



The Planning
Inspectorate

Report to the Secretary of State for Communities and Local Government

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an Inspector appointed by the Secretary of State for Communities and Local Government

Date: 16 February 2011

APPEAL BY AUGEAN Plc

EAST NORTHANTS RESOURCE MANAGEMENT FACILITY

NORTHAMPTONSHIRE COUNTY COUNCIL

Inquiry held from 26 October until 24 November 2010

East Northants Resource Management Facility, Stamford Road, King's Cliffe PE8 6XX

File Ref: APP/K2800/A/10/2126938

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GLOSSARY

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East Northants Resource Management Facility, Stamford Road, King's Cliffe PE8 6XX

- The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant planning permission.
- The appeal is made by Augean PLC against the decision of Northamptonshire County Council.
- The application Ref 09/00053/WAS, dated 21 July 2009, was refused by a notice dated 25 March 2010.
- The development proposed is the landfill disposal of low level radioactive waste in Phases 4B, 5A and 5B of the currently permitted hazardous waste landfill at the East Northants Resource Management Facility, Northamptonshire.

Summary of Recommendation: The appeal be allowed and planning permission granted subject to conditions.

1. PROCEDURAL AND BACKGROUND MATTERS

Introduction

- 1.1. The inquiry sat for 14 days at the Manor Suite, Holiday Inn, Geddington Road, Corby NN18 8ET: 26-29 October, 2-5 November, 9-12 November and 23 and 24 November 2010. The site visit was on Tuesday 16 November 2010. The decision on the appeal was recovered by the Secretary of State (SoS) on 27 April 2010 because it related to development of "major importance having more than local significance" (Doc AP12).
- 1.2. I am indebted for the appointment of a Programme Officer for the inquiry. Mr Ian Kemp carried out this task most efficiently and was of great assistance in securing the smooth running of the inquiry.
- 1.3. As the lists at the end of this report indicate, numerous documents have been submitted. The prefix letters generally indicate the source of the document. Within this report, I refer to documents simply by their prefix and number; I use 'p' to indicate paragraph, 'pg' for page and 'Appx' for Appendix. A Glossary at the end of the report lists the abbreviations or acronyms used and explains the technical terms where necessary.
- 1.4. A number of serious and explicit criticisms and allegations about bias, criminal behaviour, conspiracy, honesty, competence and deliberate attempts to mislead were made by Dr C Busby, of people and regulatory bodies, both orally and in writing at the inquiry. For the most part, while reporting the substance of his evidence for King's Cliffe Wastewatchers (WW), I have not felt it necessary or appropriate to repeat them.
- 1.5. I take no account of any changes to policy or guidance or indeed any challenges to policy or guidance which might have occurred since the close of the inquiry on 24 November 2010.

Site and Surroundings

- 1.6. The area of Northamptonshire and part of Rutland around the site is attractive countryside, with numerous lovely old villages, each with their own

character, often displaying their strong agricultural roots and with houses of significant age built in cream coloured stone.

- 1.7. The East Northants Resource Management Facility (ENRMF) is an existing hazardous landfill site, one of only 7 in England and Wales that can accept a wide range of hazardous wastes (AUG3.2 p6.2, AUG3.3 Appx1). It lies on the west side of Stamford Road, a two-lane single carriageway which runs south from the A47, along the eastern boundary of the premises to KC. The access road enters the reception area adjacent to and on the south east side of the landfill (PA1 Fig2). South of the entrance is a group of buildings including offices and a well-equipped laboratory, together with a weighbridge and a quarantine area (which can be 'expanded' when necessary). The offices include screens that are linked with the 6 on-site cameras which provide CCTV coverage of the site and the access. The site includes monitoring points for gas, dust and groundwater.
- 1.8. Mounding on the east and part of the southern site boundaries provides screening (OD79 inset plan). There is chain-link fencing on the southern boundary and fencing and a hedgerow on the east side. Other boundaries include gaps in hedgerows. Within the site, a steep slope falls to the north from a ridge of higher land parallel to the northern side of the site. The ridge includes a newly planted hedge and a newt fence (solid plastic and about 40 cm high).
- 1.9. The north west corner of the site includes a surface water management lagoon, gas flare, surface water pumping compound and a soil treatment facility.
- 1.10. There is agricultural land immediately to the west and south of the site and a group of agricultural buildings inset into what would otherwise have been a straight southern site boundary (OD79 inset plan). To the north of the site is dense woodland which also wraps around the field to the west of the site. There are extensive views towards the south from the ridge near the north side of the site, albeit that these views do not include KC, which is hidden by a dip in the land.
- 1.11. In the wood outside the site and near its north west corner is a swallow hole with water running into it and then underground. At Westhay Lodge, to the south of the site (OD79), there is a glass-covered stone lined well beneath a living room floor, to a depth of around 18-19m; water can be seen rippling at the base of the well. In KC – a large and attractive village with a good range of social and community facilities - a significant number of springs flow from the ground (OD79).
- 1.12. Opposite the site, on the east side of Stamford Road, lie Howard's Westhay Farm and the large Howard's Haulage Depot, with their access being off-set by about 50-60m to the south from the site access. There is a terrace of 4 houses – Westhay Cottages – on the east side of Stamford Road to the north of the site access.

Planning History of the Site

- 1.13. The site has been the subject of a number of permissions over about 50 years, the first being for the extraction of clay in 1957 (PA1 pg9/10). Permissions connected with waste have been granted in the last 16 years, most notably a permission in 2006 for hazardous landfill which superseded all previous permissions. The permission (EN/05/1264C) (PA1 AppxA) (which includes the area the subject of this appeal) is for the disposal of up to 249,999 tonnes per annum (tpa) of hazardous waste and inert materials for restoration until 31 August 2013; the site must be restored by this date. Later permissions are for a gas flare, a surface water pumping station and a soil treatment facility (PA1 Appx A-C). The site became a hazardous waste-only landfill from 2004 on the implementation of the Landfill Directive and, because of this, the range of wastes for disposal was restricted to a maximum of 6% total organic carbon – hence no significant biodegradable waste (AUG3.2 p6.5).
- 1.14. Inset Map 31 of the Northants Waste Local Plan (PP9) shows the extent of the landfill site/soil storage which has planning permission hatched black, while Figure 2 of the Environmental Statement (ES) (PA2) shows the site layout and the unused area within the site to the west that would be the subject of any application to extend the area of the landfill.

Statement of Common Ground (SCG)

- 1.15. The SCG (AP2) describes the proposal, the environmental setting of the site and relevant policy and background information. It includes (p8.3) the comment that the only LLW that should be deposited to landfill “should be residual waste that has been determined by the waste producer and the Environment Agency as that which cannot be subject to management measures higher up the waste hierarchy”. And (p8.4, 8.5) that there is a shortage of sites at which LLW can be disposed, that the nuclear decommissioning programme has identified the need for new facilities and that there is no facility in the southern half of the UK which has the necessary permissions to accept LLW wastes.
- 1.16. The adopted (June 2006) NCC Minerals and Waste Development Framework Statement of Community Involvement (PP14) requires a Statement of Local Engagement showing how the applicant has engaged the local community in its proposals. NCC agrees that the community engagement undertaken by Augean satisfies the requirements of the Statement of Community Involvement (AP2 p9.1). Appendix B of the SCG sets out the communication and publicity events undertaken (see also PA1 section 10). SCG Appendix A is the record of complaints at the site from 15 December 2004.

Environmental Statement (ES)

- 1.17. An ES has been submitted (PA2). This is the subject of submissions by NCC that the totality of the project has not been assessed.

The proposal

- 1.18. The proposal is to dispose of Low Level Radioactive Waste (LLW) at the ENRMF in addition to the permitted hazardous waste, until the expiry of the permission on 31 August 2013. The ENRMF is approximately 2.2 km south east of Duddington, 2.5km north of King's Cliffe (which I shall abbreviate to 'KC' from hereon) and 3.3km south south east of Collyweston. The proposed development occupies an area of some 6.07 ha in the south eastern corner of the site, including Phases 4B, 5A and 5B of the current hazardous waste landfill (PA2 Fig2, OD79 Fig 1).
- 1.19. Landfilling operations are complete in Phases 1, 2 and 3 of the landfill; 4A is filled and to be restored; 4B is the current operating cell, it had at the time of the inquiry a capacity of around 100,000 m³ and will be completed in late 2011/early 2012. Cells 5A and 5B are still to be constructed. There is no dispute that these 3 remaining cells are unlikely to be completed by 2013 using hazardous waste; that would take until about 2015-2016.
- 1.20. The LLW to be disposed of at ENRMF typically would comprise construction and demolition waste such as rubble, soils, crushed concrete and metals from the decommissioning of nuclear power plants, buildings and infrastructure, and lightly contaminated miscellaneous wastes from maintenance and monitoring at these facilities, such as plastic and metal and wastes from manufacturing activities, science and research facilities and hospitals where radioactive materials are used. The wastes would be subject to acceptance criteria which would be set in the Environmental Permit (EP), formerly termed an 'Authorisation'. The EP would also cover matters such as packaging, leachate monitoring, radiological monitoring and regulation, site security and so on (AUG3.2 pg22-26, EA9).
- 1.21. LLW comprises radioactive waste with a radioactive content not exceeding 4,000 becquerels per gram (Bq/g) of alpha activity or 12,000 Bq/g of beta or gamma activity. LLW includes waste described as Very Low Level Radioactive Waste (VLLW) which has a radioactivity content up to 4 Bq/g (40Bq/g for tritium) with other limits set for individual loads in some cases. The proposed development is to extend the designated wastes permitted for importation and deposition at the ENRMF to include a subset of LLW comprising waste which has a level of radioactivity of up to 200 Bq/g.
- 1.22. The proposed development would use the current highway access to the ENRMF from the unclassified Stamford Road. The responsibility for transport of the waste would lie with the consignor and carrier, in accordance with regulations for the safe transportation of radioactive waste (AP2 pg11). Waste would be moved on major roads and access the site on Stamford Road from the A47 to the north. Augean states that vehicles would not be allowed to stop overnight other than in authorised sites (AUG3.2 p8.2). The company has appointed a Radiation Protection Adviser (RPA) from the Health Protection Agency (HPA) (AUG3.2 p8.11).
- 1.23. The proposed development would not change the annual volume of waste permitted to be deposited at the site (249,999tpa) or the approved physical features in the current planning permission for the disposal of hazardous

waste at the site (PA1 AppxA). The current operations at the hazardous waste landfill will continue.

- 1.24. The disposal of LLW at the site would not change the footprint of the landfill site, the restoration profile, the restoration proposals, the phasing, the engineered containment, the leachate and gas management infrastructure of the landfill or the surface water management scheme. The landfill operations at the site would cease in 2013 and the site will be restored by 31 August 2013 in accordance with the existing approved scheme, with the site being capped and restored progressively in accordance with the conditions of the current planning permission and the current Environmental Permit. Augean states that, to allow time for capping and restoration, the site would need to cease accepting waste by the end of June 2013 (AUG3.2 p7.16).
- 1.25. Specific personal protective equipment would not be necessary during normal site operations additional to the standard equipment used and worn by workers at the site now. Passive dose meters would be worn by staff working in the site reception and disposal areas to confirm that the exposures were in accordance with the predictions. A site wide radiochemical monitoring scheme would be prepared for approval by the Environment Agency (EA) and the HPA. Radiochemical monitoring of the site leachate, gas emissions, surface water, groundwater and dust would be carried out in accordance with a scheme to be agreed with the EA as part of the Permit.
- 1.26. Detailed procedures including waste pre-acceptance checks, waste acceptance checks and quarantine arrangements for unacceptable waste that may be delivered to the site would be specified in accordance with a radiation protection plan for the site in accordance with the Permit, in order to meet the requirements of the Ionising Radiation Regulations.
- 1.27. The ES provides exposure assessments (PA2 AppxC) for the operational and post operational period, together with the long term period when there would be no management at the site. The assessments - which are based on there being a contaminant source, a receptor (such as a person, water body, ecological system) and a pathway between the two - adopt conservative assumptions. For example, calculations have been carried out of the risks of direct exposure to members of the public for 8 hours a day every day to waste, with the maximum level of radioactivity, at a distance of 50m from the waste, albeit that there are no roads or public rights of way within 50m of the areas where the waste would be unloaded or deposited (AUG2.2 p6.1). Assessments have been carried out for a variety of exposure pathways for normal operations and for unlikely events and accidents (AUG2.2 pg21-32).
- 1.28. Many of the radioactive exposure assessments in the ES use a modified Scotland and Northern Ireland Forum for Environmental Research "SNIFFER" methodology, about which the EA states: "we are content that the modelling has been sufficiently modified to maintain precautionary, pessimistic assumptions in relation to the ENRMF" (AUG2.2 p8.3, EA9 pg37/38).
- 1.29. The EA states in the draft Permit: "Augean's application reflects the principles of BAT for disposal of solid LLW up to 200Bq/g. We have considered the level

of management options and engineering controls submitted by Augean and consider them to represent BAT" (AUG2.2 p3.6, EA9).

- 1.30. The whole of the landfill area is the subject of the Draft EP. EPs continue in force following the cessation of waste acceptance and restoration until, in the opinion of the EA, the site no longer represents a potential risk to the environment. The site is the subject of Financial Provision: a bond provided by the operator for use in the event that the company no longer exists.

Reasons for Refusal

- 1.31. The 4 reasons for refusal dated 25 March 2010 (PA11) are:

1. There is no national level planning policy or guidance nor Development Plan policies at regional or local level that specifically deal with the management or disposal of Low Level Radioactive Waste. In the absence of any such planning policies it is necessary to determine the application on its merits in the light of all the material considerations, and it is considered that these do not justify approval of the application.

2. Policy 1 of the Waste Local Plan (Adopted March 2006) lists the principles which proposals for waste development are required to be consistent with for planning permission to be granted. The proposal is considered to be contrary to Policy 1 of the Waste Local Plan (Adopted March 2006) as the development will not satisfy: the minimisation of, and balance in, the movement of waste across waste planning authority boundaries, except where the development involves specialised provision and is consistent with regional self sufficiency; the minimisation of the transportation of waste from its source; or the Best Practicable Environmental Option for the waste stream.

3. The development as proposed does not represent the Best Available Technique for dealing with Low Level Radioactive Waste disposal.

However, as a result of Augean's request for clarification of this reason for refusal (A4, AP10), it was discussed at the Development Control Committee meeting of 27 July 2010 and, as a result, NCC sought to amend it to read as follows:

3. "There are available disposal techniques for LLW arising that deliver better outcomes than landfill burial as proposed at King's Cliffe, and which would avoid or reduce the perception of harm caused by the application proposal." (NCC5 p9)

4. The perception of potential harm from the proposed development held by a significant number of residents in the local community is a significant material consideration sufficient to justify refusal of the planning application."

- 1.32. Augean informed NCC in June 2010 that it intended to make an application in 2011 for an extension of the site onto adjoining land and to seek to extend the operating life of the site for an additional 13 years until 2026. Augean stated that it intended to apply to the Infrastructure Planning Commission (IPC) for a Development Consent Order in June 2011. Following this, at the

Development Control Committee meeting of 27 July 2010, NCC approved 'additional reasons for refusal', as follows:

a. the application is for piecemeal development of a project that should be the subject to a comprehensive application.

b. the Environmental Statement submitted with the application assessed the application proposal in isolation, whereas it is in reality a part only of a more substantial development: the application cannot be determined without assessment of the cumulative effects of the totality of the project.

c. the Waste Planning Authority is not satisfied that, if planning permission were granted on this application, the proposed operations would be completed, and the site restored, by August 2013 in accordance with the planning permission EN/05/1264C. (NCC5, NCC7.1 pg11-19)

- 1.33. No issue of substance has been taken by Augean on whether 'reasons for refusal' can be amended or added some months after a refusal of permission and after the lodging of an appeal.

Policy and Guidance Background

- 1.34. Policy 1 of the Waste Local Plan (WLP) (PP9) is the only one mentioned in the reasons for refusal. This policy has not been 'saved'. NCC agrees that there is no conflict with any development plan policy or with any policy in the Core Strategy and that policies at national and local level have application to LLW even without specific policies on LLW. WLP Policy 2, which has been saved, provides that the development of waste management facilities will be permitted on sites identified in the Plan (PP9 Inset Map 31) and shown on the Proposals Map as Main sites, subject to other policies in the Plan. The appeal site is a Main site. Policy 2 will be superseded by the Locations DPD (PP9, PP20, PP15 pg49), which has had its examination and the report is awaited.
- 1.35. The adopted (May 2010) Northamptonshire Minerals and Waste Development Framework Core Strategy (CS) states that the specialist hazardous waste management facility at King's Cliffe is of national significance, being the only one in the East Midlands, East of England, South East and London regions; that the current disposition of such facilities is leading to an undersupply and that the focus of the Northants facility should be one where its national specialisms in hazardous waste are maintained and it continues to have a regional role (PP15 p6.28). It is proposed to include a policy to cover these matters in the Control and Management of Development DPD (PP32) and "At the same time, and in the same context, the issue of the management of radioactive waste will be addressed" (PP15 p6.29). CS Policy CS1 seeks the provision of facilities for, among other things, the management of hazardous waste of 72,000 and 82,000 tonnes per annum for 2016 and 2026 respectively (PP15 pg30). Table CS4 sets out a summary of hazardous waste arisings (PP15 pg29).
- 1.36. The emerging (August 2010) Northamptonshire Minerals and Waste Development Framework Control and Management of Development DPD states that the county has the potential to become a waste hub but "it is not

considered appropriateto take on the role as a key sub-national catchment for waste management facilities (PP32 p3.6). "The development of facilities with a national or regional catchment area in Northamptonshire are only considered appropriate where these would be of a specialised nature; specifically relating to the type of waste to be managed..." (PP32 p3.12). "Where the facility is one of only very few of its type nationally (on the basis of its specialist role), either planned or existing, then a national catchment...would be considered appropriate" (PP32 p3.13).

- 1.37. The emerging (March 2010) Northamptonshire Minerals and Waste Development Framework Locations for Waste Development DPD assessed each site to see if it was appropriate for a waste management use or for its temporary permission to be made permanent (PP20 p3.18). The appeal site is not listed in this DPD.
- 1.38. Government (Defra 2007) Policy for the Long Term Management of Solid Low Level Radioactive Waste in the UK "applies to ...waste disposal facility operators (and) planning authorities" (PP2 p2); "The key aim isto provide a high level framework within which individual LLW management decisions can be taken flexibly to ensure safe, environmentally-acceptable and cost-effective management solutions..... (p3), with plans to be prepared by the waste producers (pg7), using a risk-informed approach, where "a representative member of the potentially exposed group at greatest risk should be consistent with a risk target of 10^{-6} per year (i.e. one in a million per year)" (pg7/8). Disposal to an appropriately engineered facility "with no intent to retrieve should be the end point for LLW that remains following the application of the waste hierarchy...(and) Government sees no reason to preclude controlled burial of radioactive waste from nuclear sites from the list of options to be considered..." (p19). There is also a presumption towards early solutions, albeit that these do not necessarily equate with early disposal (p22). Although the "desire to avoid excessive transportation of materials is an important consideration, it must be balanced with all other relevant factors on a case by case basis" (p23). Principles are set out for consultation and public involvement (P26/27). Communities should take greater responsibility for how they deal with non-nuclear industry LLW arisings (p36). Annex 1 advises that 'Operational LLW' is principally lightly contaminated miscellaneous waste arising from maintenance and monitoring, such as plastic, paper and metal. 'Decommissioning LLW' is mainly soil, building materials and metal plant and equipment (pg16). (see also report sections starting at p2.68 and 3.18)
- 1.39. The UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry, prepared by the Nuclear Decommissioning Authority (NDA) (NS17) was approved by the Government in August 2010 (NS17A). It seeks to reflect and implement Government Policy (NS17 pg1) and confirms that for LLW that still requires disposal following application of the waste hierarchy, disposal to landfill by means of controlled burial may also be considered, subject to the necessary safety assessments. Alternative disposal options include "the use of existing landfill sites" (NS17 pg26) (See also report sections starting at 2.87 and 3.22).

- 1.40. The UK Nuclear Industry LLW Management Plan (NS15) (December 2009) was prepared under the auspices of the NDA by the Low Level Waste Repository Ltd (LLWR). It confirms that making the best use of the Drigg LLWR "is critical to the continued availability of LLW management capacity and capability....Capacity at the site is limited.....it is important that only wastes that require engineered multi-barrier containment are consigned to the site. Other appropriate waste routes must be used for candidate wastes diverted from LLWR in the future" (NS15 pg16). Policy WD1 (pg60) deals with exempt wastes, but Augean states that these would not go to the ENRMF; WD2 seeks alternative routes for VLLW disposal, and WD3 and WD4 deal with on-site/near-site disposal of VLLW and LLW respectively (pg60-62). Appendix 4 confirms that none of these policies had made any progress (pg113).
- 1.41. The July 2010 UK Strategy for the Management of Solid LLW from the Non-Nuclear Industry (NS18) was said in the Executive Summary to be the "UK strategy". However, the Executive Summary of the subsequent October 2010 version (NS18A) is, confusingly, only the "first phase in the development of a draft Strategy", while the Summary (pg26) contradicts this in stating that "This document is the UK strategy...". The draft Strategy, if it is a draft, provides information to "demonstrate the need for the continued availability of existing radioactive waste disposal facilities and creation of new facilities"(NS18A pg7). Waste Planning Authorities are advised (pg8, pg16) to take account of non-nuclear radioactive waste in their role as consultees and for the preparation of Local Development Frameworks. Reliance is placed on the waste hierarchy (pg17), the proximity principle (pg18/19), Localism and the Big Society (pg20) and, in the Supplementary Information, comparisons are made with natural sources of radiation and other risks (pg30/31, pg72-74). Guidance is given on making planning decisions and on the use of landfill sites for LLW (pg21/22, pg35/36).
- 1.42. The HVLA Waste Public Consultation at UKAEA, Harwell Final Recommendation (February 2007) is that the following 3 top ranked options are potential BPEO approaches: Option ON2 New Engineered Disposal on-site – near surface; Option ON3 New Engineered Disposal on-site – near surface – preceded by storage period; Option OFF3 Landfill Disposal off-site to Existing Landfill. The final recommendation was ON3, a new near-surface facility on the Harwell site but, should ON3 not be pursued, OFF3 "is the next best approach, particularly if the landfill is close to the Harwell site" (OD66). The paper states that the national consultation on low level waste policy had not been concluded. The first update was in May 2007 (OD55). Another is dated May 2010 (OD56).

S106 Agreement

- 1.43. A S106 Agreement was signed by NCC and Augean on 5 November 2010 (PA9). This provides for the payment of £5 to NCC for immediate deposit in the Community Fund for each tonne of LLW accepted at the ENRMF. It would allow for the payment of staff, which is not permitted by the Landfill Tax.

