste. We are grateful to Warren Jones, George Sinclair, Andy Swan, Jim McAfferty and other staff who took the time to show us around and explain clearly, patiently and with great enthusiasm what we were seeing. At the recovery project we - especially those who work in offices - noted that staff kept working through all conditions except when waves were actually breaking over their heads. Members' reflections from these and other visits and meetings are summarised below.
17. Thanks are owed to many people at UKAEA including Gemma Macdonald who helped to organise our visit. We are grateful for UKAEA's hospitality including working lunches which they provided on both days.

Meeting with local citizens & organisations, Thurso, 12 March

18. Members met with Herbie and Christine Lyall, Alastair MacDonald, Hamish Pottinger, Steven Pottinger and Ian Webster. The group included a former Highland Councillor and current Dounreay stakeholder group Chairman, a retired UKAEA worker, and local residents and members of Caithness Against Nuclear Dumping, CAND. Members hoped to learn from their experience and views on Dounreay and issues which CoRWM might address in its own work. Lynda Warren summarised CoRWM's current role and emerging programme.
19. Issues and concerns presented to CoRWM included:

- i. Geological disposal: Caithness Against Nuclear Dumping opposed disposal, both generally and specifically in Caithness where the geology was unsuited.
- ii. Low level waste facilities: there was local concern about UKAEA's site selection process, lack of clarity about the decision maker (UKAEA? NDA?) as well as disturbance to local residents and extension of the overall UKAEA "footprint".
- iii. Future of the local community: the nuclear facility had a negative impact on the local economy which also depended on farming, fishing and tourism. Recent attempts at regeneration and job creation had not been very successful. Better transport links were needed especially road and rail. Many young people were leaving.
There was loss of political control, towards Inverness (with the establishment of the Region) and to the Scottish Government which had not clarified its long term policy. There was a prospect of thousands of years of storage and no recognition of the local community's contribution. Even if wastes were removed to another site, there would be concerns about safe transport.
Ambition: no clear picture emerged. There seemed to be too many groups and organisations, and not enough leadership or broadly-agreed vision.
- iv. Decommissioning: recognition of the case for faster clean-up, though this increased the pressure on employment & regeneration.
- v. UKAEA / Dounreay management: seemed to be improving in terms of transparency, and the Dounreay stakeholder group was helping to keep local people informed, but there was still a lot of jargon, and not yet full confidence in UKAEA.
- vi. Records: needed to be taken from people with personal experience, not just from management documents. This could be important for safety &c if staff were going back decades later to retrieve hazardous materials or remediate facilities. Herbie Lyall gave CoRWM a copy of his "Book" (annex 4) which gives his personal recollection of some waste practices that occurred at Dounreay in 1960-1989.
- vii. Competition: concerns that this might lead to further corner cutting, and hope that this would be prevented by ...
- viii. ... regulation: importance of effective controls; there had been some improvement in recent years. SEPA was easier to get information from compared to HSE's Nuclear Installations Inspectorate.
- ix. Local press: could also help hold organisations to account, but had lost some of its bite in recent years.
- x. CoRWM: didn't all agree with its recommendation for disposal, but liked the way it worked with local communities.

Meeting with Dounreay site stakeholders, 13 March

20. Members met with Ian Clark (Staff Union representative) and Ian Webster (local neighbour) on the Dounreay site to learn from their experience and views. Issues presented to CoRWM by Ian Clark included:

- i. Geological disposal: made sense, but was not supported by the Scottish Government, and was unclear whether the local community would accept incentives in any case.
- ii. Decommissioning: NDA resources went mainly to Sellafield, with Dounreay getting just enough to reduce hazards.
- iii. Storage on site: was now the likely future for the wastes, with SEPA and Government opposing transport elsewhere.
- iv. NDA: a difficult relationship especially at national level, some useful dialogue at local level. Its business plan was effectively decided, whatever consultation took place.
- v. Nuclear future: would support new-build both generally (as part of a balanced energy portfolio) and at Dounreay.
- vi. Non-nuclear future: reactor unlikely to be built here, and too remote to compete for other nuclear fabrication contracts, so need to attract new industries to the area. Lots of meetings and initiatives so far, leading to little result. Unions visiting USA to learn from their experience of run-downs. Need better infrastructure including port improvements and ILS at airport. Local unemployment is currently very low, though many of the jobs are in the N Sea.
- vii. Re-organisation: was difficult and a lot of people hurt, but work now being done effectively. Relations with contractors good, and UKAEA considers local staff / firms within the strict NDA and government commercial rules; but some concerns e.g. lower unionisation, and some "parachuting in" of outsiders to take best jobs at management level.
- viii. Regulators: good relations with NII, but minimal contact as yet with SEPA.