Draft Environmental Permit

- 1.44. The design and construction of the site, as described in the ES (PA2 pg16), is in accordance with the Landfill Directive 1999 (INT11). Under the Integrated Pollution Prevention Control Directive 2008, landfill sites must be designed and operated in accordance with "Best Available Techniques" or BAT (INT12 Art9 p4). The Landfill Directive defines BAT for landfill facilities. Landfill Regulations 1999 are implemented in England and Wales and the pollution control aspects of landfill development are regulated by the EA under the Environmental Permitting Regulations 2010 (UK3). A landfill may not be operated unless it is the subject of a valid Environmental Permit (EP) and the EA cannot issue a Permit unless it is satisfied that the landfill will not result in pollution of the environment or harm to human health and it meets the requirements of BAT. The hazardous landfill at ENRMF is the subject of an EP; hence the EA is satisfied that the landfill meets the requirements of BAT for hazardous landfill.
- 1.45. The site is operated on the principle of containment; it is lined with an engineered barrier to contain contaminants within the site (AP2 pg6 p3.7). The base of the landfill is lined with 1.5m of clay with a permeability of 6.9×10^{-11} (AUG3.2 p6.7). The landfill is operated in a series of cells which are progressively filled, capped and restored (AUG3.2 p6.8 inc cap design diagram). Leachate removed from the landfill is now used on site as a substitute for water in the soils stabilisation process.
- 1.46. Augean is required under the Radioactive Substances Act 1993, now superseded by the Environmental Permitting Regulations 2010, to apply for an EP from the EA (UK12, UK3). That application was made in July 2009 (PA2 AppxC). The EA extended its statutory consultation to include King's Cliffe Parish Council and Wastewatchers and, on 19 February 2010, it issued an Explanatory Document and Draft Environmental Permit (EA9), making clear that it is minded to grant the Permit subject to further consultation. The further consultation included the statutory consultees and a press release with an invitation to the community to comment. The Explanatory Document includes a detailed response to each of the queries raised in the initial consultation to the application, including KC Parish Council and Wastewatchers.
- 1.47. The EA's Radioactive Substances Regulation: Assessment of Best Available Techniques (BAT) includes its definition of BAT and the relevant considerations in the determination of BAT (EA13). The EA considers the site an appropriate facility for the disposal of LLW up to 200Bq/g. It has assessed all aspects of the proposed development, including the design, construction, operations, management, monitoring and aftercare proposals and has scrutinised the radiological exposure assessments to ensure that it would meet all the relevant regulatory and environmental principles in the legislation, in guidance documents and enshrined in BAT. Other regulatory agencies - the Primary Care Trust, the Health Protection Agency, the Health and Safety Executive, and the Food Standards Agency - have assessed the proposals and also have no objections to them (AUG2.2 p8.11-9.6).

- 1.48. Article 37 of the Euratom Treaty of 25 March 1957 (INT5) requires that the Commission of the European Communities must be provided with general data relating to any plan for the disposal of radioactive waste to assess the potential for impacts on adjoining member states before such disposal is authorised by the competent authorities of the Member State concerned. Augean has provided the requisite information to the Department of Energy and Climate Change (DECC) which, on behalf of the UK Government, submitted it to the Commission in May 2010 (OD4). It is anticipated that the Commission will approve the information in November 2010. The EA will not issue the Permit until the Article 37 approval is received (AUG3.2 p7.12).

Pre-Inquiry Meeting (PIM)

- 1.49. A PIM was held on 22 July 2010. The then Inspector (who was subsequently unable to hold the inquiry for medical reasons) declared the main considerations of the inquiry to be:
- (a) Whether the proposal represents, in
 - locational terms, with regard to the transportation of waste;
 - technical terms, with regard to the proposed methods of management
 - environmental terms, with regard to environmental impact of the proposal;
 - policy terms, with regard to national policy and guidance, development plan policy, and any other relevant policy and guidance documents;
 - an appropriate form of sustainable waste management: and
 - (b) to what extent those considerations may be outweighed by such need for the proposed development as may be demonstrated, and/or by any perception of harm as may be experienced by local residents, and/or by any other material considerations.

2. THE CASE FOR AUGEAN plc

The material points are:

The Nature of the Application and the Scope of the Appeal

- 2.1. The appeal concerns an additional waste stream in the 3 remaining cells of a permitted landfill until the expiry of the existing permission in August 2013. If the appeal is allowed and assuming the decision is in mid 2011, there would be approximately 2 years of landfilling LLW. Augean decided in May 2010 – after the preparation of the ES for the current proposal - that it wished to extend the life of the site for hazardous waste until 2026. Although Augean has announced an intention to seek planning permission in mid 2011 to extend the area and duration of landfilling for hazardous waste, and possibly for LLW, that application would be separate from this proposal and would give rise to a very different set of considerations. Augean's intentions in that regard are of no direct relevance to the considerations now before the SoS. The time horizon for the consideration of issues in the present appeal is 2 years.
- 2.2. At the PIM, Augean invited determination of the appeal on the basis of a stand-alone application (AP7) and neither the Inspector who was then to

have held the inquiry nor this Inspector has demurred. In rejecting NCC's request for a comprehensive ES assessing the combined impact of the appeal proposal and the envisaged extension application, the Planning Inspectorate (Pins) ruled (among other things) that the appeal proposal could be dealt with independently of any future proposal for a physical or temporal extension to the currently permitted site (AP13). The SoS is invited to confirm that ruling. Nothing has occurred at this inquiry to lead to a different decision.

- 2.3. NCC raised this argument in a curious manner. It declined to take any point at the PIM but instead raised the matter in a subsequent written submission. When Pins ruled against the argument, NCC did not challenge the legality of the decision and it has since taken part in a 4 week inquiry. It is extraordinary after that participation for NCC to suggest that the SoS cannot validly take a decision on this matter. Had NCC had any real confidence in the argument, it could and should have challenged the ruling before the inquiry began.
- 2.4. Also, it is wrong to suggest (NCC10 p95) that the SoS now has sufficient information on Augean's further application – if that is intended to mean that the Inspectorate did not have sufficient information when it ruled on this matter. No decision has been taken yet on whether a new application would include LLW. Augean's 'IPC application' is simply a notification that an application is to be made, setting out its full potential scope.
- 2.5. The appeal proposal is not piecemeal development or development which can only be properly considered as part of a larger whole, as alleged in NCC's additional reasons for refusal (a) and (b) (NCC5), both of which have been rejected in the Pins' ruling. It is not inevitably part of a more substantial development. If permitted, the development would be implemented regardless of the outcome of any further planning application. There is no cumulative or in-combination situation that would arise between the two proposals, even if any implementation of a subsequent permission occurred prior to the expiry in 2013 of the one now sought, which seems unlikely. In any event, the subsequent application would require assessment of the full effects of the extension to the landfill area and the extension of time for the already permitted area so that any cumulative effects would be considered then. At present, it is not possible to carry out that exercise (AP13(iv)).
- 2.6. There is no question of "getting a foot in the door" if the appeal is allowed (NCC10 pg33/34), given the temporary nature and short timescale of the proposal. If the appeal is allowed, it would neither predicate nor prejudice the outcome of the further application; conversely, if the appeal is dismissed, the further application would still be made. There has been no attempt in NCC's evidence to explain why the appeal proposal represents piecemeal development or why the appeal outcome might prejudice consideration of the extension application. Nor has there been any suggestion that the intended application would have any bearing on how the appeal development, if allowed, would be carried out: in all probability the decision would be known prior to the end of June 2013, when the landfilling would cease to enable the site to be restored by 31/8/13. Any concern that the intended application

might delay completion of landfilling at and restoration of the 3 cells in the appeal proposal is without foundation.

- 2.7. If anything, the additional waste to be landfilled, if the appeal succeeds, would ensure that more of the void space would be filled rather than less. There is no suggestion from the Council that the appellant would hold back inputs of hazardous wastes during the period to 2013 so as to increase the void-space for the more profitable LLW during any extended timescale for landfilling. When the matter was raised by the Inspector with Mr Miles (although not with Dr Wilson, the more appropriate witness to have dealt with it) he explained that it was highly unlikely that Augean would turn away from its core business. [Inspector's note: the appellant's aside in brackets is incorrect as I raised this matter with both witnesses. The response from Mr Miles is as set out above. When I asked Augean's company witness, Dr Wilson, to comment on the effect of the relative profitability per tonne of LLW and hazardous waste with regard to the suggested condition on the amount of LLW to be landfilled, he replied that the profitability would not affect the need for a condition on the amount of LLW, as there is not enough of either, even though the supply of LLW is 'project led'.] It certainly would not make business sense given that there is absolutely no assurance that Augean will be granted permission for any extension of time and it is in its best interests to complete as much of the permitted landfill before the existing permission expires.
- 2.8. NCC relies on the recent case of Brown (OD82, NCC10 pg33/34). However, that case is readily distinguishable on its facts from this appeal proposal. The freight distribution centre (FDC) in question was an integral part of the improvement and upgrading of Carlisle Airport. The S106 Agreement in connection with the permitted FDC committed the developer to carrying out substantial airport improvement works but the ES had only considered the environmental effects of the FDC and had not dealt with the airport works at all or considered the cumulative effects of the development of the FDC and the airport. The Court held that the ES should have assessed the cumulative effects of what was undoubtedly an integral scheme of development. There is no similarity between those facts and the present case. We are dealing here with a different factual position. The Environmental Impact Assessment (EIA) has not been deferred to a later date. The ES for the appeal proposal has been considered. There is no cumulative effect of this proposal with any future one and, in any event, it would be impossible to carry out a cumulative assessment (AP13).
- 2.9. The Court, in distinguishing Davies (OD84) where a new road was to be built regardless of whether a park-and-ride facility the subject of a separate application was permitted, drew attention to the fact that the road would be built irrespective of the outcome of the separate application and was not an integral part of a larger scheme. That is exactly the position in the present case: the appeal proposal will be implemented if permission is granted whatever the outcome of any future application and it is not inevitably part of a larger scheme of development. There is no question here of a developer deliberately slicing up a larger scheme of development into smaller components so as to defeat the objects of the EIA Regulations: the appeal application is separate from the envisaged extension application and each can and should be assessed on its own different merits. NCC quotes from C2/99 p46 on Environmental Assessment (NCC10 p89) but that relates to whether an EIA is required (OD84 p52 and 53).

Scientific Background

- 2.10. Professor Richard Wakeford was instructed by Auegan to address the risks to human health from exposure to low levels of ionising radiation, such as those that may be received as a result of the proposal for the landfill disposal of LLW at KC, and how the framework of radiological protection that operates in the UK controls these risks (AUG4.1-4.4). Radioactivity and ionising radiation are natural physical processes, and exposure to ionising radiation is ubiquitous. People are exposed to radiation from natural and man-made sources, such exposure occurring in the environment, medically and occupationally. For most people, radiation from natural sources accounts for the majority of their exposure to radiation, and the inhalation of radon gas is usually the largest component of this natural background radiation exposure.
- 2.11. WW argues that the radiation at the site would last 'forever'; so will the hazardous waste. WW also suggests that radioactivity can increase over time (KCWW1.2 pg51 p27.5): it cannot. The apparent increase is where knowledge of the deposit is lost in hundreds of years from now and a house is built on it and there occurs a radon concentration within it (e.g. see AUG2.3 AppxE pg18).
- 2.12. Substantial research has been conducted into the adverse health effects that may arise as a consequence of exposure to ionising radiation. The results of this scientific research are regularly reviewed by a number of international and national expert bodies, and their findings are published as comprehensive reports. These are considered by international and national authorities in the context of establishing schemes of radiological protection. The International Commission on Radiological Protection (ICRP) is the principal international body that makes recommendations for radiological protection. The latest ICRP Recommendations were published in 2007. In the UK, the Health Protection Agency (HPA) reviews the ICRP recommendations and other relevant documents in order to make recommendations for a framework of radiological protection to apply in this country.
- 2.13. The central concept in radiological protection is the 'effective dose', which takes into account both the degree of exposure to radiation and the resulting risk to health (AUG4.2 p3.4-3.7). In radiological protection, the risk to health is limited by controlling the effective dose. The effective dose is measured in units of sievert (Sv), but 1 Sv is a large effective dose, so the millisievert (mSv, one-thousandth of a sievert) is more commonly used in radiological protection. (AUG4.3 provides 'Basic scientific and radiological protection concepts underlying the central radiological protection concept of the effective dose'; it includes information on health effects, absorbed dose, equivalent dose and effective dose.)

Exposure to Radiation

- 2.14. Every year in the UK, people receive on average from natural background radiation an effective dose of 2.2 mSv, of which the inhalation of radon accounts for 1.3 mSv (AUG4.2 pg11-16). However, relatively large variations

in the effective dose received from natural background radiation occur, and exposures to radon leading to annual effective doses of 10 mSv and more are recorded. KC is in an area of higher than average radon concentration: the average annual dose from background radiation in Northamptonshire is 3.6 mSv (AUG4.2 p7.7). To this effective dose from natural sources must be added man-made sources, the largest component of which is exposure to radiation for medical reasons, which accounts on average for an annual effective dose in the UK of 0.41 mSv, although certain patients may receive much more than this.

Risk Estimates

- 2.15. Scientific study of the effects of exposure to radiation has determined the level of risk to health that results from a given dose delivered under particular circumstances (e.g. the period over which the dose is received). For the low doses or low dose-rates that are of primary concern to radiological protection, the ICRP has derived appropriate risk coefficients (that is, the risk per unit effective dose) that underlies the Commission's recommended framework of radiological protection:
- for a general population, 5.7% per Sv,
 - for a working population, 4.2% per Sv,
- where these coefficients take into account the seriousness of the health effect (AUG4.2 pg17-24).
- 2.16. On the basis of these risk coefficients, the ICRP has recommended effective dose limits of:
- 20 mSv per year for workers;
 - 1 mSv per year for members of the general public and, in addition,
 - the Commission recommends effective dose constraints to be applied under particular circumstances of exposure, and for members of the public these constraints are ≤ 0.3 mSv.
- Note also that an annual effective dose of 1 mSv is about the lowest dose that can be received anywhere in the world from naturally occurring sources of radiation (AUG4.2 p6.8).
- 2.17. The HPA has advised that the latest ICRP Recommendations do not require changes to the system of radiological protection that operates in the UK. The Agency has recommended an annual effective dose constraint of 0.15 mSv for a member of the public as a result of the land-based disposal of solid radioactive wastes (AUG4.2 pg26-28).

Modelling

- 2.18. The SNIFFER model, about which WW has concerns, is for the land-based disposal of radioactive waste and it has been adapted for use at the ENRMF with hazardous wastes (PA2 AppxC Annex B). It has a huge amount of conservatism built in to allow for uncertainties. The EA is content with its precautionary pessimistic assumptions (EA9 pg37/38 p5.2, 5.3).
- 2.19. WW is also concerned about the use of the Environmental Risk from Ionising Contaminants: Assessment and Management (ERICA) model for wildlife and

ecology. The EA says that the doses would be very low (EA9 pg39 p5.9). It is happy with the ERICA output. There are no better models than the ones used.

Effective Doses and Consequent Risks

- 2.20. The radiation risk assessment that has been conducted to consider the impact of radiation exposure resulting from landfill disposal of low-level radioactive waste at the ENRMF found that the most highly exposed member of the public may receive, under normal operating conditions, an annual effective dose of 0.02 mSv, which is well within the annual effective dose constraint of 0.15 mSv recommended by the HPA (AUG4.2 p7.1-7.7) and is about 1% of the dose (of 2.2 mSv) that we all receive, on average, every year of our lives. Put another way, an effective dose of 0.02 mSv will be received by someone living in the UK, on average, every 3.5 days from natural background radiation – and much less time than this in a house with a high radon concentration. The normal variation in the radiation dose received in the course of everyday life renders impossible the detection of any increased risk arising from doses of a few tens of microSieverts.
- 2.21. Variations in the annual effective dose received from natural sources of radiation can easily exceed 0.02 mSv, sometimes substantially so. It equates with approximately one flight to Australia, depending on matters such as height, route and level of solar activity. Other examples of how such variations can be experienced are: spending some time in buildings in a high radon concentration area (as occurs in parts of Northamptonshire), frequent flights in aircraft and the consumption of certain foodstuffs (AUG4.2 p4.5-4.9, 7.4).
- 2.22. The assessment for a worker at the proposed facility is that he would receive an annual effective dose of less than 1 mSv as a result of such disposal, well within the occupational dose limit of 20 mSv per year (AUG4.2 p7.11).
- 2.23. Dr Busby implies (KCWW2.2 pg47) that the LLW would be spread on the ground and not covered and that each bag or container would have an upper dose limit of 200 Bq/g, so adding the dose limit from 3-4 radionuclides misses the point. All packages accepted would have a maximum dose limit of 10 microSieverts/hour and consignors would be advised of this. Once placed in the ground and covered immediately with at least 30cm of material, surface emissions would be measured to make sure they were not above 2 microSieverts/hour. If the measurement was above this, more cover would be added (PA2 Appx Annex C pg7 p4.1.2).
- 2.24. Mrs Jane Rose (AP15.7) is concerned about deep-rooted plants and burrowing animals. The type of waste would not attract animals and the heavy machinery during operations would inhibit burrowing. There would be a final cap of low permeable material and a deep soil layer. Research shows that tree roots would not penetrate the cap. Burrowing animals like soft material and, in any event, beneath the cap the waste would be containerised which would not be attractive to them.

- 2.25. As to Great Crested Newts, there is an exclusion fence between the site and the woods to the north. Newts from within the planning permission area are being translocated to ponds outside the working area, in accord with licences from Natural England. None of this affects cells within the current appeal and no newts are being removed from the nearby SSSI.
- 2.26. With regard to the concern of Prof Johnson on 'time spans' (AP15.5 pg6), the decay of individual radionuclides has been considered (AUG2.3 AppxE) and, although the period of the EA Permit would be 60 years, this is a rolling 60 years which would be reviewed on a 4 year basis. The period would remain in place indefinitely until the EA decided there was no need for monitoring and no residual risk. The draft Permit sets out the maximum limits for each radionuclide or group of radionuclides (EA9 table on pg19); nevertheless, the risk assessment ignores the proportion allocation and uses the most potent isotope for a worst case assessment.
- 2.27. Gas emissions (AP15.5 pg6) from biodegradation would be unlikely. Nevertheless, the risk assessment has considered them (AUG2.2 p6.6 and pg47), along with tritium and radon. The site has a gas collection system, with gases sucked out by negative pressure. The assessment assumes that a person would be next to the flare on the top of the site for 25% of their time, which would be highly unlikely, yet they would still be below the 0.02mSv level. As with gas, the risk assessment for leachate has very conservative assumptions (PA2 AppxC, AUG2.2 p6.7-6.11, 7.6, 7.7 and pg48-50). Clearly, accidents can occur, which is why the risk assessments take human error into account. No system is failsafe, so they are audited and subject to continual improvement.
- 2.28. As to monitoring, this would start before acceptance of the consignment (AP15.5 pg6, PA2 AppxC pg46 p5.47). Also, as the site is already BAT for hazardous waste and material would need to be contained in a similar way, the exposure pathways and means of control would be similar to those existing now (AP15.5 pg11).
- 2.29. Following closure of the facility, the risk assessment found that, under certain conditions of inadvertent intrusion into the site, a member of the public could receive an effective dose of up to 3 mSv pa (AUG4.2 p7.8-7.9). The HPA has recommended that under the circumstances of inadvertent intrusion into a near-surface solid radioactive waste disposal facility, a more highly exposed member of the public should not receive an annual effective dose in excess of the range from around 3 mSv to around 20 mSv, and that for prolonged exposure the annual effective dose should be towards the lower end of this range – this is also the guidance of the EA. The assessed annual effective dose of 3 mSv that may be received on inadvertent intrusion into the site following its closure would be compatible with the recommendation of the HPA and the EA.
- 2.30. The annual effective dose of 0.02 mSv that may be received by a member of the public during the normal operation of the landfill represents, on applying the ICRP risk coefficient for a serious health effect in the general population of 0.057 per Sv, a risk of around 1:1 million per year, which is an extremely low annual risk (AUG4.2 p7.10). This annual risk is consistent with the risk

requirement of the EA for a person at most risk from near-surface land-based disposal of solid radioactive wastes.

The Public Perception of this Scientific Evidence

2.31. It is inevitable that members of the general public receive much of their information on the health risks of exposure to radiation from the non-specialist mass media. Unfortunately, the impression gained often diverges, sometimes radically, from the view held by the scientific community. This leads to the mistaken, but understandable, perception among the lay public that the risk to health arising from exposure to low-level radiation has been materially underestimated by those bodies responsible for radiological protection. This perception has been reinforced by the campaigning activities of some pressure groups with views that have only a weak basis in scientific evidence.

Conclusions

2.32. Based upon the estimates of the risk of exposure to low levels of ionising radiation that have been made by expert bodies around the world, the assessed annual risk from exposure to radiation as a result of normal operations involving the landfill disposal of low-level radioactive waste at ENRMF would be extremely small. Even under abnormal conditions of inadvertent intrusion after closure of the landfill, the annual risk would still be very low. Inevitably, uncertainties exist in the risk estimates but these cannot realistically be expected to affect the conclusion that the risk to health from the proposed development would be very low.

Other Disposal Sites

2.33. Other disposal sites are referred to by objectors, their main concerns relate to the proposed nature of the containment at ENRMF and whether or not a roofing structure would be present over the operational disposal area (AUG2.2 p8.9, 8.10 and Table 2 pg56-62 provides a comparison of the main features of the ENRMF and the other sites: Dounreay, Morvilliers, El Cabril, Lillyhall, Clifton Marsh and Keekle Head in terms of types of waste, packaging, capacity, design, leachate management etc). The sites take different types of waste, are located in different geographical, geological and hydrogeological environments and have different forms of containment and operations appropriate to their location and waste type. Different climatic conditions necessitate different designs for a facility. All of the operations are assessed by the relevant technical specialists and regulatory authorities as representing BAT in their specific circumstances. Each site design is site specific.

2.34. Of the sites listed above, only Morvilliers in France, the proposed disposal area for 'high volume low activity waste' (HVLA) at Dounreay and Clifton Marsh in Lancashire are designed to accept the type of LLW proposed for the ENRMF. Most of the other sites listed are designed to accept wastes with higher levels of activity than the maximum proposed for ENRMF of 200Bq/g and are not comparable in respect of the design specification. Lillyhall is designed to accept only wastes with a lower level of activity. The engineered

containment for the sites at Morvilliers, Clifton Marsh and ENRMF are similar, comprising low permeability clay and a geosynthetic membrane. At Dounreay, the disposal area is excavated into hard rock and is lined with concrete. It is difficult to construct a physically stable liner of clay and geosynthetic membrane on vertical rock walls. At ENRMF, as at Dounreay, all waste would be containerised, which is not the case at Morvilliers and Clifton Marsh.

- 2.35. At Morvilliers and Dounreay, a steel/PVC shelter or roof is placed over the operational area during waste placement. No shelter is used or proposed at the other sites. The presence of a shelter over the operational area would reduce the volume of leachate generated during the operational period but would not for a very long time afterwards. At Morvilliers and Dounreay, the wastes accepted are all LLW but, at Morvilliers, where not all wastes are containerised, the leachate generated during the operational period will have a higher concentration of radioactive components than at ENRMF where all LLW would be containerised and be deposited with other wastes. The leachate generated at ENRMF during the operational period - when the operational cells at Morvilliers and Dounreay are covered with a shelter - would be extracted and used sustainably in place of clean water in the soil stabilisation plant at the site, incorporated into the residues from the plant and deposited in the landfill. There would be no material benefit resulting from a shelter or roof over the operational cells at ENRMF. These issues are taken into account by the regulatory authorities in their assessment of BAT. Moreover, as a roof would only be in place for a short time, it would have limited potential to affect perceptions.

Prospective Sites

- 2.36. Although the LLW Policy (PP2) has been in place since early 2007, ENRMF is the only new landfill proposal to come forward to address the national need for LLW disposal. Two existing landfill sites at Clifton Marsh, Lancashire and Lillyhall, Cumbria, that have accepted radioactive waste historically have made applications for Environmental Permits (EPs) to continue taking LLW and VLLW respectively. Clifton Marsh has planning permission and the EP is expected in mid 2011. Lillyhall did not need planning permission; a draft EP has been issued and its Article 37 approval [report p1.48 above], which is needed before the Permit can be issued, is due in February 2011.
- 2.37. A planning application for a repository for LLW at Keekle Head has been made to Cumbria County Council but it is understood that the EA and Natural England have fundamental policy objections (AUG3.3 Appx4). RSRL, which is managing decommissioning at Harwell and Winfrith, has actively explored potential off-site options for the disposal of LLW from those sites but the only suitable site to come forward is ENRMF (AUG1.3 AppxC). There may be a number of reasons for this. In 2004, when co-disposal ended, operators had to determine if their sites would become 'hazardous' or 'non-hazardous'. Only a few were designated as hazardous landfills; many in the industry consider them to be a high commercial risk and a long term liability.

- 2.38. Also, major planning applications are costly and involve long lead times of 2-4 years, particularly if they are subject to the appeal process. Applications represent a significant business risk. The current application will cost Augean over £1M. Moreover, development associated with radioactive materials can result in substantial public and media attention resulting in extensive management time, further costs, business interruption and potential damage to business reputation.

NCC's Decision-making Process

- 2.39. The Chairman of the Committee has given evidence to the inquiry and there is a full transcript of the Committee hearing (AP2 AppxC). The SoS clearly attaches significant weight to Officers' recommendations: the Officers' Report is required to be submitted as part of the appeal questionnaire and DCLG Circular 03/2009 (para B20) makes clear that authorities must show, supported by relevant evidence, that they had reasonable grounds for taking a decision contrary to the Officers' recommendation. Where permission is refused, there is a statutory duty for the decision notice to "state clearly and precisely their full reasons for the refusal specifying all policies and proposals in the development plan which are relevant to the decision" (Art 22(1)(c) of the General Development Procedure Order). Those reasons then largely determine the main issues to be dealt with at the subsequent appeal.
- 2.40. The Officers' report (PA12) was thorough and comprehensive. Cllr. Ben Smith, the Committee Chairman, had no criticism of its contents or the approach taken. The recommendation was forthright and unhesitating that permission should be granted (p9.5). Among the many conclusions in the report were: (i) that there was relevant Government policy dealing with the role of planning relating to LLW management which was a material consideration carrying significant weight in this decision (p8.11); (ii) that the proposal was clearly in accord with that Government policy (p8.18 and 9.4); (iii) that the proposal accorded with Policy 1 of the Waste Local Plan (p8.4 and 9.3); (iv) that there was no doubt that the proposed LLW facility would be a specialised facility and therefore justifiable in both a regional and national context and fulfilling a national role (p8.31); (v) that in the short term the site would be the nearest appropriate installation to possible sources of LLW in southern England so that, as a specialised facility, the distance the waste would travel would not be a justified reason to refuse (p8.34); (vi) that the EA had no planning or pollution control concerns and was intending to issue a Permit (p8.41); and (vii) that perceptions of harm cannot be regarded as being based on objective grounds and accordingly would not be a justified reason for refusal.
- 2.41. NCC's evidence has fallen far short of establishing that it was correct to reject the Officers' recommendations. None of its 4 initial reasons for refusal (PA11) or the 3 additional ones (NCC5) has been substantiated in evidence. The suggestion that Augean's intention to seek permission for an extension of landfilling undermined the content of the report is wrong. The basis upon which the appeal proposal was presented to Members (PA12 p4.4 & 8.61) remains appropriate. And although he has been present throughout most of the inquiry, there has been no communication from Mr Watson (who wrote the report) that he has changed his mind on account of this or any other

matter. Therefore, asides to this effect from Mr Aumônier for NCC and from Cllr Heather Smith should be accorded no weight.

- 2.42. The transcript of the Members' debate reveals the true reasons why the application was refused (AP2 AppxC pg42-47). The Members felt that they were ill-equipped to reach a decision on such a technical issue (for example, "too many unknowns" and "we're just amateurs"). The main reason put forward by the Chairman was that the proposal was not BAT/BPEO, as the best option was to treat the waste at source. Other reasons suggested were that policies at a regional and local level did not support the proposal, that it was contrary to the proximity principle and that, linked with the 3000 signatory petition, there were perceived fears. Reasons 3 and 4 on the decision notice correctly reflect the Members' discussion but, as to the first two reasons, Members had not even mentioned national policy or considered whether the proposal involved a specialised provision.
- 2.43. Indeed, the only policy at any level where there was alleged conflict was Waste Local Plan (WLP) policy 1, despite Members' attention having been drawn in the report to many other national, regional and local policies. Cllr Ben Smith for NCC accepted that no other policy had been relied upon in refusing permission or could now be relied upon, especially in circumstances where NCC had written 2 letters to clarify its reasons for refusal (NCC3, NCC4) and submitted a supplementary statement of case (NCC5) and had not in those documents relied upon any other policies. Cllr Smith also confirmed that the lack of any discussion by Members about 'need' for LLW disposal or reliance upon the first bullet point in WLP Policy 1 was because the Committee had accepted the Officers' advice and conclusions on this matter (PA12 p8.20-30). Members were advised that the proposal was justified in need terms on the basis of national need and complied with WLP Policy 1 which contained a requirement to demonstrate need. Moreover, Mr Aumônier's proof was not referred to the Committee for its endorsement of any additional issues that he raised.

Brief Discussion on the Reasons for Refusal

- 2.44. As to **Reason 1**, there is, and was at the time of the decision to refuse permission, the 2007 national Policy on LLW which deals with all aspects of the management of LLW including planning decision-making (PP2 p2 and pg21-22). Members' attention had been drawn to this in the Report and again on the day (AP2 AppxC pg37). NCC has sought to distinguish between national planning policy guidance and national policy offering planning guidance but it is a distinction without a difference.
- 2.45. It was unreasonable for the Committee not to take account of this Government policy statement on LLW. If, as seems to be the case, the policy statement was ignored, the decision was fundamentally flawed and any attempt to balance the merits of the proposal in the light of all material considerations was undermined (AUG6 p15). There is also other national policy on waste, such as PPS10 (PP5) which is relevant.
- 2.46. There are no development plan policies specific to LLW but there are waste policies which deal with all waste types, which do not seek to preclude the

disposal of LLW in the County and which provide a proper context in which to assess the proposed development. The Committee had been deliberately selective in the reliance it placed on certain principles listed in WLP Policy 1. It had not relied on the first two or the final two principles. There is no suggestion by NCC of harm to the environment, human health, natural resources, local amenity or highway safety and hence reliance had not been placed on the last bullet point of the policy. Indeed, NCC accepts that the refusal was not on account of any direct health or safety reasons (NCC6.1 p6.7). The only conflict with policy alleged in the decision was with parts of WLP Policy 1 but this has been replaced by the Core Strategy (PP15) and is no longer part of the development plan.

- 2.47. Reason 1 was unclear on what material considerations the Council had taken into account and why it concluded they did not justify approval. NCC's response to the request for clarification (NCC3) is curious in that, with the exception of the reference to safeguarding the remaining void space for hazardous waste, all the considerations mentioned concern the alleged absence of need, on which the Officers' advice had been accepted by the Members (AUG6 p17). Note the deliberate non-reliance on the first bullet of WLP Policy 1, which required demonstration of a clearly established need to serve local and regional requirements. Further, the Statement of Common Ground (AP2 p8.4) records the agreement that there is a national shortage of LLW disposal sites and a need identified for new facilities for the nuclear decommissioning programme. And the Core Strategy no longer requires need to be demonstrated.
- 2.48. The fact that Northants is not a significant producer of LLW is not the point (NCC3). What is the point, especially given that WLP Policy 1 no longer exists, is that there is an urgent national need for additional disposal options for LLW and the appeal site is the only site in the central and southern parts of the country that would be able to meet this need in the short term. Whilst there is nothing in national policy to support use of this site in preference to other available and appropriate options closer to the source of arisings, no such sites exist and thus the appeal site represents the nearest appropriate installation in these parts of the country; as such, using it to dispose of LLW arising in that catchment would accord with national policy, as well as being consistent with the national role that the site fulfils, albeit in relation to hazardous waste, as recognised in local policy. Further, while the remaining life of the site is short, the appeal proposal would make an important contribution towards meeting the short term need for LLW disposal capacity referred to in the Officers' Report (PA12 p8.30, 8.34) which the Committee accepted.
- 2.49. As to safeguarding the remaining void space for hazardous waste, no concern was raised about this in the Committee debate and it is clearly an afterthought. It is highly unlikely because of the reduced annual inputs, on account of the downturn in the economy, that the void would be filled by mid 2013, as recognised by Mr Aumônier for NCC in his reference to under-used void space (NCC7.1 p5.30, AUG3.3 Appx2, PP15 pg29 table CS4). Cllr Smith accepted that if there was surplus space it would be sensible to make effective use of it.

- 2.50. With regard to **Reason 2**, WLP is no longer part of the development plan. Three of its waste development principles were relied on, the 3rd, 4th and 5th. The 3rd sought to minimise the movement of waste across WPA boundaries and clearly remains a material consideration notwithstanding the demise of the policy. However, it contained an exception for specialised waste provision. As indicated above, the Officers' report gave firm advice that the proposal was a specialised provision for a specialised waste stream similar to hazardous waste and that, therefore, the distance that the waste would travel could not be objectionable. None of the evidence undermined this advice. The 4th principle raises the same point.
- 2.51. The 5th principle required the proposal to represent the BPEO for the waste stream. This was removed as a relevant planning concept by PPS10 (PP6) in 2005. Thus, WLP Policy 1 was inconsistent with national policy. To rely on this issue was contrary to the guidance in PPS10 (p23) to avoid placing requirements on applicants that were inconsistent with its policies (see also PP23 p8.25). BPEO is regarded by the EA as the same as BAT (EA17 p17) and the EA had already confirmed that the proposal represents BAT (EA9 p5.4.3). It was wrong for NCC to have raised this issue under Reason 2 and the separate **Reason 3**; and in the Committee's mind, this was the main reason for refusal.
- 2.52. When pressed, NCC maintained its reliance upon BPEO/BAT (NCC3, NCC4), claiming that there were other techniques for landfill disposal which were more appropriate and environmentally acceptable, particularly to reduce public perceptions of harm. It was only in its supplementary statement of case (NCC5) that the County abandoned its reliance on BAT, recognising that it was primarily a matter for the EA. It recast the third reason for refusal deleting all reference to BAT/BPEO and simply asserting that there were available disposal techniques (i.e. replacing the former reference to landfill disposal techniques in NCC3) that would deliver better outcomes than landfill as proposed at ENRMF, which would also reduce the perception of harm. Uncertainty remains as to what these other techniques and outcomes are but it is significant that NCC apparently recognises that different techniques of managing LLW at this site could reduce the perception of harm.
- 2.53. There is a direct conflict of evidence in NCC's case. Cllr Smith prefers a Drigg or Dounreay type of dry entombment in a highly engineered form of containment (NCC6.1 p6.5 - Inspector's note: this states "in vaults at or adjacent to the decommissioned nuclear site") but Mr Aumônier argues that LLW is not specialised waste, requires no specialist management and can be disposed of in any landfill site able to obtain regulatory approval. Yet the recast reason in the supplementary statement of case advocates a higher degree of containment than that provided at the appeal site. The contention that any landfill with a permit would be suitable for LLW has not been sanctioned by the Committee and is contrary to the basis for the reason for refusal. The Committee's decision cuts across the key aims of the 2007 LLW policy statement to provide flexible, cost-effective management solutions that appropriately reflect the nature of the LLW concerned (PP2 p3) and would preclude a management option which the policy statement (p19) has expressly not precluded. This is taken forward in the NDA UK Strategy (NS17) which

encourages the commercial supply chain to bring forward off-site landfill sites for the disposal of LLW.

- 2.54. As NCC does not challenge the EA's judgement that the proposal represents BAT, there is no explanation how other disposal techniques could produce 'better' outcomes when BPEO/BAT produces the 'best' outcome, the option providing the 'most benefit' or the 'least damage' to the environment. The Council's stance is not justified and indeed is undermined by its evidence from Mr Aumônier.
- 2.55. The suggestion that a temporary roof should be used as at Dounreay is bizarre where NCC does not challenge Mrs Heasman's evidence for Augean that it would provide no material benefit and would give rise to health and safety concerns with achieving adequate ventilation of the enclosure. The management arrangements at Dounreay are different from this site with the operational cell being worked for a much longer period, with the site being below the water table and with there being no leachate management system in place. Any fears would not be allayed by using a temporary roof for a short period. It would be an unnecessary expense of no benefit.
- 2.56. This is not a case where the precautionary principle has any application (PP6 p6). NCC accepts that there would be no unacceptable impacts on human health, ecological interests or the wider environment and the level of scientific agreement within the scientific community (Professor Wakeford and Dr. Denman agree) is such that the radiation risks posed by this development can be assessed with confidence. While Cllr. Smith said there was conflicting scientific information before the Committee, he pointed to the information from NuLeaf but this had nothing to do with radiation risks, it related to their preference for on-site rather than off-site management of LLW.
- 2.57. There are 4 comments at this stage on **Reason 4**, (perception is dealt with below as a discrete topic). Firstly, the Officers give full guidance on the circumstances in which perceived harm could be raised as a reason for refusal, pointing out the need to consider whether there is objective evidence to support the perception (PA12 p8.45-47, AP2 pg39-40).
- 2.58. Secondly, Members were advised that as the perceptions were not based on objective grounds there could not be a justified reason for refusal. The Officers were well aware of the perception-related evidence.
- 2.59. Thirdly, Cllr. Smith attached weight to the amount of opposition to the proposal (NCC6.1 p6.8). As an aside, given the alarmist terms of the head note to the petition, it is perhaps surprising that so *few* people signed it (AP16). The Committee was advised that it was not the number of objections which should be a reason for refusal but whether the objections were based on sound and justifiable planning reasons which could be defended (AP2 pg39, PP21 p27) This is consistent with recent guidance (Circ 3/2009 p B21) and with PPS23 (PP6, PP6A, AUG6 p30). The West Wrattling appeal is a good recent example of this advice being heeded (OD65 p12.16). In Augean's case, the largely silent wider community that would be served could extend to a large part of Southern England; but even looking at the more local

community examined (AUG3.3(12)), the signatories on the petition represent a small minority of the total population.

- 2.60. Fourthly, Mr Aumônier was not presenting evidence on the 4th reason for refusal, which was being covered by Cllr Smith and Professor Kemp (NCC7.1 pg7). Cllr Smith had not attended any of the public meetings or the public exhibition or the open day and was not in the best position, therefore, to gauge the nature and extent of the perceptions other than what he heard at the Committee, for which the transcript reveals that it was the number of signatories on the petition which was perhaps the main factor in his decision to support a perceptions reason for refusal (AP2 pg47). No consideration was given to whether the perceptions were objectively justified. Cllr Smith confirms that the refusal reason was not based on any direct health or safety reasons (NCC6.1 p6.7). The Committee was aware that all the statutory consultees concluded that the proposal would not cause any material harm to human health or the environment. And Dr Denman, the Council's independent expert on radiological risk, had advised that there were no radiation safety issues to prevent the proposal proceeding and that the site could be safely operated within current safety guidance.
- 2.61. As to Prof Kemp, the perception of risk witness for NCC, his evidence is of little value (NCC8.1) to the critical issues of whether the perceptions are material to a planning decision and, if so, what weight is to be attributed to them. His knowledge of the consultation meetings was derived from reading the documentation and discussions with Cllr Smith who himself had not attended any of the consultation meetings. Prof Kemp stated that, although the weight to be attached to perceptions depended in part on whether they in themselves had material effects (p3.2), it was not possible to quantify the effects of perceived risk in this case (p2.2), he merely described them and stated that it was not his role to say how the perceptions should be weighed (AUG6 p32). His main contention on the weight to be attached to perceptions was not about their being objectively justified but whether they were genuine and had material effects (3.2). However, genuineness has little to do with whether fears are objectively based and the materiality of effects relates to consequences rather than causes of perception.
- 2.62. His proof was long on the theory of risk communication and a description of all the fright factors at work in risk perception but his comments on the appeal proposal were limited mainly to stating that most of the risk factors were here present and that a heightened level of public concern was not only unsurprising but predictable (6.3.2). He anticipated that the level of perceived harm in the community could not be greatly reduced and his overall message seemed to be that, away from nuclear sites themselves or their immediate environs where there would be a good appreciation of radiation risks, a high level of perceived harm was inevitable (7.6). If this was enough to prevent LLW disposal proceeding, it would thwart the achievement of key parts of the Government's LLW Policy and Strategy.
- 2.63. Prof Kemp had criticisms of some aspects of the appellant's community engagement as well as praise for other aspects, but this does not assist with the issues of the materiality of the perceptions and the weight to be attached to them. His main criticism was Augean's "decide, announce and defend"

approach which he compared with the Dounreay 'all management options' appraisal commended in one of the case studies (T63). However, he conceded that a supply chain proposer of a landfill site is inevitably restricted to a single project at a single site and, in such a situation, the Lillyhall case study is more apt (T63 pg15-19). The Dounreay consultation exercise (T63 pg9-14) did start with a 'blank sheet' but that was for the management of all its waste. It did not have the benefit, as at ENRMF, of having the waste defined, so it needed to look at all options for a wide range of wastes and, while residents at Dounreay would see that the regulations had been applied to protect them, they are the same regulations applied to different circumstances. The EA states that Augean has followed its requirement for engaging with local communities, the planning authority, the EA and other interested parties (EA9 pg49, see also case studies in HPA14).

- 2.64. When compared with the Lillyhall pointers to good practice, the engagement carried out by Augean – which followed the DCLG/RTPI Good Practice Guide - was not merely prodigious but it closely resembled the actions taken to engage the public at Lillyhall. The Good Practice Guide advises that "Public meetings are rarely an ideal forum to discuss and debate a development" (OD32 pg22) and SNIFFER states that "When emotions are running high, public meetings are generally the least effective arena for communicating with people" and "A better approach...may be a 'drop-in centre' where people can read information and talk to staff on a one-to-one basis" (S8 pg35/36). Augean considers exhibitions to be a much better way to discuss and debate proposals. At the exhibition and open day, the HPA, EA and RSRL were there. The EA asked to attend, so a surgery style event was arranged and HPA and RSRL were invited. The HPA was paid for the services of Mr Shaw, the Radiation Protection Adviser (as there is a legal requirement to appoint an RPA). The only payment to the EA was the fee for the Authorisation (Permit) application. Criticisms by Mr Gifford [report p5.81 below] were in part a result of circumstances. NCC and the KC Liaison Group had not at that time been advised of a possible extension application.
- 2.65. He was unfamiliar with Government policy guidance on perception in PPS23 and its Annex (PP6, PP6A), he did not explain any real consequences for the local community nor any land use planning impacts other than an unexplained "effect on amenity", merely pointing to common health effects such as headaches, sleeplessness and malaise (AUG6 p35).
- 2.66. As made clear in the Ince Marshes case study (HPA14 p2.1.1.4), it is the uncertainty caused by the planning process rather than the development itself which gives rise to anxiety and stress. Anxieties should be allayed once the decision on the appeal is announced. The S106 Agreement (PA9 Clause p2.5) recites that the Community Fund would have a positive effect, counterbalancing any perceived negative impact. No objector giving evidence in person complained of any such effects (only after hearing Mr Miles' evidence for Augean has one objector written complaining of anxiety exacerbating a diabetes condition (AP15.33)). In any event, if such effects had been or would be experienced they would represent actual harm to health which NCC does not rely on. As NCC states (NCC1 p50), the risks associated with the landfill would be small and tolerable.

- 2.67. Prof Kemp accepted that his evidence was similar to that given by Prof Furedi at the Belvedere Energy from Waste (OD63 p203-213) but that had little persuasive effect on the Inspector who commented on the intangible nature of the evidence and that he had been unable to detect any specific or convincing evidence of land use or planning consequences arising from the negative perceptions of the local community (OD63 p183-186). As in this case, there is a "clear gulf" between the technical assessment of the risk and the public perception. ('Reasons a, b and c' are dealt with in report p2.4-2.6 above).