Meeting with Highland Regional Council, Inverness, 14 March

21. David Broughton, Brian Clark, John Rennilson and Lynda Warren, accompanied by Adam Scott, met with Councillor Drew Hendry, Chairman of the Planning, Environment & Development Committee; Richard Hartland, Acting Director of Planning & Development; and David Mudie, Team Leader (Development Management) and case officer for Dounreay planning applications. Members summarised CoRWM's current role and plans, some points they had learned from the Dounreay visit, and some issues arising - such as the need for full records including the knowledge of retired staff. They invited the Council's views on current issues and on CoRWM's future role.

22. Issues raised by the Council included:

- some lack of public trust in the nuclear industry: even though much of this reflected past practices, and UKAEA were now more open, public perceptions could change slowly;
- the need for long term economic support for local communities, who (in any scenario) would be hosting waste facilities for many decades; and the responsibility for several bodies to show more pro-active leadership;
- Highland Council previous support for a policy of storage: this was not a solution imposed by the national government;
- importance of Scotland's voice being heard at UK level (even though its Government no longer subscribed to the *Managing radioactive waste safely* disposal programme) and the need for continued effective public engagement by CoRWM.

23. Issues raised by CoRWM included

- the need for the Council, Enterprise Company and others to come up to speed with the implications of a shorter period for decommissioning,
- the risks, including lack of trust in nuclear industry and willingness to disclose problems, eventual cut off of economic support and failure to secure benefits under Structure Plan policy G4, and
- the opportunities, including many years' remaining funding, and availability at Dounreay of business experience and enthusiasm to help the community identify and plan for its long term future.

Conclusion

24. Members' reflections on their visit are set out at [annex 5](#).

25. The visit was intended as a learning event, for Members to develop their understanding of nuclear and radioactive waste processes and issues; and as an opportunity to meet with a range of people and organisations to help inform CoRWM's own emerging work programme.

26. The visit achieved this, and enabled CoRWM to make new contacts and share information which it had acquired during its visit. The Committee is very grateful to the many people in the Highlands who invested time and effort to make this visit productive.

Annexes

1. UKAEA presentation on *Long term waste management at Dounreay and the site's end state* (Doug Graham) - Powerpoint slides
2. UKAEA presentation *Dounreay* (Simon Middlemas) - Powerpoint slides
3. UKAEA presentation on *new low level waste facilities project* (Mike Tait) - Powerpoint slides
4. *Waste disposal at Dounreay 1960-1989*, Hugh Mackay (Herbie) Lyall - 13MB pdf
5. Members' reflections on their visit to Dounreay and Highland Council

Annex 5: Members' reflections on their visit to Dounreay and Highland Council

Observations on Dounreay

1. David Broughton:

- Dounreay is a complex site as it was an experimental facility for developing Fast Reactor technology that included reprocessing. It contains a wide spectrum of wastes in all categories except vitrified HLW.
- The decommissioning programme requires major capital investment for new waste immobilisation plants and waste retrieval plants
- The stores are being designed for 100 years so the current Scottish Government position can be catered for but there is no budget with NDA for rebuilding stores in the future.
- The UKAEA and Dounreay site have invested much effort in enhancing and improving stakeholder engagement with positive results but the continuing problem of radioactive particles being washed ashore at Dounreay and Sandside Bay undermine much of the work that has been achieved. The fact that expert Government bodies say there is insignificant risk to the public from these particles has little effect on public opinion.
- For UK economic reasons the wastes at Dounreay need to be considered as part of the national inventory when deciding on processing routes and storage solutions. One cannot escape the fact that Dounreay is a small version of Sellafield with similar difficult wastes to find solutions for. This is an issue for NDA with the UK and Scottish Governments.
- All support to Dounreay achieving planning permission and authorisation for its new LLW Facilities should be given by interested parties as failure here could have serious knock on effects in the rest of UK.

2. Margaret Burns:

- The future of the Dounreay site and the future of Caithness are intimately bound together. This is clearly recognised by both site management and community leaders.
- Since I last visited Dounreay two or three years ago there has been a real change in atmosphere/morale. It now feels more dynamic, focused. Leadership matters.
- It is important to understand the transport implications of decisions re disposal and/or storage.
- The decision re a community package for Drigg has been noted and has raised expectations. However the community reps we spoke to do not yet have a vision for their community post-decommissioning.
- Both management and staff representatives spoke of good relations with NII – and of developing ones with SEPA.

3. John Rennilson

- Concerns were raised about the future redundancy of IT currently being used and there is still a possible need for hard copy records

Observations following meeting with Highland Council

4. David Broughton:

- We encountered contrasting perceptions of Dounreay.
- From one viewpoint, it had been forced onto the population of Caithness in the 1950s, and if it hadn't, Caithness would be a thriving place now with no prospect of a rundown. From another viewpoint, Caithness was facing decline in the 1950s and Dounreay gave Caithness the most technically

advanced society in the Highlands and training for well over 1,000 apprentices from Orkney and Shetland as well. Caithness had limited options now, as it had in the 1950s, other than UKAEA, when farming, flagstones and fishing were in decline.

- Equally, from one viewpoint we heard that Caithness people had to understand the rest of the Highlands and vice versa. In the former case we heard that neither the Highland Council nor the Scottish Government would support any new nuclear initiatives.