Policy – National Waste Policy

- 2.68. PPS10, PPS23 and Waste Strategy England (2007) (WSE) (PP5, PP6, NS1) do not deal specifically with LLW but contain relevant national policy guidance for the appeal proposal. They were all addressed in the Officers' report (PA12). Members were advised (p9.4) that the proposal accorded with PPS10 and PPS23 and there was no suggestion of conflict with WSE. The reasons for refusal do not allege any conflict with these documents. NCC's statement of case (NCC1 p37-41) refers to PPS10 in connection with the proximity principle but there is no suggestion of any conflict.
- 2.69. NCC/Mr Aumônier refers briefly to PPS10, PPS23 and WSE (NCC7.1 p4.8, 5.27, 4.58-4.59). Elsewhere, there are fleeting references to these documents on the waste hierarchy and proximity but there is no suggestion of outright conflict, other than (p6.3) that the transport of LLW to the appeal site could not be consistent with one of the key planning objectives of PPS10. However, in his EiC, he claimed that the appeal proposals were in conflict with PPS10. That claim is untenable (AUG6 p39).
- 2.70. Mr Miles for Augean deals fully with PPS10, including its Key Planning Objectives (KPOs) and site suitability factors, and PPS23 (AUG1.2 p6.5-14, 6.70-105). The proposal is compliant with these provisions. This evidence was largely unchallenged (AUG6 p40). Note, however, that the opening two paragraphs of PPS10 highlight the pivotal role that the planning system should play in ensuring the adequate and timely provision of needed, new waste management facilities. There is a compelling need now for additional disposal routes for LLW including supply chain landfill sites. The appeal proposal is a facility of the right type, in the right place (given that there is no other available site) and at the right time.
- 2.71. Note also that there is an excellent fit with the KPOs. The first, dealing with the **waste hierarchy**, acknowledges that, although disposal is at the bottom of the hierarchy, it is an option that still must be provided for. Although the LLW Policy and LLW Strategy (PP2, NS17) seek to avoid the use of disposal wherever possible, it is recognised that there are limitations to the application of the hierarchy in the management of legacy wastes (PP2 pg8 p18 and Annex p16-18), which form a large proportion of the LLW envisaged for disposal at the appeal site, and both documents give strong encouragement to the disposal of LLW in landfill sites as an alternative to disposal at the Drigg LLWR (see also PP2 Annex 1 pg24 p17, NS17 pg16 p2.5.1 and pg34 p3.3.4, OD67 letter of 8/10/10 pg5 p5.18, OD67 letter of 22/6/10 pg9 re stored waste ready for consignment and pg17 re delay in decommissioning). Moreover, the updated draft UK Strategy for LLW from the non-nuclear

industry recognises the limited opportunities to apply the hierarchy to non-nuclear industry LLW (NS18A p1.1). If the appeal is allowed, the Tradebe/Fawley incinerator would be able to treat larger volumes of LLW higher up the hierarchy, with disposal of the ash at ENRMF.

- 2.72. The 2nd KPO deals with the **self sufficiency principle** under which communities are encouraged to take more responsibility for their own waste. This cannot sensibly refer to a single district, county or even region where, as here, the waste has a national dimension. Significantly the LLW Policy (PP2 p36) applies this principle only to non-nuclear industry LLW arisings and not to the much larger quantities generated by the nuclear industry. NCC/Mr Aumônier considers that WPAs around the country will be encouraged to make appropriate provision within their own areas for any LLW arising within them. Whether such encouragement would lead to such provision being made is another matter, given the current antipathy of most authorities towards doing that, the envisaged non-binding nature of Inspectors' recommendations on DPDs, the expected hostility of host communities to any such provision and their increased ability to influence plan-making under the new localism agenda and the reluctance of waste operators to take forward and operate facilities for LLW. Whatever may happen in the future, it is very unlikely that any such plans would be in place before the expiry of the 2006 permission in 2013. Even if plans were in place, there is no prospect within that timescale of new facilities coming on stream even if there was an operator willing to take up the challenge.
- 2.73. The 3rd KPO relates to the **national waste strategy** and supporting targets. The appeal proposal would directly assist in meeting the needs identified in the national LLW Policy (PP2) and the national LLW Strategy (NS17) by providing an early solution for dealing with legacy wastes which are delaying the nuclear decommissioning programme in central and southern England. The Nuclear Decommissioning Authority (NDA) and Research Sites Restoration Ltd (RSRL) are strongly in support of the proposed development, as are other potential consignors of LLW to the site. The appeal site currently caters for a national catchment area in terms of its hazardous waste specialism and the disposal of LLW would be complementary to that role (AUG6 p43).
- 2.74. The 4th KPO deals with **the protection of human health and the environment** as well as with the proximity principle. As to the former, the SoCG (AP2 sections 5&6) records that there is no disagreement with NCC on non-radiological and radiological impacts and it accepts that any risks associated with the development would be low and tolerable (NCC1 p50).
- 2.75. With regard to the **proximity principle**, the inflexibility of the former principle that waste should generally be managed as near as possible to its place of production (PP5A) has been relaxed and all that is required now is that the waste should be disposed of in 'one of the nearest appropriate installations' (INT13 A16.3, see also NS17 pg14 'box' and NS19 2nd part pg16/17 and pg20). Use of the word 'appropriate' shows that factors other than distance have to be considered, including cost-effectiveness, economies of scale, deliverability and environmental performance. Any distinction which may have formerly existed between disposal and treatment in the application

of the principle has been removed by the revised 2008 Waste Framework Directive Article 16 (INT13) which takes direct effect in December 2010. If planning permission and the EA Permit are granted, ENRMF would be the nearest appropriate installation to the identified likely source of LLW arisings in central and southern England (AUG1.2 p5.1-5.19).

- 2.76. NCC states that the Waste Framework Directive 2008 will widen the application of 'nearest appropriate facility' for recovery but not for those levels of the hierarchy which precede it (NCC10 pg13 last sub para of p28). However, Annex 2 of the revised Directive (INT13) defines 'Recovery' and includes 'Recycling'. Therefore, any waste option with a transport dimension is brought within the proximity principle; there is no longer any distinction in terms of transport and the proximity principle between disposal and any other management option that involves transport [report p3.30 below].
- 2.77. The 5th KPO includes the meeting of **needs** and encouraging **competitiveness**. The appeal proposal would meet the urgent needs of the nuclear and the non-nuclear industry for an alternative disposal route for LLW and it would encourage competitiveness with other disposal routes even though the site would enjoy a head start over other potential landfills in this part of the UK.
- 2.78. The 6th KPO relates to the Green Belt, which is not relevant. The final KPO seeks to ensure that the design and layout of the site supports sustainable waste management. No change is proposed to the approved design and layout of the site. The development would provide a new sustainable management facility for LLW.

National LLW Policy and Strategy

- 2.79. The **National Policy on LLW 2007 (PP2)** is directly relevant to and supportive of the appeal proposal (AUG6 p47). A key theme is that a risk-informed approach should be adopted to ensure the safety and protection of the public (p12-16 and Annex 1 p37-40). It sets dose constraints and risk targets which the proposal would comfortably meet and exceed (i.e. be better). An individual risk of death of 1:1,000,000 pa is stated to be a very low level of risk and should be used as a guideline for the boundary between the broadly acceptable and tolerable regions; it is a suitable target that is broadly acceptable without concern (PP2 pg28/29 p37, HPA8 pg7). The maximum dose that a member of the public would receive under the unrealistically conservative assumptions in the radiological risk assessment would be the equivalent of this "acceptable without concern" risk target and, of course, as soon as a person moves away from the immediate presence of the LLW deposit, the dose received would be a small fraction of that risk target.
- 2.80. Prof Kemp was critical of the use of "technically assessed levels of risk", but this is precisely the approach that the Government commends and, therefore, cannot be ignored in risk communication and in the evaluation of perceived risks. The policy statement seeks to put the dose constraints that it sets into a proper context by comparing them with the average annual doses

that people in the UK receive from background radiation. Again, Prof Kemp appears critical of the use of such comparisons.

- 2.81. Perhaps the most important theme throughout the Policy statement is the emphasis on the need for flexible, cost-effective, fit-for-purpose (PP2 pg25 p22 and pg35) management solutions to be brought forward to deal with the types of LLW that do not require the much higher degree of engineered containment provided at the Drigg LLWR, to husband that precious and costly resource. The specific endorsement of the use of landfill sites for LLW final disposal (PP2 pg8/9 p19 p22) represented a marked shift from the previous guidance. The Government has confirmed its belief that landfill (and incineration) is a viable and important option for the management of LLW (PP22 pg24 p12.1, also PP2 pg24 p19, AUG6 p49).
- 2.82. The Policy statement raises a presumption in favour of early solutions; to management solutions which can be implemented "early rather than late" and at the "earliest possible stage" and that the objective is to put such solutions in place prior to the implementation of management plans wherever possible (PP2 pg9 p22 and pg23). It makes clear that early solutions do not necessarily equate with early disposal. However, where, as here, the only LLW that the site could receive would be genuinely residual and incapable of being managed higher in the hierarchy (by virtue of the requirement for every consignor to have satisfied the EA as part of the Permitting process that the hierarchy has been properly addressed), there is nothing in the statement to suggest that early disposal should not occur.
- 2.83. Mr Aumônier for NCC was critical of "ad hoc" solutions (NS17 pg12) being proposed in advance of completed management plans but that is misplaced in relation to this appeal proposal: first, management plans are the responsibility of the waste producer and are not required from or relevant to supply chain initiatives and, secondly, there is specific encouragement to bring forward management solutions in advance of the preparation of management plans. The appeal proposal comes forward as an early response to the new LLW policy statement capable of meeting a short term but pressing need of RSRL and others. As RSRL states, the lack of suitable disposal routes for its LLW is holding up decommissioning and each year that its sites are extended will cost the UK taxpayer tens of millions of pounds (OD67 letter of 8 October 2010 3rd page, see also NCC7.1 p5.34, OD67 letter of 22/6/10 pg13-15 RSRL estimates of cost savings, AUG1.3 AppxD NDA letter bottom of 2nd page - £1bn saving over a 100 year period - and top of next page "...substantial cost reduction can be achieved through disposal of wastes with lower radionuclide concentrations in alternative, fit-for-purpose near surface landfill facilities.").
- 2.84. Also, it is essential that supply chain sites are brought forward before producer management plans are finalised or it would be impossible for such plans to consider all the available options and would prevent the required consultation with host communities if the sites had not already been identified and approved.
- 2.85. The Policy statement seeks to avoid excessive transport of waste and requires consideration to be given to the proximity principle with transport

being expressly considered in any options appraisal. However, it emphasises that these considerations should be balanced with all other relevant factors on a case by case basis, clearly acknowledging that distance of travel is neither an overriding consideration nor one that is to be given priority over any other relevant factor. The minimisation of transport is “just one of a number of factors” to be taken into account and transport minimisation and the proximity principle are “simply two factors amongst many” (PP22 pg15 p5.1; also PP2 pg9/10 p24/24).

- 2.86. Fears are expressed about road transport. The Government’s LLW Policy confirms that the regulations for the transport of radioactive waste have provided a safe environment in the past (PA2 pg10 p24), which should give reassurance to local residents. Also, RSRL confirms that, of the half a million packages transported by road in the UK each year, there is “typically no radiological impact at all to the public” (OD67 22/6/10 letter pg21, NS17 pg28 p2.62). The statistics include all levels of radioactive material.
- 2.87. The **NDA UK LLW Strategy for the Nuclear Industry (NS17)** was approved by Government in August 2010 (NS17A). It is specifically directed at, amongst others, planning authorities, waste producers and the supply chain. It is of direct relevance to the appeal proposal. One of its 3 strategic themes (pg9) is making the best use of existing LLW management assets. In its Figure 1, which depicts the strategy, the disposal level of the hierarchy refers to making the best use of the LLWR. The Strategy states (NS17 pg5) that the UK will generate significantly more LLW than the potential capacity at LLWR, which means there is a need for alternative ways to manage LLW including, where necessary, the use of alternative disposal routes.

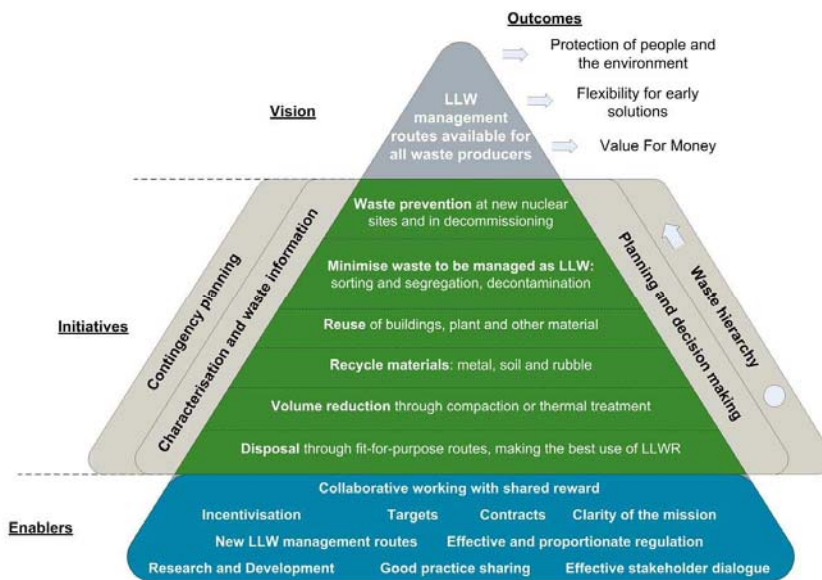


Figure 1 - Diagrammatic representation of the UK nuclear industry LLW strategy (NS17 pg10)

- 2.88. The Strategy confirms (pg25) that continuing to manage LLW as we have done in the past with a focus on disposal at the Drigg LLWR is not sustainable and that appropriate alternative waste management routes must be used for

wastes diverted from it. The Strategy seeks to extend the life of the Drigg facility to ensure capacity for the long term; it does this by insisting that the types of LLW which do not require its high degree of engineered containment should no longer be accepted there. Measures are already in place to prevent such waste being disposed of at LLWR (NS17 pg25, OD67 RSRL letter of 8 October 2010 3rd page). Although the Strategy envisages that a successor to the Repository will not be required before the end of the century and that new repository capacity will not be required for many decades (pg36-37), NCC/Mr Aumônier's claim that there was no rush and that we could continue to consign LLW to Drigg is totally wrong: extended capacity at the LLWR would be achieved only by the precious remaining capacity being reserved for the higher level wastes that require the greater level of protection. NCC's argument contravenes 2 of the 3 strategic themes of the Strategy, to make the best use of existing facilities and the need for new, fit-for-purpose waste management routes.

- 2.89. The 3rd strategic theme is the waste hierarchy. There is a preference for management of LLW at higher levels in the hierarchy but, where that cannot be achieved, disposal is acceptable provided that the impact on people and the environment is minimised. NCC agrees that the only LLW that would be deposited at the site would be residual waste which could not be subject to management measures higher up the hierarchy (AP2 p8.3, AUG6 p54). Unusually in this case, because of the requirement for every waste consignor to obtain an EP, there is a high degree of confidence that the waste would genuinely be residual. RSRL's letters are a further confirmation of that (OD67). At the disposal level, the Strategy encourages the supply chain to bring forward landfill sites (pg13, 26, 32). Indeed, it is "essential" that the supply chain be able to take part in the delivery of the strategy (NS17 pg32 p3.2 2nd sentence). Particular factors in favour of the supply chain are stated to be its maturity and that the operators have the expert capability and techniques required.
- 2.90. Key outcomes of the Strategy are threefold: protection of people and the environment, flexibility for early solutions and value for money (NS17 pg10 Fig1). The appeal proposal would deliver all three. There is no dispute with NCC on the first. As to early solutions, the Strategy makes particular reference to legacy wastes (pg34): it recognises the difficulties they present for the decommissioning programme and requires them to be cleared from the site of generation "as soon as practicable", stating that dealing with such wastes is a key part of NDA's mission. Clearly great weight is placed on this matter; the appeal proposal would provide an early disposal route for RSRL to clear the legacy wastes from its sites which are delaying decommissioning. Value for money would be secured by the supply chain delivering cost-effective, affordable waste management facilities (NS17 pg13). Direct evidence by the NDA and RSRL demonstrates considerable cost savings to the public purse by diverting waste away from Drigg LLWR to a landfill site (AUG1.3 AppxD last pg, OD67 letter of 22 June 2010 pg9 & 15). The Strategy regards affordability as a key consideration (pg13).
- 2.91. Further guidance is given in the Strategy on the proximity principle. It contemplates (NS17 pg13) that LLW may be transported a considerable distance from its source and draws a comparison with hazardous waste. It

states that the proximity principle is appropriately considered as part of the BAT assessment undertaken by the waste producer as part of the application for an EP to send waste off-site for treatment or disposal (NS17 pg14, AUG6 p56, AUG2.2 p3.5, T19 p4.31 and 4.33). As the site would, if permitted, represent the only available installation in the central and southern parts of England from where the bulk of the LLW would be received, it is hard to see how it could offend the proximity principle for at least the duration of the appeal proposal.

- 2.92. BAT is a continuous process and the position may change in the future if other landfill sites become available to take LLW but that would be beyond the timescale of this proposal. The Post Adoption Strategic Environmental Assessment of the Strategy emphasises that the impacts of LLW transport are so small that transport is not a strong differentiator between management (NS19 pg4-5 and pg16). This document looks at other factors relevant to the proximity principle including the dispersal of producing sites, the small quantities involved and economies of scale (pg20). Clearly, there is no conflict with the proximity principle.
- 2.93. NCC/Mr Aumônier argues that rail transport to Drigg LLWR (where there is a rail head) would be a realistic option for LLW from Harwell - once it became clear that his own analysis demonstrated that, for road transport, the journey to the appeal site is substantially shorter than that to Drigg. RSRL states that rail transport would be unlikely ever to be cost-competitive with road haulage given the small volumes involved, the absence of rail freight infrastructure on-site and the need for road haulage to reach such facilities (OD67 letter of 8 October 2010 last para). Its letter of 4 November 2010 (OD67 pg14) advises that to transport LLW to a rail terminal would require a fully compliant road shipment to be prepared and, once it was in place, the additional cost of driving to ENRMF would be marginal. These points were overlooked by NCC's argument on the cost-competitiveness of rail haulage (NCC7.5 pg12). It is true that distance and payload are cited by RSRL it also requires that there should be little or no road haulage needed at either end. Also, none of the identified rail facilities is near to Harwell. All would involve a fairly lengthy road journey and, as RSRL explains, constructing such a facility on site would be a non-starter.
- 2.94. The October 2010 draft version of the **LLW Strategy for the Non-Nuclear Industry (NS18A)** has not yet been published. Of note is the change from the previous draft in relation to the proximity principle: the former's reference (NS18 pg18 p30) to giving "greater attention" to the issue is replaced by the more modest "appropriate consideration" (NS18A pg19 p2.15). Also, the latest draft seeks to reassure readers about radioactivity and the risks of LLW management and putting the various dose limits, constraints and risk targets into context by comparing them with the public's everyday exposure to radiation (NS18A e.g. pg30-31 and 72-74). This endorses components of Augean's risk communication exercise.

Development Plan

- 2.95. The refusal notice cited conflict only with certain parts of Policy 1 of the WLP 2006, a policy that is no longer part of the Development Plan, having been

replaced by policies in the Core Strategy. NCC has no development plan policy objection to the appeal proposal (AUG6 p60). The fact that there is no specific policy on LLW is not something to hold against the proposal. There is nothing in the general waste policies which do apply to the appeal proposal which would preclude LLW being landfilled at the ENRMF. The appeal proposal is compliant with the relevant development plan policies (AUG1.2 p6.133) and, as such, enjoys the statutory presumption in favour of permission being granted unless other material considerations indicate otherwise(S38(6) 2004 Act).

- 2.96. The **East Midlands Regional Plan** has, possibly briefly, re-emerged as part of the development plan (PP7, PP7A). There is nothing in it with which the appeal proposal would conflict.
- 2.97. The **Waste Local Plan (WLP)** contains a number of relevant 'saved' policies (AUG1.2 p6.26-28). The proposal accords with policy 2. This is not disputed by NCC. No reliance is placed by the Council on the numerous policies which seek to protect the natural, built and historic environments.
- 2.98. So far as the **Minerals and Waste Development Framework (MWDF) Core Strategy (CS)** is concerned, the only policy of direct relevance to the appeal proposal is CS14 (PP15 pg43). The proposal accords with its provisions (NS1.2 p6.55-64). This was not challenged. The safeguarding policy CS11 has not been cited by NCC and there would be, in any event, no conflict with its provisions. Reference has been made to the commentary in the Core Strategy on catchments and the role of the appeal site; Northants is not aligned to any particular region but is part of the wider south east (p4.1). A large proportion of the LLW arisings to be consigned to the site would be generated in this area. Cross-border waste flows are inevitable where some management facilities have a highly specialised role and draw from a larger catchment area (p4.16).
- 2.99. While the Core Strategy seeks to avoid the County becoming a key sub-national location for waste management, it states that it is not appropriate to oppose facilities serving wider catchment areas. This should apply equally to LLW as it does to hazardous waste; the similarities between hazardous waste and LLW management facilities are clearly recognised in the LLW Strategy. The Core Strategy identifies the appeal site as serving a national catchment area since it is one of the few hazardous waste facilities in the country and the only one in the E Midlands, E of England, the SE and London (p6.28). The same considerations would apply to LLW management at the site. The Strategy states that the current national specialisms in hazardous wastes should continue as well as its regional role in supporting the management of the region's hazardous wastes. The appeal proposal would not diminish either of those roles, especially as there is no real prospect of the landfill being completed before the current permission expires. The proposal would be consistent with these national and regional roles.
- 2.100. None of the MWDF documents has a policy on LLW. Augean did not submit to NCC that there should be such a policy at the CS stage; the planning application which led to this appeal had not been made, there had been no engagement with the public and the application is, in any event, only for a

permission until 2013. The first engagement with the public was in May 2009 and the consultation with statutory consultees began in the latter half of 2008. The main concern is to have a hazardous waste allocation and to rely on 'need' and national policy for the LLW case.

- 2.101. No conflict is alleged with the Structure Plan, the E Northants District Local Plan and the N Northants Core Strategy on matters such as the historic environment, cultural heritage, landscape, groundwater, surface water, highway safety, the rural economy or tourism.

Regional Waste Strategy 2006

- 2.102. This is not part of the development plan. Its policy RWS1.6 (PP29) requires WPAs to make provision for the management of hazardous waste in the context of regional and national needs.

Control and Management of Development DPD

- 2.103. This emerging DPD (PP32) takes the above subject forward. While it contains no reference to LLW, there is an interesting commentary on the different catchment areas served by different waste facilities; that facilities with a national catchment area will be appropriate in Northants if they are of a specialised nature, in relation to either the type of waste to be managed or to the nature of the processes involved in its management (p3.12). It is also stated that if the facility is only one or two of its type nationally then a national catchment would be appropriate.
- 2.104. Why is NCC so keen to establish that the appeal proposal would not be a national facility in relation to LLW? It seems to be related to the contention that the proximity principle would be offended: if it served a national catchment, then the waste would travel considerable distances and such a contention would fall away. The proposal is concerned solely with adding another waste stream to a landfill which the Council accepts is appropriately serving a national catchment. Given the surplus capacity that will remain on the expiry of the permission in 2013, the similarities in the catchment areas from which the currently permitted and proposed waste types would be drawn and the similarities between the management procedures that would apply to both waste types, it is difficult to see what planning harm would arise if LLW were landfilled at the site (AUG6 p68).
- 2.105. If permitted, the site would be one of only a very few such sites for LLW in the country: Clifton Marsh and Lillyhall are at present the only two supply chain landfills capable of taking LLW or VLLW and both are located in the NW of England. Lillyhall is essentially committed to Sellafield's waste and Clifton Marsh's ability to take waste from outside its own region is very limited. There are no facilities to serve the central and southern parts of the country. The appeal site would qualify as a national facility for LLW on this basis alone.
- 2.106. However, the LLW waste type should be recognised as specialised: it is precisely categorised by reference to its particular qualities and radioactivity, it has given rise to a specific national Policy statement and Strategy, it has specialist bodies that regulate every aspect of its transport and management,

it is the subject of particular international regulations and has spawned a plethora of scientific and sociological papers in a manner that 'ordinary' waste would not (AUG6 p70). As to the nature of the processes involved, again LLW would qualify for a national catchment. The processes, including the pre-acceptance procedures, the transport procedures and the on-site acceptance, handling and monitoring procedures are at least as rigorous and specialised as those relating to the hazardous waste which NCC accepts as a specialist process.

- 2.107. Mr Leuchars for WW had little difficulty in answering that he thought LLW was indeed a specialist waste. Augean/Dr Wilson's table confirms that the waste type and the processes involved are specialised (AUG3.3(19)). NCC/Mr Aumônier's response (NCC7.6) does not detract from the force of this table; most of his comments on the table miss the point that hazardous waste and LLW are both specialised and that LLW's specialist nature, type, catchment and processing is recognised and accepted by operators, planners, regulators and Government. Indeed, consignors of LLW require a permit whereas IPPC sites do not require one to dispose of waste off-site and there are numerous specialist consignment processes, specific transport requirements and the like (AUG6 p72). Dr Wilson compared the LLW and specialised management and handling procedures already adopted at the site for hazardous waste. Those procedures are accepted by NCC as being specialised and if they are applied to LLW (and there is no challenge to Dr Wilson's proof that the measures for LLW would be similar to those for hazardous waste) they must be specialised too (AUG3.2 p8.5).

Need

- 2.108. Government policy guidance does not require the appellant to prove need for the appeal proposal; to the contrary, PPS10 (PP5 p22) states that, where proposals are consistent with an up-to-date development plan, the WPA should not require the applicant to demonstrate need. No policy in the development plan requires the appellant to demonstrate need. However, if a need for the development can be demonstrated this would be a material consideration deserving of considerable weight. Three aspects of need are relevant. Firstly, there is a need to make full and effective use of a scarce land resource before its permission expires in 2013 in circumstances where there is absolutely no guarantee that a permission for an extension of time or the extent of the landfill would be permitted, even for hazardous waste alone. The reluctance of NCC to make the site the subject of any allocation in the emerging MWDF is clear evidence of its hostility to any extension of the life of the site; local residents can be certain to resist this too. In circumstances where it is agreed that there is surplus capacity which will not be consumed by hazardous waste during the remaining life of the site, there is a clear need for additional waste to be landfilled to ensure the fullest use of the site is made (AUG6 p74).
- 2.109. Secondly, NCC accepts that there are residual LLW arisings for which disposal is the only practicable option (NCC5 AppxB p46, NCC7.1 p7.4) and that there is a national shortage of sites at which LLW can be disposed (AP2 p8.4). The need for alternative ways of managing LLW and to husband the life of Drigg LLWR is well documented in the LLW Policy statement and LLW Strategy

(PP2, NS17 pg5). The NDA's letters of 2 October 2009 (AP4 pg55) and 15 September 2010 (AUG1.3 AppxD) confirm that there is a national need for additional disposal routes and stress the need for early solutions.

- 2.110. NCC's reason for the quantity cap in suggested condition 4 (PA15A) relates to the short term need in southern England for which there is no closer permitted landfill. NCC states, with regard to the LLW Strategy (NCC10 pg11 p28(c), NS17 pg2), that there is 'sufficient capability in the nuclear estate (including the supply chain)....' but 'capability' is not the same as 'capacity' and this clearly envisages that more 'capacity' will be provided by the supply chain, as here.
- 2.111. The policy to divert lower activity LLW away from Drigg to new fit-for-purpose, cost-effective facilities is already in operation (AUG 1.3 AppxD). Legacy waste is to be cleared from the nuclear sites as soon as practicable. NDA's first letter (AP4 pg55) stresses that it is a priority need to cater for the lower activity LLW arising from the decommissioning programme and that existing landfills capable of accepting LLW would provide a significant opportunity especially in the near term; in the short term, existing commercial landfills represent the only alternative to disposal at LLWR and the availability of appropriate disposal routes for LLW is essential to the decommissioning process and NDA's core mission (AUG1.3 AppxD 2nd letter). There is a compelling and urgent national need for additional disposal facilities to be brought into operation at the earliest possible time. The appeal site is the only realistic opportunity for this in the period to mid 2013. National landfill operators such as SITA and WRG have not offered any sites other than at Clifton Marsh and Lillyhall. Harwell (T36 pg8, T78 pg28/29) and Hinkley Point on-site proposals are on hold at present. Magnox South also seeks off-site disposal (see p 2.116 below). While Drigg LLWR has looked at the possibility of on-site disposal at Sellafield in a briefing paper (NS22 pg35 p6.3), a more formal view is given by the NDA, which says that it will not invest where the market can offer better value (AUG1.3 AppxD pg39 top para). As RSRL says, building new facilities is less economic than using existing landfills (OD67 letter of 22/6/10 pg15).
- 2.112. The third level of need relates to the situation in central and southern England (AUG1.2 pg40 table 1 – see below). NCC/Mr Aumônier did not dispute the numbers in this table, subject only to points about the hierarchy/BPEO in relation to Harwell and the need for a Permit at Fawley. The waste figures in the table were supplied by the potential consignors and are the best possible data, particularly for the period to 2013, as to a large extent they are legacy wastes awaiting disposal. The table is not, however, comprehensive; it does not, for example, include the smaller quantities of LLW generated by the non-nuclear industry or military establishments nor does it include the 100t of "orphaned" drummed waste referred to by RSRL (OD67 letter of 8/9/10 pg1).

Table 1 Short Term Requirement in the South of England

Producer site	Quantity of non hazardous LLW (tonnes)	Source
Harwell	9,508	Letter dated 08.0910 from Research Sites

Winfrith	2,800	
AWE Aldermaston	3,283	Letter dated 23.08.10 from AWE
Fawley	19,000	Letter dated 15.09.10 from Tradebe
Culham	2,095	Derived from the 2007 Inventory and represents the volume of LLW arising requiring disposal 2007 - 2014
Berkley	105	Derived from Table provided by Magnox South and adopting a conversion factor of 1.4 tonnes per m ³
Bradwell	112	
Dungeness A	253	
Hinkley Point A	140	
Oldbury	501	
Sizewell A	312	
Total	38,109	

- 2.113. The overall quantity of LLW shown in the table may not seem significant but it is highly significant to the producers of it (AUG6 p78). Nor could the need which the appeal site could meet in the period to 2013 be described as trivial and to compare the quantity of some 38,000 tonnes which the site is likely to receive, with arisings over a 120 year period of 3 million m³ is pointless. As RSRL makes plain, it has no further capacity to store LLW on site and the legacy wastes are holding up decommissioning (OD67 letter of 22 June 2010 pg9), a situation which exists on all the major decommissioning sites which do not have access to a disposal route (pg17 same letter). RSRL confirms that the whole of the LLW that it estimates would be suitable for consignment to the appeal site up to mid 2013 that would not be acceptable to the Drigg LLWR under BPEO considerations and that the inability to dispose of this material would have an immediate impact on the decommissioning plans and on the taxpayer (OD67 letter of 8/10/10 pg5/6). Only residual waste is included in Table 1 (e.g. OD67 letters of 8/10/10 p5.9 and 8/9/10). Fawley's waste would be residual incinerator fly ash.
- 2.114. NCC/Mr Aumônier conceded that he could not comment in detail on RSRL's statements about the effect on decommissioning (NCC7.1 p5.32) as he had not spoken to RSRL. RSRL is not to be criticised for not giving direct evidence at the inquiry. It has throughout attempted to assist the inquiry by providing highly pertinent information and correcting errors and misinformation contained in NCC's evidence (AUG6 p79).
- 2.115. Turning to NCC/Mr Aumônier's reservations about Table 1 (AUG1.2 pg40), there is no doubt that the Tradebe/Fawley incinerator will obtain the necessary permit from the EA and so the quantity of waste estimated from that source would be reliable. For Harwell, the considerable quantity of documentation produced by NCC does not undermine the validity of RSRL's evidence (OD67). The BPEO exercise in 2007 (OD66) did not represent a final decision and preceded the national LLW Policy statement (PP2) published later that year. That Policy statement marked a fundamental change of approach to commercial landfills as a disposal option for LLW and a significant change in circumstances for the BPEO study which had marked down off-site landfill disposal on account of feasibility only but had recognised that its scoring may improve through subsequent Government policy changes.

- 2.116. The two subsequent updates to the BPEO study (OD55, OD56) took account of the Policy statement, and the most recent one of May 2010 expresses a clear preference for off-site disposal to a commercial landfill. A similar situation exists with the 5 Magnox South sites (NS24 pg4 – Berkeley, Bradwell, Dungeness A, Hinkley Point A and Sizewell A): the business case for on-site management of LLW is being fundamentally reviewed in the light of the 2007 LLW Policy Statement which has opened up a new disposal route, namely off-site disposal at commercially operated landfills to “relieve the burden on the LLWR capacity, and potentially could provide huge savings...” (NS24 pg72, 78, 105-6). Given the urgency of RSRL’s need to deal with its legacy waste and the need for cost effectiveness and affordability, it makes sound sense to use an existing landfill immediately capable of receiving the waste once the necessary permissions have been obtained, rather than embarking on a far more costly and time-consuming process of constructing a permanent storage facility on-site.
- 2.117. NCC argues (NCC10 pg19 p54) that the Harwell BPEO had concluded in favour of Option ON3 – New Engineered Disposal On-site and that this was retained as its preferred option. However, it supported all 3 options which had been addressed in the 2007 BPEO exercise (OD55 pg9 last para).
- 2.118. RSRL has explained (OD67 letter of 4 November 2010 pg8) that the disposal options (referred to in T83) do not address the immediate need for disposal capacity at the low activity end of the LLW range and that there is no authorised disposal route for this material. Its letter of 8 October 2010 (OD67 p5.18) advises that the quantity identified is based on realistic densities and that the wastes are un-compactable. Harwell sought a variation of its Permit to allow off-site disposal to a commercial landfill and has drawn attention to the appeal site (T78 e.g. see pg29; also, this application states that the on-site option would require significant capital expense pg28; the off-site option would be equally attractive to construction of a facility on site pg29; details of solid wastes are set out pg36-39; BAT and BPEO are defined at pg97 and there is comment on the application of the proximity principle for radioactive waste at pg101; Annex 3 sets out RSRL’s BPEOs on pg85-90. T83 is the Feb 2010 Variation Notice.) The variation is likely to be issued early in 2011 (AUG6 p82). There is a requirement as part of the BAT process to consider local community issues at the receiving site (NS17 pg26), which is not to be equated with a requirement in every case to consult with the host community at the receiving site. The Policy Statement (PP2 pg10) makes clear that the responsibility for such consultation rests with the EA and that it should take account of operator’s consultations and adopt a proportionate approach. In this case, the EA would have regard to the extensive consultation exercises already carried out by Auegan (involving RSRL) and NCC in connection with this appeal application as well as its own consultation exercises on the Permit [Inspectors note – see EA3 pg30 Requirement R2 for Authorisation, on dialogue with local communities and others]. It may well decide that no further consultation is required.
- 2.119. With regard to the transport implications of moving Harwell’s waste to the appeal site, Mr Aumônier’s Wrate analysis (NCC7.1 tables 6, as corrected, and 7) demonstrate that the global warming potential of conveying the material to Drigg LLWR would be far greater than its movement to the appeal

site. The CO₂ emissions from the road trip to Drigg would be 3 times greater than that generated by taking the waste to ENRMF. The suggestion that the material could be moved by rail is untenable given the absence of nearby rail freight facilities; providing such facilities from new would be hugely costly and wholly impractical in the timescale for the appeal proposal. Such a delay and such a cost could not be justified and, as RSRL has shown, such waste could not be received at the Drigg LLWR on BPEO grounds.

2.120. There is no reason not to accept the data in Table 1 in its entirety (AUG1.2 pg40). Coupled with the information contained in letters from NDA, RSRL and the other potential consignors, together with the important policy imperatives contained in the national LLW Policy Statement and Strategy, this amounts to a powerful demonstration of a compelling and urgent need to permit the appeal site to receive LLW during its remaining life. There is no requirement on the appellant in a case of this nature to consider alternative landfill sites but, in any event, consideration has been given to this and it is common ground that there is no available alternative landfill able to receive LLW anywhere in central or southern England. The Carsington Judgement (OD78) contains nothing to suggest that a comparison of alternative sites is required: there is nothing in statute or policy guidance (p36-37) to require it and this case falls well outside the category of case referred to in the Trust House Forte decision (OD78 p16). There might under BPEO procedures be a requirement to consider alternative sites in connection with the proximity principle but that would be a matter for the consignor.

2.121. The other aspect of need to be considered is that for hazardous waste, as NCC has expressed concern (NCC3) that the deposit of LLW at the site would deplete capacity which should be reserved for hazardous waste. Mr Aumônier (NCC7.1 p8.8) took the concern to an extreme extent by suggesting that the annual waste intake of up to 249,999t could all be LLW. This is unrealistic. The total hazardous waste inputs to ENRMF (AUG3.3 Appx2) are:

- 2005 143,195.20t
- 2006 108,787.04t
- 2007 128,067.13t
- 2008 207,965.71t
- 2009 95,586.39t

But 2008 was exceptional, with a very large input from the Olympic site; 2005 was affected by changes to Regulations; 2009 was a recession year. The baseline is around 100,000-120,000 tpa, leaving plenty of headroom for the two waste types, both of which are project based and volatile waste streams. There would be ample capacity for the site to accommodate the quantity of LLW envisaged [report p2.112 above], and leave considerable headroom for any unexpected quantities of hazardous waste. Any concerns on this matter could be addressed by imposing a suitable condition. There is no disagreement on the appropriateness of a condition if it is found to be necessary, the only dispute is over what the limit should be. NCC's figure of 25,000 tpa would be too low. There should be greater flexibility (PA15A, AUG6 p85). Concerns about the longer term position are beyond the scope of this inquiry.

Perceived Harm

2.122. There are 2 separate issues. Firstly, is perceived harm a material consideration and, secondly, if it is, what weight should be given to it? The first is a question of law for the Courts to determine, whereas the second is entirely a matter for the decision-maker (subject only to intervention by the Courts if the decision-maker's exercise of discretion is legally flawed). The House of Lords in Great Portland Estates (1985) (OD57) held that the test of what is a material consideration is whether it serves a planning purpose and that a planning purpose is one which relates to the character of the use of the land. The issue in that case was the materiality of a development plan policy which sought to protect specified industrial activities. It was held that the human factor is always present indirectly as the background to the consideration of the character of the land use and that it can and sometimes should be given direct effect as an exceptional or special circumstance. The Court explained that such circumstances fell to be considered not as a general rule but as exceptions to the general rule to be met in special circumstances (OD57 Lord Scarman at pg6).

The Law

2.123. In Gateshead MBC (1994) (OD59), the relevance of public concern was considered by the Court of Appeal. Lord Justice Glidewell (pg17) held that public concern was a material consideration that had to be taken into account "but that if in the end that public concern is not justified it cannot be conclusive. If it were, no industrial development - indeed very little development of any kind - would ever be permitted." The Court did not question the planning materiality of the public concern in that case, but concluded, in relation to the separate issue of the weight to be attached to it, that it was important to establish whether or not the concern was justified. The case concerned a clinical waste incinerator which had given rise to widespread fears of pollution and, in particular, dioxin emissions. The Inspector concluded that the plant would be built to meet the various standards set by the regulatory authorities but that the impact on air quality and agriculture had been insufficiently defined and public disquiet could not be sufficiently allayed to make the development acceptable. The SoS rejected the recommendation to dismiss the appeal and granted planning permission, holding that the concerns about emissions could and would be addressed by the regulatory authorities and that he was confident that the emission controls available would ensure that there would be no unacceptable impact on adjacent land. The Court upheld the SoS's decision.

2.124. Perceived harm was again considered by the Court of Appeal in Newport B.C (1997) (OD58) in relation to a chemical waste treatment plant. The legal challenge concerned not the substantive decision but the award of costs. In the substantive decision it was clear that the Inspector and the SoS had accepted that even unjustified perceptions and fears were a material consideration (see pg50G "a factor which counts against the development"), but in the costs award it was concluded that public perception could not be a reason for refusal unless supported by substantial evidence. The Court quashed the costs award because of the inconsistency of approach between the two decisions. The decision tells us no more than that public perceptions

about safety can be material even though not objectively justified and can amount to a good reason for refusal, although Aldous LJ in a short judgement stressed on no fewer than three occasions that that would be rare. The Court clearly accepted that the weight to be attached to the perception was for the decision-maker; it had been common ground between the parties that the public concern should be "given such weight as may be appropriate in the particular facts of the case" (pg53G-H).

- 2.125. The case is not in conflict with 'Gateshead'; both decisions confirm the materiality of public concern and Glidewell LJ's conclusion about justification for the concern relates to weight, which 'Newport' recognises is for the decision-maker. The facts in Newport are instructive: the Inspector set against the public perceptions of hazards and risks the "actual evidence regarding the foreseeable risks to health" including the Council Officers and statutory bodies and the experts consulted by the Council, all of whom had concluded that there would be no significant impact and had agreed with the conclusions of the ES (OD58 pg50H-51B). In those circumstances (which are remarkably similar to those in the present case), the Inspector concluded that the perceptions were insufficient to override the acceptability of the proposals. So although the perceptions were a material consideration, the weight attached to them was insufficient to lead to dismissal of the appeal. There was no challenge to this decision.
- 2.126. In West Midlands Probation Committee (1997) (OD69), which related to a proposed extension to an existing bail and probation hostel, the Court of Appeal was concerned not with unjustified public perceptions, but with concerns which the Inspector found were fully justified given that the existing hostel had already given rise to considerable disturbance to local residents living in a quiet residential street. He concluded that the proposed expansion of the hostel would be likely to increase disturbance in the area significantly. This was clearly a land use planning impact. Pill LJ (pg7) summarised three propositions arising from the legal authorities: (1) the impact of a proposed development upon the use of and activities upon neighbouring land may be a material consideration; (2) in considering the impact, regard may be had to the use to which the neighbouring land is put and (3) justified public concern in a locality about emanations from land as a result of its proposed development may be a material consideration. In the 1st two propositions, the Judge is stressing the need for the perceptions to relate to land use planning considerations (contrary to NCC's suggestion – AUG6 p90) and in the 3rd proposition the importance of the perception being justified is recognised. The Inspector emphasised that there were reasonable grounds for the fears expressed by the local residents and therefore for that to be a material consideration, but added that "unsubstantiated fears, even if keenly felt, would not have warranted such consideration" (OD86 pg388).
- 2.127. In Broadland DC (1998) (OD60), the Court was concerned with a proposed hostel for single lonely people which had attracted a substantial number of objections that the occupants (AUG6 p91) would pose a security risk in the area. Officers had recommended that these concerns should be left out of account as they were not material planning considerations. The Court held that they were material to planning as they could affect local residents in the enjoyment of their homes and their use of the highway. However, it declined

to quash the decision because the Committee had been advised that even if those considerations were taken into account they would not justify a refusal. This judgement confirms that perceptions which relate to the use of land are material but that the weight to be attached to them is a very different matter.

- 2.128. In Trevett (2002) (OD68), the Court was concerned with telecom equipment. The sole ground of challenge was that the Inspector had failed to have regard to a material consideration, the residents' fears about health implications. The Court rejected that challenge because the perceived adverse effects on health had been identified by the Inspector as one of two main issues and had been properly addressed by him. Of note is the Inspector's reasoning, which the Court supported, for the limited weight he attached to those fears. The Inspector gave greater weight to the findings of national and international bodies which had drawn on a broader range of expertise and concluded that the locals' fears were not supported by the available technical evidence. The Judge observed (p25) that, as in the present case "...it is equally erroneous.....thatperceived risks to health that justifies a refusal of planning permission without any regard to the extent to which those fears are objectively justified in the circumstances of the particular case and given the particular characteristics of the site in question".
- 2.129. In the Augean appeal, the technical evidence in the Radiological Risk Assessment has demonstrated that, applying standards approved nationally and internationally, there would be no material safety implications arising from this proposed development, a position which has been unequivocally endorsed by all the technical consultees and the Council's appointed independent expert. That technical evidence and the unanimous endorsement of it by the mainstream scientific community deserves significantly greater weight than the extreme hypotheses advanced by Dr Busby for WW (AUG6 p92), who sits at the farthest extremity of the scientific community.

Policy Guidance

- 2.130. PPS23 (2004) (PP6) at AppxA, in advising on what may constitute a material consideration, refers in the 1st indent to the possible impact of potentially polluting development on health, the natural environment or general amenity. This is addressing the proposal's propensity to give rise to actual impacts and, in the present case, NCC does not allege that there would be any actual harm. Its case is confined to concerns about the effects of perceptions, which are dealt with in the penultimate indent of AppxA, which refers to the objective perception of unacceptable risk to the health or safety of the public. The separate Annex 1 to the PPS (PP6A p1.58) states that for the actual or perceived level of risk to be material to the consideration of a planning application, the land use planning consequences of such risks or perceptions should be clearly demonstrated.
- 2.131. Thus, the advice distinguishes between actual harm and perceived harm and both types of harm can be material so long as they relate to land use planning matters and, in the case of perceptions, they must be objectively held. This is in accord with the legal authorities and is followed in deciding planning appeals. Prof Kemp for NCC accepted that his proof had wrongly

disagreed with the proposition that the perception of harm could only carry weight if it had land use consequences (NCC8.1 p7.9).

- 2.132. PPS23 does not offer guidance on how the objectivity of the perception should be assessed. However, the Costs Circular (C03/2009 at B21) advises that in assessing the weight to be given to local opposition, authorities should make their own objective appraisal and ensure that there is substantial evidence to support any objections relied on. This approach is equally applicable to assessing the weight to be given to perceptions and shows that something more than the objector's own perception is required: otherwise it would be purely subjective. Further, the perception needs to be supported by evidence or it would be little more than an unsubstantiated assertion.
- 2.133. PPG8 (2001) (PP33) advises that where proposed telecommunications equipment meets the internationally recommended guidelines for public exposure to radiation it should not be necessary to consider further the health impacts and concerns about them. Thus, perceptions of harm to health in relation to proposals which meet international standards are not to be accorded weight.

Appeal Decisions

- 2.134. In Kirk Sandall, there was a huge volume of opposition to the proposed waste treatment centre (OD40 report p9.8.4). The Inspector concluded on the question of public perception that if the development proceeded there would be very many people who would feel constantly ill-at-ease, irrespective of the reassurances that any dangers or health risks would be remote (p9.8.9) and drew particular attention to the fact that the proposed plant would be too close to the population living and working in the area (p9.14.29). He combined his consideration of this issue with the effects on the local economy and on this issue concluded that there would be serious damage to the prospects for the strategically identified industrial estate (p9.8.15) largely on account of the perceived risks of contamination of food at nearby factories which he concluded were unacceptable (p9.15.10). Thus the Inspector had clearly been satisfied that the perceptions in that case were justified and would give rise to seriously harmful land use impacts: it is far from being an example of an unjustified perception alone leading to a recommendation of refusal, even ignoring the many other reasons the Inspector gave for his recommendation. In the event, the SoS side-stepped the issue by dismissing the appeal solely on the ground of risk to the aquifer (Decision p10 and 16) and in relation to the public's health fears only stating that he "noted" those fears and took them into account "insofar as they are relevant to the land use planning decision"(Decision p9).
- 2.135. At Leominster (OD42), while the Inspector considered that unsubstantiated health fears were not irrational and should be weighed in the balance, the appeal was dismissed because of actual harm that the antenna would cause to the living conditions of the neighbours, a mere 8.5-9m away.
- 2.136. At Chesterfield (OD43), the Inspector was concerned, not with perceptions, but with actual harm (AUG6 p99). At Yanley Quarry, Bristol (OD44), the Inspector found that the risk of direct harm was so small that it did not carry

significant weight and, with regard to perceived harm, concluded that the fears, although strong and genuinely held, were insufficient in themselves to justify refusal. The wind farm proposal at Helmsdale (OD45) was not rejected on account of perceptions even though the Reporter regarded them as powerful material considerations (AUG6 p101). In a Sowerby Bridge appeal (OD46), the Inspector took account of perceptions, but dismissed the appeal because of the unacceptable risks of fire and odour nuisance (AUG6 p102). In the Margam opencast coal appeal, the Inspector rejected perceptions of harm to health because there had been no objection from the local health bodies or any statutory consultee and in the absence of "any reasoned objection on practical grounds" (OD47 report p14.93).

- 2.137. In the Aldershot appeal (OD48), the Inspector was satisfied that there would be no actual risk to health but the perceptions of harm caused by the telecom mast would have a detrimental impact on residential amenity. At Fareham (OD49), the same Inspector reached similar conclusions. In the Gaerwen appeal (OD54), the proposal was dismissed by the Minister contrary to the Inspector's recommendation but he agreed with the Inspector that only restricted weight could be attached to perceived health fears (report p12.47) (AUG6 p105).
- 2.138. Having reviewed all the appeal cases relied on by NCC, it is clear that in none did the appeal fail because of perceived harm on its own, whether the perception was justified or not. Where perceptions feature in the reasoning, they are at best additive factors in situations where actual harm has already been found likely to result from the development. Inspectors are astute to consider whether land use impacts would result and in considering what weight to attach to the perceptions, having regard to whether they can be objectively justified by reference to, for example, particular site or siting factors and the opinions of statutory consultees.
- 2.139. Appeal decisions introduced by Augean are highly relevant to the issue of perceived harm. In the recent Garston decision, the Inspector concluded that, despite the strength of feeling on the matter, there was no reasonable basis for the fears that the development would harm the area's regeneration, that those fears were based on misconceptions and were not supported by a robust evidence base. Accordingly she attached little weight to what she found to be largely a baseless perception (OD73 p23, 53-57).
- 2.140. In the Eastcroft incinerator appeal, the Inspector reviewed a number of appeal decisions. In relation to the many concerns about health risks, he drew attention to the need for a realistic interpretation of other risks that are present in society generally. He attached weight to Government advice on the health risks of incinerators and, despite objections from local GPs about actual harm to health and the PCT's conclusion about perceived risks, decided that there was nothing to lead him to recommend refusal (OD61, AUG6 p108). In the Ineos Chlor (OD62) decision, the SoS acknowledged the concerns about health impacts but concluded that he should not seek to duplicate the role of the EA and that such concerns could be addressed in the Environmental Permitting process.

- 2.141. At Belvedere (OD63) there were considerable concerns and fears about health and other impacts that the incinerator would cause: perceived harm was a main issue for the local community and the Waste Planning Authority (AUG6 p110) who called an expert witness in risk communication. He found there was a “clear gulf” between the public perception and the results of expert and objective appraisal of the merits of EfW generally (OD63 report p12.183-186), as in this case. In relation to the expert evidence, the Inspector considered it to be “somewhat intangible” and had been unable to detect any specific or convincing evidence of land use or planning consequences arising from the negative perceptions of the local community. The same criticism applies to Prof Kemp’s evidence for NCC; his only reference to impact was (NCC8.1 p7.9) in connection with the common effects of heightened perception of harm, namely anxiety and headaches, sleeplessness and malaise which he accepted were of universal application and not specific to this proposal. Not a single person who spoke at the inquiry referred to experiencing such effects, notwithstanding the concerns in the community (one concern only – AP15.33 - was raised, after hearing Mr Miles’ evidence).
- 2.142. In the Ince Marshes case, the Inspector records (OD64 report p11.19 and 11.22) that there were widespread concerns and perceptions about health problems in the local community which were shared by local GPs and the PCT. Nonetheless the Inspector considered (p11.24 & 11.27) that considerable weight should be given to formal expressions of official opinion contained in Waste Strategy England (NS1). A similar approach should be adopted in the Augean case for the guidance in PPS10 (PP30 p30). He found there was no reason to assume that the pollution control regime would not be properly applied and he concluded (p11.28) that the widespread concern which had given rise to anxiety was in direct conflict with the position taken by Government in a statement of national policy, that that should act to allay anxiety in the public at large and that, in those circumstances, public anxiety should not carry great weight in the planning decision. The same reasoning should apply in the present case.

The Position Here

- 2.143. Prof Kemp’s evidence contributes little to assisting the SoS’s decision on the materiality of the perceived harm and the weight to be attached to it. The Professor’s focus on risk communication is of little assistance now, at the end of the community engagement on the application, when we are concerned with the results of that exercise rather than with what else should have been done in that process. In any event, his main criticism that Augean should have adopted a Dounreay type full options appraisal rather than a “decide, announce and defend” approach on a single option was shown, and accepted by him, to have been misplaced and that the more appropriate template was Lillyhall (T63 pg2, pg15/16), which Augean closely followed. When the Professor’s paper to the Inspectorate is considered, it is clear that Augean followed many of the suggestions for communicating risk suggested at the 1st two levels on (OD37 pg20). Indeed, he praised Augean for its prodigious efforts to inform the public and for its carefully planned and professionally executed consultation steps. As he agreed, however, in an area such as this with no familiarity with the nuclear industry, the level and nature of the

perception of harm was to a large extent inevitable and little could be done to alleviate it. There was nothing novel or unusual about the many risk factors he listed: they have been around since at least the 1980s and most were addressed in RSRL's letter of June 2010 (OD67), before he was engaged by NCC. Augean's consultation exercise is agreed to have met the requirements of NCC's Statement of Community Involvement (AP2 p9.1) and satisfied the requirements of the EA (EA3 requirement 2, EA9 p49,12.3). No-one challenged Augean/Dr Wilson's evidence that there had been compliance with the Royal Town Planning Institute's (2010) Good Practice Guide to Public Engagement (OD32, AUG3.2 p10.1, AUG3.3 Appx6 and Appx9, PA2 pg52 p12.39).

- 2.144. Prof Kemp did not deal with the weight that should be attached to perceptions raised in this case or suggest how weight should be assessed (AUG6 p113). He conceded that lesser weight would attach to unjustified perceptions and he agreed with Glidewell LJ's formulation in the Gateshead case that unjustified fears could not be conclusive. He made no attempt to deal with assessing whether perceptions were objectively justified and concentrated on negative drivers of perception, not seeking to deal with the positive factors or to present a balanced position.
- 2.145. His belief (NCC8.1 p2.3.1) that there is now a widely accepted argument against distinguishing between real risk and perceived risk is at odds with the approach in PPS23. Similarly, his comments about technically assessed levels of risk (p4.6) are contrary to the risk-informed approach of the 2007 LLW Policy (PP22). He accepted that the risk assessment had been properly conducted and had used very conservative assumptions. He respected Dr Denman's expertise and the advice that he had given to NCC and agreed that an excess risk of serious health effects or death of around 1:1,000,000 pa should give rise to no concern (AUG4.2 p7.2, AUG6 p114). He had no concerns about actual health impacts and agreed that the public should be reassured by the unanimous position taken by PCT, HPA, HSE, EA, FSA, NCC and Dr Denman (AP4, PA12). In addition, great weight should be given to the evidence of Prof Wakeford who has spoken with considerable experience and authority that this development would not give rise to any material risk to the community. That evidence should reassure local people and demonstrate that Dr Busby's extreme views are untenable.
- 2.146. Prof Kemp identified no specific land use impact that would arise from the negative perceptions. General concerns about anxiety fall within the province of the EA and are only tenuously material, if at all, to a planning decision. Simply to claim that the change of use would be seen to be harmful, as NCC contends, does not move from the perception itself. What has to be shown is a harmful land use consequence.
- 2.147. NCC suggests that affecting other people's enjoyment of their homes and land would be a planning consequence but it has not demonstrated what that effect would be, other than an unspecified "effect on amenity". This is really no more than the intangible, unspecific and unconvincing assertions of which the Belvedere Inspector was so critical (OD63 pg279).

- 2.148. Despite the 24 years' experience of landfilling LLW at Clifton Marsh, there is no evidence that it has caused any harm in the area (OD6). Moreover, the Strategic Environmental Assessment of the NDA Strategy (NS19 pg4) did not reveal any negative effects on property values or other impacts that were materially different from those associated with non-radioactive landfills and, significantly, the local community has raised no real concerns about Augean's operations at the ENRMF hazardous waste site over the last 4 years or so. The EA states that it has no evidence that any radioactive waste disposal it has authorised has had any effect on house prices (EA2).
- 2.149. Cllr Heather Smith raised a concern about impact on a proposed major tourism development nearby at Rockingham Forest but the promoters of it (AP15.13) have not spoken at the inquiry and are apparently proceeding with an application in full knowledge of the appeal proposal. WW claims (KCWW4 p76) that the tourism scheme would be a model of sustainable development but there is no evidence that putting over 1,000 units of accommodation in a rural area would be sustainable. Also, the KC Parish Council "would strenuously resist any such application" (OD71). There has been no suggestion that implementation of the permission for 150 dwellings on the northern side of KC would be affected by the ENRMF proposal.
- 2.150. A written objection from Howard's Farms has been supplemented by Mr Andrew Howard's evidence at the inquiry (AP15.9, AP15.31). Their concern about insurance is misplaced (AUG6 p117) and it is difficult to understand why the addition of LLW to the permitted hazardous waste stream would have any incremental detrimental effect on the farm or the haulage business, and no specific land use impact on the latter is suggested. Any concerns about compromising the safety of his staff and employees at the business on the other side of the road from the appeal site are not justified, given the HSE's satisfaction that workers on the appeal site itself would have a safe work place and an exposure to radiation significantly below recommended standards for the workforce (See also AP2 p6.6 and PA12 AppxD pg5 p4). If it is safe for workers on site, how much safer would it be for the Howard's employees on the other side of the road and separated by a visual screening bund that has been ignored for the risk assessment.
- 2.151. Fears have been raised about Augean's safety record. There have been no prosecutions of Augean at the ENRMF but there have at Thornhaugh because of overfilling the site by the previous operator (Augean acquired the site in 2004) and for remediation without authority from the EA; Augean had thought that the process in question had been approved and it subsequently was. A prosecution at Cannock (which is a chemical treatment works, not a landfill), after Augean acquired the site in 2005, stemmed from a rogue load of waste in Sept 2006 which had not been accepted and was being checked when it caught fire; the site was being improved and brought up to standard; many drums on site had to be analysed to check the appropriate way to deal with them; new management was brought in.
- 2.152. Every health and safety incident is required to be reported at all Augean's sites, including 'near misses' and no matter how small the incident, in order to engender a culture of safety. This level of reporting has led to an apparent increase in near misses. However, an independent report in 2009 gave the

site 92.5% for health and safety, 97.5% for environmental performance, and 93.9% for quality management (OD8, OD8A).

- 2.153. Objectors have concerns about two small businesses in the locality, one producing eggs and the other making baskets (AP15.11, AP15.21): it is difficult to see - if those businesses happily co-exist with the hazardous waste landfill - that the appeal proposal would give rise to any incremental effect. Mr Leuchars of WW explained that the "most significant" aspect in relation to the perception of harm would be the effect on house prices, while candidly recognising that even the actuality of such an effect is not a valid planning consideration. In any event, there is no evidence to suggest that there would be any harmful effect on property values.
- 2.154. Augean recognises that the fears and perceptions of local people are genuine, not malicious or hysterical, but that does not mean that they are necessarily material in a land use planning sense or, even if they are, that they are deserving of weight. However sincere they may be, the perceptions are neither rational nor reasonable and have not been objectively justified or are capable of objective justification. They are in direct conflict with clear guidance from Government, diverge radically from the common opinion of all the statutory technical consultees, are in part based on an irrational distrust of the competence of the EA and they fail to pay proper regard to the results of the Risk Assessment, which have been reviewed and approved by NCC, its officers and by all the statutory consultees as well as by Dr Denman, NCC's specifically engaged independent expert.
- 2.155. There is a wide gulf between the scientific evidence/technical assessment and the lay opinion in the locality, based on misperceptions, misconceptions and misinformation. The maximum radiation dose that a member of the public could receive is, even adopting extremely conservative assumptions, so tiny that it should when objectively assessed give rise to no concern. As Professor Wakeford explained, anyone concerned about this level of risk would have to lead a very strange lifestyle that would rule out moving around the country, visiting shops, friends' houses and so forth. To the extent that the perceptions have been caused or exacerbated by the provocative head note to the petition (AP16), the information circulated in the community by Waste Watchers or to the grossly alarmist and misleading information disseminated by Dr Busby, that only serves to reinforce the irrationality of and lack of objective justification for those perceptions. The perceived harm is unjustified, it cannot be accorded any significant weight and cannot be regarded as conclusive. Indeed, if this appeal were to fail on account of perceived harm, it is difficult to conceive where a supply chain landfill site would ever gain permission.

Wastewatchers

- 2.156. One should commend Mr Leuchars and his fellow Wastewatchers for their industry and tenacity but, while their activities have heightened awareness of the appeal proposal in the local community, they have also spread unjustified fear and alarm. WW formed itself into a protest group before the application was submitted. Despite criticisms of Augean's community engagement, WW never took up Augean's 'open door' invitation to meet and discuss the

proposals. Instead, it sought open public confrontation which was unlikely to inform and potentially would radicalise public opinion further. The decision to call Dr Busby as an expert witness and to rely on and widely disseminate his views throughout the community knowing full well the inflammatory and extreme nature of his views was unfortunate (AUG6 p120).

- 2.157. Is WW's evidence fairly representative of community opinion? There is no membership and it appears to be a loose association of a small number of individuals, with a possible core group of 10-12 people living mainly in KC, most of whom have given evidence at the inquiry. It is extraordinary that Mr Leuchars was unaware of the Liaison Group but, if so, it suggests a lack of familiarity with village life. WW's actions led a number of Parish Councils to object to the proposals but, significantly, there are other local Parish Councils that have not done so, as it appears that only 6 out of the 25 consulted objected. Compared with the size of the local population, the number of households that have objected is not impressive and, despite the alarmist head note to the petition, the number of signatories is only a small proportion of the community that WW claims to be at risk.
- 2.158. WW seeks to attack recently announced Government policy on LLW and argue that LLW should never be moved from the site where it arises. And, if it does have to move, then WW contends that it should be held in Dounreay/Drigg type vaults and – as a test case in conflict with the Government's policy - not in a landfill. Dr Busby has seemingly used the inquiry and its attendant media attraction as another means of pursuing his crusade against the alleged iniquities of the ICRP risk model.
- 2.159. Much of WW's case is well beyond the scope of a land use planning inquiry. PPS10 and 23 (PP5, PP6) are clear about the separate roles of the planning and regulatory authorities. The prevention of harmful emissions from the site, the assessment of radiological risks and the assessment of the health implications, for example, are matters for the EA and other regulatory authorities; planning decision-makers are required to assume that such authorities will perform their roles properly, yet WW has raised many concerns it had raised previously with the EA, each of which the EA refuted (EA9 pg23-56). Many of the concerns were based on simple misunderstandings, misconceptions or misinterpretations of technical information, which was perhaps understandable but, unfortunately, the publication of such views exacerbated public concern.
- 2.160. NCC's Statement of Case referred to Harrison (OD80) (NCC1 p51) where it was held that, although the thrust of the PPS guidance was that planning authorities should focus on the impacts of any harmful emissions rather than the control of the emissions which was a matter for the regulatory authority, this did not mean that they should subjugate their judgement on impacts to the pollution control authority or that all pollution issues could be left to the EA. However, in this case NCC does not suggest that the development would cause any direct, actual harmful impacts. (See also AUG3.3 Appx7 - EA comments on where a landfill may be suitable on a major aquifer.)
- 2.161. As to land use planning issues, Mr Leuchars' proof says very little about possible land use impacts. In supplementary Examination in Chief on the

perception of harm, he referred to 3 matters: the prospect of real physical harm; mental anxiety; and the effect on house values. The first matter is a concern about actual, direct harm, in conflict with the stance of NCC. 'Mental anxiety' is not objectively justified and it is to be hoped that the inquiry process, including the Inspector's report and the decision letter, if the appeal is allowed, will assist in dispelling those fears and any anxiety caused, albeit that the inquiry has not heard any substantial evidence that such mental anguish has yet been caused.

- 2.162. Mr Leuchars is critical about the suitability of this location for the proposal. The fact that the existing hazardous waste landfill has not, under Augean's ownership of the site, given rise to any material off-site impacts is powerful evidence that the addition of limited quantities of LLW to the waste stream would not do so either. His proof (KCWW1.2 p35) refers to the "security, peace and a tranquil life in a beautiful setting" and in his XX of Dr Wilson stated that the community has "rubbed along more or less OK with the hazardous waste site". Note also that Mr Andrew Howard (AP15.31) stated that "The site appears to operate with minimal impact to both our business and the local community." Its suitability for the currently permitted use would apply equally to the appeal proposal. The area is sparsely populated, with few dwellings within 1 km of the site, centres of population are well removed, the area is not the subject of any landscape or other designation, there is easy and safe road connection to the strategic highway network, there would be no impact on the natural, historic or cultural environment and the site is suitably engineered under the current permission to accommodate LLW. There is no justification for claiming that tourism in the area would be affected or that the local economy would be harmed in any way.
- 2.163. Mr Leuchars wishes to avoid the community becoming dependent on financial "handouts" but fails to take account of the considerable benefits the community has already derived from the Landfill Tax Credit scheme. Indeed, Augean has funded KC by some £437,000 since 2004 by the Landfill Communities Fund (OD2 pg62), plus money to other communities in the area. There is also Augean's direct sponsorship of local activities and clubs. More money would be provided from the proposed community fund in the S106 Agreement (PA9).
- 2.164. Much was made of local people's life-style choices; they seem content to live in an area containing a hazardous waste landfill and to experience much higher levels of radon gas than other parts of the country and it appears illogical to be so opposed to the addition of LLW to the waste stream when the maximum dose that anyone could receive (making extreme assumptions) would be such a tiny fraction of the radiation levels to which they are already exposed, and some 500 times less than the radon action level in their homes (Prof Wakeford explained that an affective annual dose of 20 microSieverts or 0.02mSv - assessed from standing on the site for 8 hours a day - is very small, that the current radon action level in the UK is 200 Bq/M³, which is an annual effective dose that is broadly equivalent to 10mSV pa, and 0.02mSv is 500 times less than this.)
- 2.165. Dr Busby lamented the attacks on his credibility, saying "it's always the way". But it is hardly any wonder given the nature of his evidence, his agenda and

'previous form' and the way in which he seeks to denigrate anyone who opposes his views (KCWW2.2 pg3, AUG6 p127). He condemns the entire international, European and national mainstream scientific community and regulatory authorities, with accusations of criminal and other reprehensible conduct (see T21 pg5 p18). For example, Prof Wakeford is described as "rather daft", accused of scurrilous blogging and lacking all knowledge of biology and the EA is described as a "bunch of idiots".

- 2.166. Dr Busby's credibility is hard to discern (AUG6 p128). His self-created body, the ECRR, is of dubious status; its membership is difficult to identify. The status of the Lesvos Declaration has been called into question; its 2nd declaration is not an endorsement of Dr Busby's key claim that the ICRP risk model is out by a factor of 1,000-10,000. That claim, that the risk model is seriously underestimating the risks associated with internal emitters, has been very carefully addressed by CERRIE, COMARE and HPA. While it has been accepted that the model may vary in either direction by a factor of up to 10 for internal emitters (AUG4.3(3) pg29), as compared with a factor of 3 for external exposure (T21 pg9), these bodies have rejected in forceful terms that the magnitude of the variance is anything like that which Dr Busby claims. The HPA has repeatedly confirmed its confidence in the ICRP risk model, which was revised and updated following CERRIE and the 9th COMARE report (AUG4.3(3), HPA8, 9 and 12 and the HPA's response HPA13 to Dr Busby's proof). The HPA documents were variously traduced as a 'whitewash' or 'demonstrable nonsense', as was ICRP's own commentary (ICRP9 pg195-196).
- 2.167. Prof Wakeford is 'at a complete loss to understand how (Dr) Busby can argue ill health effects within 50 miles', which he describes as a "greatly irresponsible unjustified assertion". The rate of decay of radiation from a point source is the inverse of the square of the distance (i.e. it is more than a linear fall off). Many of the claims Dr Busby made were described by Prof Wakeford (AUG6 p129) as irresponsible and serving to spread fear and alarm in the community, such as the comparisons between the radiation at depth within the landfill and the surface radiation levels in the Chernobyl exclusion zone, the Windscale fire and the references to the KiKK study (T26) and clusters of childhood leukaemias. More balanced views exist (T43 pg6 on Chernobyl and HPA8 pg12 on KiKK). The KiKK study was purely related to distance from the source and is affected by living, for example, on a farm and eating local produce rather than food from a wide area. While the KiKK study authors reported a statistical association between nuclear sites and leukaemia, they did not link that with ionising radiation (T26 Conclusions); others did. And as most of the public get their information from the media, which provides a general background to the dangers from radiation, this is not borne out by the scientific reality.
- 2.168. Dr Busby had not read any of the evidence to the inquiry and was not familiar with the relevant planning policy and guidance. He displayed a cavalier approach to facts, as Dr Valentin's letter reveals (AUG4.4).
- 2.169. Dr Busby's claim that radionuclides have been missed off the list in the draft Permit is wrong (KCWW2.2 pg51 table 5.3.1, EA9). In Column 2 of Table 5.3.1, he lists the parent series and the 'missing' nuclides in the left hand

column. These are the daughter nuclides in the risk assessment (PA2 AppxC Annex B Pg12 table 2.5 with "Daughters" in right hand column. The ones 'missing' are the short half life daughters – note beneath table). It is standard practice to list the head of the chain or parent radionuclide without reference to the daughters. Thus, if the head is present, the daughters will be also.

- 2.170. Prof Wakeford explained that all children in the UK in 1963 received a radiation dose of 0.2 mSv from nuclear weapon testing fallout. Had Dr Busby's claims about the effects of very low doses of radiation been correct, that would have resulted in waves of leukaemias across the northern hemisphere but that did not occur (AUG6 p129).
- 2.171. Whatever view is taken about Dr Busby's contribution to the inquiry, it could not lead to the abandonment of the ICRP risk model that forms the foundation for risk assessment in the UK and internationally. Such issues are plainly beyond the scope of this inquiry. It would be impossible to conclude that the risk model is "dead" or that there is any credible scientific disagreement over the risk coefficients derived from it. His suggestion that radioactive waste should remain forever at the site of its origin and be simply fenced off is totally impractical and reveals a complete lack of understanding of Government policy on decommissioning.

Localism

- 2.172. It is currently unclear what this concept means and what changes to current procedures and guidance may be introduced. As matters stand, there is no reason not fully to apply current guidance on the weight to be given to local opinion. It is not the case that the existing procedures do not give proper ability for local opinion to affect the decision-making process. Local people had a very full opportunity to influence the decision of NCC (AUG6 p131). Augean's efforts in engaging the public were described as "Heraclean" by no less a person than a professor of risk communication (see also NCC6.1 p6.8). In addition there have been consultation exercises carried out by NCC in connection with the application and the EA in relation to the Permit and KC Parish Council also carried out what it described as an "extensive consultation process" (letter in AP4). Considerable local media coverage heightened public awareness. Further, this inquiry has given WW and individual objectors the fullest opportunity to give evidence and to articulate their objections.
- 2.173. The Inspector and the SoS will have to decide what weight should be given to those objections but planning decisions, at least on the basis of current procedures and guidance, are not made on the basis of polls, plebiscites or petitions. The meaning of the reference to "public acceptability" as an overarching expectation in section 2.1 of the LLW Strategy (NS17) is nowhere explained but cannot mean that the proposal must be supported by the totality or any particular proportion of the local populace. In any event, in the present case the number of objectors is but a small proportion of the total population of the area claimed to be at risk from this proposal. If a crude head-count of those in favour and those against proposed development of

this nature were to be the basis for decision-making, then locally unpopular land uses would never receive permission, whatever the need for them.

- 2.174. Significantly in this case, the SoS recovered the appeal to decide it himself because it related to development of "major importance having more than local significance" (AP12). It is in cases like this, where the benefits and disbenefits of the proposed development are not confined to the local level or experienced only in a local community, that the decision needs to be taken at a higher level than the local community, whether that means the County, District, Parish or neighbourhood. It is, in this case, only at the national level, as the SoS recognises, that proper weight can be given to the national dimension that the case involves, particularly if this is the first "test" of the new LLW Policy and Strategy as some have claimed. The principle of landfilling LLW is of course not novel in the UK and the recent permission for the extension at Clifton Marsh was taken subsequent to the publication of the 2007 policy statement.
- 2.175. There seems to be little disagreement on localism between Augean and NCC. Mr Miles did not accept that localism required more weight to be given to the views of Parishes and local people. Mr Aumônier had difficulty understanding what localism meant in the absence of any explanation of what it was and how it was to be delivered. However, he thought that it would not make a great deal of difference because considerable weight was already attached to local opinion and he had, therefore, not thought it necessary to address it in his proof. He did not think that it would lead to decisions being taken below District level.

Precedent

- 2.176. Firstly, would a permission here set a precedent or in some way predetermine the outcome of any application that Augean makes in mid 2011 for an extension to the site? Secondly, would the outcome of this appeal set a precedent for or have a material bearing on applications relating to LLW that may be made by others on other sites?
- 2.177. The Courts have considered the materiality of precedent. An early authority, and perhaps the classic exposition on the matter, is Collis Radio (1975) (OD85) where Lord Widgery CJ stated that if planning permission is granted for a particular form of development on site A it is very difficult to refuse similar development on site B if the circumstances are the same. Thus, the essential ingredients for a valid precedent argument are that similar development is proposed on two (or more) sites where the same circumstances apply.
- 2.178. These ingredients would be lacking in the first situation referred to above. This appeal concerns only an additional waste stream into a permitted void for a strictly limited period to mid 2013. There is no change to the permitted landfill area, the permitted void space, the permitted restored landform and its after-use or the timescale of the permission itself. The extension application would be quite different involving an extension of time of some 13 years beyond the current permission and the creation of an entirely new void space. The considerations relevant to that application would be different

from those applying to the present appeal proposal. The issue of 'need' would be very different from the short-term, temporary timescale of the present appeal: for example, provision may be made or planned elsewhere for LLW management capacity. Matters relevant to the waste hierarchy and proximity principle may well be very different if other management options for LLW disposal including other landfills become available or are likely to do so over the extended timescale of that proposal. The impact from operations at the site over that extended period would clearly be different from those currently under review involving, as they do, no extension beyond the permitted lifetime of the site. Landscape and visual impact issues would have to be addressed along with hydrogeological, hydrological and ecological impact, assessments which are unnecessary for the current appeal. Different transport and highway issues and different development policies may arise and so on.

- 2.179. Given that neither the development nor the circumstances applicable to the envisaged extension application would be the same as those applying to the current appeal, it is difficult to see that the outcome of this appeal would predetermine the outcome of the further application or in any way prejudice the consideration of it on its own merits. If the SoS were to allow the current appeal, he would be able to make it clear in his reasoning that his decision is not to be seen as influencing the outcome of any further application that may be made. Significantly, while NCC argues that the appeal application ought to be determined together with the extension application, it has not raised any concern on precedent. The Inspectorate has already ruled (AP13) that allowing the appeal would not necessarily lead to the grant of permission for an extension of time or area.
- 2.180. So far as other sites are concerned, it is impossible in the abstract to speculate whether allowing this appeal would have any bearing on other applications which may come forward. There may well be widespread interest in the outcome of the appeal, particularly as it will be the first appeal under the new LLW policy and strategy but that is inevitable whenever new policy is promulgated and cannot be a proper reason for not granting the first proposal to come forward. There is no evidence that it would have any deterrent effect. Any "cornering of the market" would only apply for the temporary two year period; in reality the grant of permission would not give Augean any monopolistic position in view of the continuing requirement for LLW consignors to comply with BAT/BPEO and the proximity principle. Nor would permission here lead to other WPAs not making suitable provision in their own Waste Development Frameworks for LLW given the very short timescale in the appeal proposal. Any encouragement that it may give to other applications would perhaps help the industry overcome its reluctance to grapple with LLW (e.g. see NS13 p5.19-20), to deliver the disposal opportunities that the UK Policy and Strategy seek.
- 2.181. Consideration should also be given to the consequences of dismissing the appeal and what message this might send to the market and what effect that would have on achieving the new policy's objective of providing new, fit-for-purpose, cost-effective disposal options generally and landfill sites in particular. The probable message would be that there is no point in applying because strong local objection, whether or not objectively justified, will result

in rejection. That surely cannot be the message that the Government wants to convey.

Conclusions

- 2.182. There can be no tenable suggestion that Augean is not a suitable operator to manage disposal of LLW. The EA is satisfied with Augean's suitability and NCC's independent adviser, Dr Denman, was impressed by the company's management ethos to follow safety requirements.
- 2.183. The appeal site has suitable engineered containment to accommodate LLW. Landfill techniques offering a higher degree of containment are not necessary and would provide no material benefit.
- 2.184. There is every expectation that the EA will shortly issue the Permit. It is satisfied that disposal of LLW at the site would not cause material harm to human health or the environment.
- 2.185. All statutory consultees are unanimous that the site would be operated well within appropriate international, European and national radiation safety standards.
- 2.186. Dr Denman is satisfied that the site would be operated safely. NCC does not suggest that the proposed development would cause actual harm to health or the environment.
- 2.187. The maximum assessed radiation dose received by a member of the public, even making extremely conservative assumptions, would verge on the trivial. There is no rational or justifiable basis for fears and perceptions of material harm to human health or the local economy which, accordingly, should not be accorded much weight.
- 2.188. There would be no off-site non-radiological impact.
- 2.189. There is a compelling and urgent need for LLW disposal capacity in the period to 2013. Legacy waste from nuclear installations in central and southern England should be disposed of as soon as practicable. The nuclear decommissioning programme is being delayed by the lack of an appropriate disposal route and the resultant delay and management costs to the taxpayer are very substantial.
- 2.190. The appeal site represents the nearest appropriate installation for such waste. Any LLW disposed of at the site would represent BAT and therefore accord with the waste hierarchy and proximity principle.
- 2.191. There is surplus void capacity at the site for the remainder of its permitted life; the disposal of the modest quantities of LLW envisaged would not displace any hazardous waste that would otherwise be accommodated.
- 2.192. There would be no change to the permitted engineering or landform or restoration of the site. It would be a stand-alone development in no sense dependent on any further application to be made. It would not lead to any

predetermination of that further application which would be considered on its own merits in the light of a totally different set of circumstances from those applying to this appeal.

- 2.193. The proposal would represent an appropriate sustainable form of waste management with regard to its location, transport and technical matters, environment and policy.
- 2.194. NCC Officers recommended unequivocally that permission should be granted. NCC has been unable to show that it had good reasons to reject that advice.
- 2.195. The proposal would represent an excellent fit with the UK LLW Policy and Strategy as well as relevant guidance in PPS10 and PPS23. It would accord with relevant policies in the development plan.
- 2.196. Any residual objections that may exist to the proposal would be outweighed by the need for LLW disposal capacity.
- 2.197. The Inspector is urged to recommend that the SoS should allow the appeal and grant planning permission, subject to conditions and the S106 agreement.

3. THE CASE FOR NORTHAMPTONSHIRE COUNTY COUNCIL

The material points are:

Policy – The Development Plan

- 3.1. Currently, the Development Plan (DP) includes the East Midlands Regional Plan (RSS) (PP7), the saved policies of the Northants Waste Local Plan 2003-2016 (PP9) and the MWLP Core Strategy (PP15). Although the RSS has been 'revived' by the recent High Court decision (Cala Homes), the SoS has indicated that it will be revoked by primary legislation. The RSS has no policies that deal specifically with LLW but its policies include reducing the amount of landfill in accordance with the EU Landfill Directive (PP7 p3.3.57) and aiming for a centralised pattern of facilities for waste management based around the expanding urban centres (PP7 Policy 38 and p3.3.72).
- 3.2. The saved policies of the WLP include Policy 2, but that will be replaced by a combination of the Core Strategy and, when adopted, the Location for Waste DPD. The latter (PP20) is at an advanced stage, having been through its examination, with final suggested changes having been submitted to the Inspector. The Inspector's Report is due to be received by the WPA in January 2011, and the DPD may be adopted before the SoS determines this present appeal.
- 3.3. The Submission Control and Management of Development DPD, August 2010 (PP32), has commenced its examination and the Inspector has indicated that he may deal with that examination by written representations. Again the Inspector's Report should be received in January 2011 and this should allow for the two DPDs to be adopted at the same time.

Conflict with the Development Plan

3.4. The main issues:

- the appellant's case rests on an assertion that LLW landfill is of a specialised nature requiring specialist facilities: this is not accepted by NCC (see report p3.11 below).
- The ENRMF is recognised in the DP as a specialist facility for the disposal of hazardous waste, and the Plan proposes that its role as such should be maintained (PP15 p6.28). The introduction of LLW as an additional waste stream thus conflicts with the DP policy.
- NCC disputes the appellant's contention that 'the proposal is fully in accord with all relevant policies and provisions of the Development Plan' [AUG1.2 p6.68]. This cannot be the case where the DP contains no policies that relate specifically to the development proposed. In the absence of such policies, the appeal must be determined by reference to national policy and on its merits.

3.5. The arguments on whether the proposal is for a specialist facility are summarised by Dr Wilson for Augean (AUG3.3 Appx19) and Mr Aumônier's Response to it (NCC7.6). Several points need to be emphasised:

- The process here involved is landfill, subject only to the necessary safety assessment being carried out to the satisfaction of the environmental regulator. This is not different from other landfills, and it is not a specialised process. The characteristics that the appellant suggests are 'special' are no different from features of many other waste management facilities of local, or at most regional, significance.
- All planning permissions must define the development that they authorise. This is no different for a planning permission for LLW landfill than, say, a planning permission for a specified residential or retail development.
- The 2010 LLW Strategy makes the point that management of LLW is not a particularly high-tech process (NS17 pg35 p3.4.1).
- At the application stage, when promoting the proposal, Augean made it as a point in favour of the proposal that there is no need for special handling precautions (PA1 AppxL).

3.6. The MWDF Vision in the **Core Strategy** (CS) (PP15 pg16 p5.2) looks to communities taking more responsibility for the waste they generate. Objective 1 (p5.3) includes achieving regional self-sufficiency. The CS recognises (PP15 pg29 p6.28) the role of ENRMF as a specialist site with a national catchment for hazardous waste and proposes that its current role should be maintained and that it should continue to have a regional role by supporting the management of hazardous waste in the region. This does not support its use for any other waste stream.

3.7. Specifically the CS does not support the use of ENRMF for the management of radioactive waste: this is an issue to be addressed at review in the light of emerging national policy (p6.29). The Inspector who examined the CS noted the absence of relevant higher level guidance at the time of the examination (OD76 Report dated 1 March 2010 at p5.45).

- 3.8. Augean/Mr Miles made various references to the CS recognising the continuing role of ENRMF as a hazardous waste facility and to the period to 2016 (e.g. AUG1.2 p6.22/6.23). He accepted that these references are irrelevant to an application to landfill LLW until 2013 only. However, they illustrate the appellant's true agenda: if the case is to be justified by taking account of needs beyond 2013 (though such need for hazardous waste is itself not relevant to the appeal proposal) that case must be considered in the context of a different planning application.
- 3.9. Whatever are, or become, the temporal and spatial limits on the use of ENRMF for hazardous waste, it must be the case that the addition of a new waste stream reduces the capacity of the site to fulfil that function. The reduction in capacity may be limited by the imposition of conditions but it would be even then a reduction, and contrary to what is proposed in the Development Plan. This is arithmetically unquestionable.
- 3.10. Augean objected to the **Locations DPD Submission** (PP20) because it made no provision for meeting future hazardous waste need (AUG1.2 p6.43). Suggested Changes put forward by NCC in response include the addition of text in which it is accepted that committed sites are conferred with a favourable status for the continuation of a waste use where this meets the intent of the MWDF strategy and policies and is also in accordance with national planning policy (AUG3.3 Appx20). Some considerable weight can now be attached to this DPD, taking account of the Suggested Changes. It has no direct relevance to the LLW proposal but has obvious relevance to the future of the ENRMF, since Augean intends to apply for temporal and spatial extensions to be used not just for hazardous but also for LLW. Again, that proposal is not the subject of the present application but it exposes the fallacy of the repeated assertions made at the application stage that the site will cease to operate and be restored by 31 August 2013. If the policies of this emerging DPD make it more likely that the site operations will not cease at that date, and if the true intention is that there should be use beyond then for two waste streams, that proposal should be properly considered against these policies when adopted.
- 3.11. Although the **Control and Management DPD** (PP32) has yet to conclude its examination, it can be given some weight. It has relevant content, but the appellants' claim (AUG1.2 p6.38] that the proposal fully accords with the policies in this DPD and their criteria is clearly not correct. That claim is founded on the erroneous argument that the proposal is for a specialist facility. Since that argument is not well-founded but is critical to the appellant's argument, the conclusion on the appeal proposal when tested against this emerging DPD must be that it is substantially in conflict with it.
- Note:
- PP32 p3.6: it is not considered appropriate given sustainability issues for Northants to take on the role as a key sub-national location for waste management facilities.
 - PP32 p3.12/3.13: development of facilities in Northants with a national or regional catchment area is only considered appropriate where these would be of a specialised nature. A national catchment may be considered

appropriate where the facility is one of only a very few of its type nationally - on the basis of its specialist role. Augean concedes that if LLW is not a specialist waste, p3.12 does not support its case

- PP32 p3.33/3.35: role of ENRMF as a hazardous facility is to be maintained (subject to its existing planning permission); proposals for additional capacity should not prejudice the permitted use unless it can be clearly demonstrated that it is no longer required at that location.

Conflict with National Policy

- 3.12. There are two categories of 'National Policy': National 'planning' policy, and 'other' national policy dealing with the management of LLW. There is no national planning policy dealing with LLW, but PPS10 and PPS23 both contain relevant guidance. 'Other' national policy is now contained in the Defra 2007 LLW Policy (PP2); the NDA UK Strategy (Nuclear Industry) 2010 (NS17); and the DECC UK Strategy (Non-Nuclear Industry) 2010 (NS18 of August 2010 and NS18A of October 2010). The status of NS18 seemed clear at the time of publication ("This document is the UK Strategy ..") , but NS18A, though later, says that "This document represents the first phase in the development of a draft Strategy ..". Since this document now appears to be still in draft, it follows that the national strategy anticipated and said to be needed in the 2007 Policy (PP2) is not yet complete.
- 3.13. The distinction between national 'planning policy' and 'other' national policy was reflected quite properly in the first reason for refusal; it was also reflected in the Core Strategy DPD Inspector's Report (OD76) where he referred to the absence of higher guidance. It was also recognised expressly in Mr Miles' proof for Augean (AUG1.2 p6.132) and by his separate consideration of the policies in sections 4 and 6 of the proof. It was extraordinary that he then sought to contend otherwise in cross-examination and to claim that the Defra 2007 LLW Policy, the NDA UK Strategy (Nuclear Industry) 2010 and the DECC UK Strategy (Non-Nuclear Industry) 2010 are 'planning' policy'.
- 3.14. Is the distinction between national 'planning' policy and 'other' national policy of any significance? The appellant appears to believe so (NCC10 p20). In short, the 'other' policy documents are directed principally at the industries when making their waste management decisions but are also to be used by planning authorities as guidance when preparing their planning strategies for waste management. The UK Strategy (Nuclear Industry) also makes separate reference (NS17 pg31 p3.1.1) to UK planning policy. In contrast, the principal planning guidance to WPAs, so far as the content is applicable, remains that in the PPSs. There may be a tension between the two, and operators might well come forward with proposals that are apparently in compliance with the 'other' policy documents but are not acceptable when tested against 'planning' policy, which should prevail where forward planning or development control decisions have to be made by planning authorities.
- 3.15. NCC accepts that the other policy documents are material considerations in this case but submits that the appeal proposal complies with neither national 'planning' policies nor the 'other' policies.

3.16. Points on PPS10, Planning for Sustainable Waste Management 2005 (PP5)

- Key Planning Objectives (KPOs) 1, 2, 4 and 5 are all relevant, and in particular: disposal must be looked to as the last option; communities must take responsibility for their own waste; the requirement for recovery is that it must be without harm to health or the environment, and for disposal that it should be in one of the nearest appropriate installations; decisions by planning authorities must reflect the concerns and interests of local communities.
- Favourable consideration should be given to proposals which are consistent with the WPA's core strategy (p24): in the present case, as stated above, the MWDF CS does not support the use of this site for LLW landfill.
- Applicants should demonstrate that the proposed facility will not undermine the waste planning strategy through prejudicing movement up the waste hierarchy (p25); in the present case, if permission is granted at ENRMF, that may be seen as relieving WPAs elsewhere of their obligations to include provision for the LLW management needs of nuclear sites in their areas/regions which would undermine the strategy, work against self-sufficiency and engender a mindset which does not seek in full to implement the step-change in management and the move away from disposal that the policy and strategy have at their core.

3.17. Points on PPS23, Planning and Pollution Control 2004 (PP6)

- The "planning system plays a key role in determining the location of development", particularly in respect of development which may give rise to pollution (p2). The distinction was recognised and well expressed by the judge in Harrison v SSCLG (OD80). - "The planning system has to determine whether the development itself is an acceptable use of land and the impact of those uses. This to my mind is distinct from the IPPC process which 'controls the processes or emissions themselves.'" (NCC1 p51).
- It does not follow that, if a proposal has satisfied the requirements of the regulatory authorities on BAT/BPEO, it should therefore be granted planning permission. Planning control must have regard to the other considerations. Thus, in the present case, planning permission may be refused on one or more of the grounds being advanced by NCC.
- Perceived harm is a material consideration (Appx and Annex) that goes directly to the question whether the development is an acceptable land use.

3.18. Points on the 2007 LLW Policy (by Defra, DTI and the Devolved Administrations) (PP2)

- The document confirms that a "clear statement of Government policy is needed to support the planning process" but that this document itself is not that policy (Annex 1 p31).
- There is a need for LLW management plans based on a formal assessment of all practicable options for the long term management of

the waste, taking account, among other things, of social factors (Annex 1 p23). No relevant long term management plans have been produced to the inquiry, and a decision based on looking forward only to 2013 must be contrary to the expressed intention.

- At the date of the policy document, various options were identified for future consideration i.e. to be considered in LLW management plans (Annex 1 p19).
- In those plans, the proximity principle must be employed as a point of reference: it is to be balanced with other considerations but "...when options' assessments are carried out to support the development of LLW management plans, "transport" should be explicitly considered, taking into account the volumes and activity of the waste as well as the distance over which it will need to be transported for each option. The need to consider alternatives to long distance transport where possible applies in particular to large quantities of lower activity soil and rubble that will arise from large nuclear site decommissioning activities." (pg10 p24). None of the producing sites identified by Augean as potential customers is near to ENRMF: the nearest (Harwell) is 90 miles distant.
- The programmes and plans of the nuclear operators should be developed by including wide stakeholder engagement including the host community (pg10 p26-27): this has not, to date, been undertaken by any of those potential customers.
- There is no statement in this Policy statement to the effect that the Government wishes to see modern commercial landfill sites available for the disposal of LLW, contrary to Augean's evidence (AUG3.2 p7.1). There is reference to the use of the supply chain using waste management infrastructure owned by commercial operators rather than the NDA commissioning its own new waste facilities in the Entec/NDA SEA Post Adoption Statement but it is there accepted that "The difference between these options was not assessed in the SEA as a single specific option" (NS19 pg4). This document then suggests (without the benefit of such assessment) that transport "is not a strong differentiator between options on a national scale" (pg4) but goes on to note that "clear and effective involvement of communities at an early stage when developments are planned is important" (pg5 last para).

3.19. The appellant can validly make the point that much of the above policy advice is directed at the producers/consignors rather than at the receivers/ consignees. However, if the policy is to have any weight as a material consideration, the SoS needs to be satisfied that there has been compliance. The proposal necessarily depends on there being consignors and the question whether a decision by any of them to send to ENRMF would be policy-compliant cannot be divorced in the determination of this appeal. There is little or no evidence that any such potential customers have made any such decisions that show compliance with the policy: that is perhaps not surprising as the policy itself required them to await the Strategy documents, which came only recently, and informs them that essential information on LLW arisings is still awaited but will be supplied (NS17 pg32 top para). The point now becomes even stronger if, as is the case, it cannot be shown that the potential consignors have (yet) demonstrated that disposal to ENRMF would be in accord with the 2010 Strategies.

- 3.20. IPPC controls processes and emissions and the planning controls are complementary to this. In giving BAT authorisation for a facility, the test is, as taken from the draft Permit: "BAT essentially requires the operators to take all reasonable measures in the design and operational management of their facilities to minimise discharges and disposals of radioactive waste, so as to achieve a high standard of protection for the public and the environment. BAT is applied to such aspects as minimising waste creation, abating discharges, monitoring the environment. It takes account of such factors as the availability and cost of relevant measures, operator safety and the benefits of reduced discharges and disposals. If the operator is applying BAT, radiation risks to the public and the environment will be As Low As Reasonably Achievable (ALARA)....." (EA9, AUG2.2 p3.6). Thus, operators are to take all reasonable measures, to achieve a high standard of provision for the public and for the environment, taking account of costs. Thus 'best' is not 'best' but the best that can be achieved on balance to protect health and the environment and, in any event, this does not look at planning controls. Augean accepts that the BAT authorisation does not mean that planning permission should be granted, as planning control has regard to matters such as policy and perception of harm
- 3.21. RSRL would need to consult with the local community near KC. Few waste cases have no objections. Augean agrees that there could be objections from the local residents and from NCC with regard to LLW from Harwell; and while it believes that the inquiry for this appeal will clear up some of the misunderstanding about the reality of the risks, the BAT process at KC has not done so. Before a Permit could be issued, the operator would need to consult with the consignee over the local community and the EA would need to be satisfied that this had been done and that disposal to an off-site location would be the most appropriate option for the waste stream and the consignor would need to identify the ENRMF as the most appropriate facility. [Inspector's note: the Environmental Permitting Guidance Radioactive Substances Regulation March 2010 confirms that operators who dispose of wastes by transfer to other sites must hold an Environmental Permit unless the waste is excluded or exempted. The EA no longer has to specify the destination site for a waste for its BAT review but it can do and the Permit would require any disposal site to inform the local authority before receiving waste from any new consignor (T19 pg19 p4.26, 4.31 and 4.33). See also report p3.48 below]

Points on the 2010 Strategy – LLW from the Nuclear Industry (NDA) (NS17)

- 3.22. The point made in the above paragraph is relevant to the issue that 'Waste Management decisions should not be taken on an ad hoc basis' (NS17 pg12 p2.3). Although Augean argues on the one hand that the Strategy is directed to WPAs, it contends on the other that this statement is addressed to producers and that it is not relevant to a planning decision for a receiving landfill site. Key Principles require high standards of public acceptability for management plans (NS17 pg11 p2.1 1st bullet) and consideration of local community issues (NS17 pg26).
- 3.23. If this argument were to be accepted, it would emasculate the Strategy. If the Strategy is to have any effect, a decision to allow LLW landfill must take into account where the LLW is to come from; to that end evidence is needed of the potential sources; in the present case there is some evidence that

RSRL would wish to send LLW from Harwell to ENRMF; there is, to that extent a joint proposal, albeit with additional potential customers, all at greater distance (AUG1.2 Table 1 pg40 and report p2.97 above). However, if the proposal is temporary and short term, as it must be when the permission sought would expire in 2013, it is an ad hoc proposal without assessment of the options for long-term management. It would not encourage implementation of the Strategy by other producers and WPAs. It matters not whether the Policy statement is directed at producers or receivers: it is a policy that the SoS should take into account when making a planning determination and he should not sanction a proposal which, by the joint approach of one or more producers and the appellants, would clearly be an ad-hoc decision and contrary to policy. If the appellants wish the SoS to have regard to arisings post-2013, then a different planning application must be required.

3.24. Other points are that 3 themes have guided the development of the policies in the Strategy, and the resulting policies include achieving a move away from the past focus on disposal (NS17 pg1); using disposal capacity only as a last resort (pg2) and making every effort to avoid disposal where practicable (pg24 and pg26); managing LLW so as to make best use of the capacity at the Drigg LLWR (pg5, pg24), so as to extend its life to ensure capacity for the long term; and the proximity principle as an important consideration (pg14).

3.25. The Strategy states that "A full range of realistic available options should be considered. Decision-making processes will also need to be informed by community interests, the waste hierarchy, the proximity principle and the need for early waste management solutions." (NS17 pg13 top para). Augean places great weight on the last point on that list, but 'early solutions' must be seen in the context, which is:

(a) that the decommissioning programme will continue for a period of probably over 100 years, and that total estimated arisings are 3 million m³ over 120 years (NS19 p1.4.6);

(b) the prediction in the Strategy is that a replacement for Drigg LLWR 'may be required before the end of the current century' (pg36);

(c) there is considered to be sufficient capability in the nuclear estate (including the supply chain) .. rather than investment in centralised facilities in the near term (pg2);

(d) that the Strategy is very recent and time must be allowed for it to take effect;

(e) the Strategy (NS17) and NDA LLW Management Plan (NS15 - prepared under the auspices of the NDA by the Low Level Waste Repository Ltd) together are intended to bring about a step change in performance (NS15 pg6); the initiative WD4 (NS15 pg63) to develop on-site/near-site disposal of LLW on existing NDA's sites is a 'preliminary step' in achieving optimised disposal and "The principle (sic) objective in developing a national strategy for LLW is to ensure continued capability and capacity for LLW waste management and disposal" (pg92).

3.26. This context does not support the case that there is an immediate or urgent need to make available an ad-hoc facility to receive a very limited amount of

LLW over a period of no more than 2 years, into a site which is not currently part of the nuclear estate supply chain. On the contrary, it suggests that all options should first be considered, and the Strategy be implemented nationwide before any such decisions should be taken, and that such decisions should provide for facilities which will contribute to long term solutions over a period of decades.

3.27. The Recovery Letter (AP12) gives the reason for the SoS' Direction as being that the appeal relates to proposals for development of major importance having more than local significance. NCC suggests that the SoS may wish to consider whether a grant of planning permission here would show commitment to the Strategy and the national implementation of these recent policies by giving them time to have effect or, rather, would prejudice the objectives by reducing the prospects of enduring solutions that will ensure continued capability and capacity over the next 100 years. 'Early solutions' should not be interpreted as meaning temporary/ad-hoc compromise arrangements that provide no lasting solution or benefit. The issue to consider is whether this is a desirable 'early solution' supported by policy or an undesirable 'ad-hoc' proposal that is in conflict with policy.

3.28. Whilst the Strategy (NS17) does not support a case on urgency, nor does it support a strategy of providing a single disposal point for an area as large as the whole country or the whole of the south and east of it. Augean's evidence from Mr Miles (AUG1.2 p4.30) includes extracts from section 2.3 of the Strategy (NS17 pg13/14):

"4.30 In relation to the proximity principle, the Strategy sets out the requirements as expressed within PPS10 relating to the use of the nearest appropriate installation and states: *A key consideration in any decision will be choosing to use, or invest in, facilities close to site, or use facilities further away. The proximity principle proposes that waste should be managed in the nearest appropriate installations Whilst the desire to avoid excessive transportation of materials is an important consideration, it must be balanced with all the other relevant factors on a case-by-case basis. In the case of radioactive wastes, as with some hazardous wastes, the number of appropriate facilities may mean that the nearest appropriate facility is a considerable distance from where waste is generated.*" (Mr Miles' emphasis)
"The proximity principle is often compared against the economies of scale that can be achieved through reducing the number of sites managing waste. The disparity in amount and location of LLW and High Volume VLLW arisings in the UK is a key issue. For example, consideration of these factors will be different in Cumbria, where a significant proportion of LLW is located at one site, to other parts of the country, where smaller arisings are generated over a much wider area. This is a matter that is appropriately considered as part of the BAT or BPEO/BPM assessment undertaken by the waste producer as part of their application for an authorisation to send waste off site for treatment or disposal."

3.29. The words underlined by Mr Miles do not follow from anything in PPS10. These passages in NS17 are dealing with all methods of management and with all facilities. The last sentence distinguishes between treatment and disposal. The 'proximity principle' box (NS17 pg14) quotes from PPS10 in relation to disposal. The nearest facility may be a facility for management

other than by disposal. Even in the case of disposal there will be cases where the facility is the only one that can accept the residual waste e.g. Drigg LLWR or the Tradebe/Fawley Incinerator: the Strategy does not say that the nearest facility for disposal of any LLW that has to go to landfill will necessarily be at a considerable distance, and indeed it should not be if the Strategy is implemented and the proximity principle is applied. Where disposal to landfill is the only option, the clear intention is that it should be to the nearest site if the proximity principle is to have any meaning.

- 3.30. Although the 2008 Waste Framework Directive will widen the application of 'nearest appropriate facility', it will only be for recovery, rather than those levels of the hierarchy which precede it. The distinction implies that there are management routes to which the proximity principle can be less strictly applied, and those for which it is an objective which should have greater weight. The previous and current restriction to disposal suggests that proximity should be given the greatest weight for the management route of last resort. (See report p2.64 above)
- 3.31. The remaining landfill capacity in England and Wales is put at 694 million m³ at 2006 (NS19 pg5/6 p1.4.6]: much of that capacity must inevitably be closer than ENRMF to LLW sources and should come forward to accept the residual volumes from the 3 million m³ that are estimated over the next 120 years.
- 3.32. A similar point can be made against Mr Miles' quote (AUG1.2 p4.37) from the Strategy (NS17 pg34 p3.3.4) in respect of legacy wastes, which should be cleared as soon as practicable via an appropriate treatment or disposal route. Application of the hierarchy requires that treatment should be considered first: implementation of the Strategy should reduce the amount of legacy waste that needs to go via the disposal route.
- 3.33. The emphasis on the proximity principle in relation specifically to disposal is therefore clear in the Strategy (NS17), as it is also in the two versions so far produced of the draft non-nuclear Strategy of July 2010 and October 2010 (NS18, NS18A).

Points on the 2010 Strategy – LLW from the Non-Nuclear Industry

- 3.34. It is difficult to understand the process by which these 2 documents (NS18, NS18A) have appeared and the apparent inconsistencies between them. The absence in the second of any reference back to the first is remarkable. It is probable that only limited weight can be given to either and, no doubt, in due course, a final Strategy will be published.
- 3.35. The first version explained that the Drigg LLWR is not expected to be used for wastes which can safely be sent to other less specialised facilities, which are relatively numerous around the UK (NS18 pg46). Although this does not appear in the October 2010 version (NS18A), it is a statement of expectation and fact which must remain true.
- 3.36. Both versions refer to the importance of the proximity principle: the first referring to it as a key requirement and the second stating that the

Government wishes to see explicit consideration of it when deciding upon an appropriate disposal route (NS18 p46, NS18A p2.15).

- 3.37. Throughout all of the policy documents, from PPS10 forward, the emphasis is on disposal to one of the nearest appropriate facilities. ENRMF is not near to any of its expected main customers. The thrust of the Strategies is that communities should take more responsibility for their own waste and WPAs are expected to make allocations within their boundaries rather than export to distant authorities. Consultation and engagement with receiving host authorities is important. The Strategies are recent and time must be allowed for their implementation. A short-term decision to allow the import of LLW to ENRMF for landfill from across the UK must be contrary to the underlying objectives of those policies.

Need and Urgency

- 3.38. Augean's case on longer term needs for hazardous waste capacity is not relevant to this appeal. Equally, much of the evidence in Mr Miles' proof (AUG1.2 section 5) seems intended to support a case for a permission of longer duration. He introduces the figure of 3.9m tonnes arising in the future; he relies on a figure of 372,000m³ which (a) represents a 5 year total, (b) is for total arisings rather than residuals for disposal, and (c) is LLW, much of which is consigned from Sellafield to Drigg. The only figure that relates to the two year short-term requirement is the 38,109t in his Table 1 (AUG1.2 pg40 and report p2.112 above). The total in this table is predicated on the basis that the selected sites are closer to ENRMF than to any existing alternative facility. Thus, it ignores any other landfill sites that may be suitable and may come forward to seek authorisation.
- 3.39. The potential consignments in Table 1 are derived from the letters received from potential customers. With the exception of RSRL, the information is limited, and it has not been possible to interrogate any of them (including RSRL) about present arrangements or the alternative options they have (or should have) considered. None of the listed sites is in the County or even in the Region.
- 3.40. The SoS will need to consider whether that limited and uncertain volume of predicted LLW for disposal represents such a quantity and an urgency that it justifies the permission sought, when virtually no time has yet elapsed for any effect to be given to the Strategies. It does not, taking also into account:
- A sufficient data base, needed by the nuclear industries and WPAs as the basis for their decisions, is lacking (NS17 pg32]; the quantification of non-nuclear LLW remains very uncertain (NS18A pg7).
 - The investigation of local DP policies in the source areas for the waste (AUG1.2 p5.20-5.30) shows that only one (Suffolk – for Sizewell) reflects current policy guidance. Emerging plans will be bound to have regard to the policies and it can be predicted that future plans will be rejected as unsound if they seek to repeat the prohibitive policies such as were contained in previous Waste Local Plans (e.g. Somerset, Essex).
 - The potential of other landfill sites throughout the country has yet to be explored but it will have to be when those DPs come forward, and it is

already the position that other landfill sites are currently taking exempt radioactive waste.

- Overall, there is a very substantial landfill capacity available (NCC10 pg16 top bullet point) and as no high-tech engineering processes are involved, nor special handling precautions, there must be numerous sites, proximate to sources, that should be brought forward through the DP process.
- Nothing in the Strategies gives preference to hazardous waste sites or mentions any benefits from using such sites rather than other less specialist sites.
- To allow this proposal would set an undesirable precedent, suggesting that the proximity principle be given little weight, and so reducing the likelihood of the Strategies achieving the necessary 'step change' (NS15 pg6).
- Augean intends to refer in Closing to the judgement in the Collis Radio case (OD84). This decision confirms that precedent may be a material consideration where the grant of permission on site A may make it more likely that permission will then be granted on site B. So much the more it must be the case that permission for a use on any site will set a precedent for the continuation of that same use on that same site.

3.41. Augean does not have a strong or urgent case on need. The case as presented, when looking at alternative facilities, muddies the waters by seeking to introduce longer term needs, contrary to the assertion that this is a stand-alone application looking only to 2013 (NCC10 p40). The only relevant figure is the 38,000t in Table 1 (AUG1.2 pg40) and the 'urgency' is supported only by the untested written submissions of the operators listed.

3.42. There is a degree of unreality and pretence in the Augean case. It asserts that the permission is sought for what would be an operative period of no more than 2 years, and yet it has repeatedly introduced evidence relating to longer periods. If Augean wants the SoS to take into account future needs, it must provide the whole picture, including future options and future impacts. Its references to 3mt and to 300, 000m³ must be intended to show the extent of need, which may be very material to long-term planning but they do not relate to this appeal proposal.

3.43. The inconsistencies in the Augean case are obvious: their Permit application to the EA did not quantify or limit the intended volume of LLW - 'The amount .. will be constrained by the physical capacity of the site (a maximum tonnage limit .. exists of 249,999 tonnes ..)' (EA9 pg9 p3.3.1), and despite claiming to rely on a need for 38,000t over two years, it has resisted a condition that would allow for 50,000t over that period (PA15A).

Other Options

3.44. Implementation of recent policy initiatives should produce (a) options for the reduction of the volumes of LLW that require disposal to landfill, and (b) provision being allocated by WPAs and provided by site operators to receive those volumes of residuals closer to where they arise. A number of sites proximate to sources would comply with the LLW policies: a single site

serving the whole of southern and eastern UK would not. Moreover, it is not accepted that if the ENRMF receives BAT authorisation from the EA, it can be concluded that "there can be no better overall sum of outcomes" (AUG 2.2 p2.6). Even were there compliance with the LLW policies (which there is not) it does not follow that the proposal is acceptable in terms of planning control. The proposal would be in conflict with local and national planning policy and give rise in this location to perceptions of harm that could be avoided.

- 3.45. Augean's case is in part effectively a joint proposal: it was RSRL who drew Augean's attention to the 2007 Policy and now it strongly supports the appeal case. In contrast to WW and the many third parties objecting to the proposal who have come to the inquiry and been subject to cross-examination, RSRL has submitted various written submissions but not allowed its evidence to be examined and tested. Given the heavy reliance placed on it by Augean, this is surprising but it has not been explained. Limited weight should be given to RSRL's evidence. Its letter of 4 November (OD67) was written only after Mr Aumônier for NCC had completed his evidence; much of its content was not put to him. There has been no chance to cross-examine RSRL on its content and it is not reliable.
- 3.46. Assertions are made by RSRL (OD67) that could not be tested by cross examination at the inquiry but upon which Augean places great reliance e.g. in RSRL's letter of 8 September 2010 that storage capacity is now full and that the lack of an alternative route may impact on decommissioning progress: we were not told what is the capacity, we have seen no inventory of volumes held, and we were told that it may hold up progress; equally, it may not.
- 3.47. The untested evidence contradicts itself but no witness has come forward to be asked to explain why e.g. in the letter of 6 April 2010 (OD67) Dr Green of Wirral University Teaching Hospital NHS Trust, RSRL asserts that ENRMF is within the same geology as previously identified sites but we do not know which those are; in the Support Information provided by RSRL to the EA it was stated that RSRL had become aware of interest 'on the part of several commercial landfill operators ..' (T78 pg29): in the 4 November letter to Pins they now say that there were only two: several obviously means more than two. Who were the others? Augean relies on RSRL's application for a Permit that would allow it, although 90 miles distant, to send LLW to ENRMF from Harwell. It is claimed that such disposal would be BPEO but a number of questions that arise have not been answered.
- 3.48. There appears to be a conflict between the Regulations/Guidance as now applied by the EA and the policy guidance to which it and the WPA must have regard. The Environmental Permitting Guidance states (T19 p4.31) that "...it will not be necessary for permits to identify specific site(s) at which the waste will ultimately be disposed of. Permits can allow transfer to any site where the operator of that site holds an environmental permit to accumulate or dispose of the relevant type of waste, or for LV-VLLW to any site disposing of conventional waste. However, the Environment Agency may identify specified sites in permits as necessary to meet the requirements of Government policy, for example to deliver the requirements of the proximity principle and the waste hierarchy."

- 3.49. However, the Strategy (NS17 pg26) requires the BPEO process to include consideration of local community issues at the receiving site; the obligation is on the consignor. The importance of this is emphasised (p2.1) where the Strategy includes 'high standards of public acceptability' as a 'key principle' providing an 'overarching expectation'. It is difficult, if not impossible, to see how the EA can give a Permit without (a) the consignor first engaging with the community (Council and residents) at the host receiving site and (b) the EA being satisfied that the consignment would achieve the necessary high standard of public acceptability there.
- 3.50. In this case, it seems that the Permit, if granted, would specify ENRMF as the consignee site (EA9 Annex 3). It has not been possible to question RSRL or the EA but there are serious doubts about the veracity of the process. NCC submits that the SoS should not, by the grant of planning permission, indicate his acceptance of it. In that respect, Augean is wrong if it submits that the BPEO process is not for consideration at this inquiry.
- 3.51. There are 2 serious criticisms of the process. The first is fully set out in NCC/Mr Aumônier's rebuttal proof (NCC7.4). In short, the Harwell BPEO concluded in favour of Option ON3 – New Engineered Disposal Onsite. An Update published in May 2007, which took into account the 2007 Policy (PP2) confirmed that conclusion, maintained ON3 as the preferred option and specifically indicated that on-site disposal is of acceptable cost. A further update was apparently issued in May 2010 but without any fresh BPEO exercise, and in the letter to Augean, RSRL's Closure Director wrote (OD67 letter of 8 September 2010) that he could confirm "that RSRL has concluded that a BPEO for these wastes is off-site disposal .. ."
- 3.52. After Mr Aumônier had given his evidence, Mr Atyeo (of RSRL who has been present throughout the Inquiry but has not spoken) sent further representations to Pins (OD67 4 November letter) in which he stated that "It should be noted that in the original HVLA BPEO consultation (OD66) carried out by RSRL Harwell, the option OFF3 (offsite landfill to an existing site) scored down on the BPEO attribute "feasibility", because the study pre-dated the 2007 LLW policy (NS17), which opened up the possibility of using offsite landfills". This ignores the fact, well known to him, that the first update was undertaken after, and to take account of, the publication of the 2007 Policy. Also, he claimed that "If repeated today the option OFF3 would improve its score on this attribute and this (along with other changes pointed out in RSRL's update to the BPEO study No.2 (OD56) would make off-site landfill the favoured BPEO option." This confirms that the BPEO exercise has not been repeated and offers a conclusion contrary to the only valid exercise that has been properly carried out.
- 3.53. The second criticism is a doubt as to how the relevant policy has been, or can be satisfied. This was raised in XX of Mrs Heasman/Augean but without a satisfactory reply. Although RSRL has not yet consulted NCC or the local residents (NCC7.5 p9), the results of the Augean consultation process so far must indicate that the local community would raise objections to the proposal. On that assumption, the Strategy requirement for a high standard of public acceptability would not be met. Thus, RSRL should only be granted

(BPEO) authorisation if (a) other measures are introduced or offered which overcome the objections and make the consignments acceptable, or (b) an authorisation is issued despite the objections and despite the lack of public acceptability (but this would be in conflict with policy).

- 3.54. Only if the position were reached where (a) applies would NCC's Reason for Refusal No 3 (as amended) be overcome but that is not the position now, and the SoS should not place reliance on the BPEO and BAT processes as evidence that the proposed development at ENRMF would be acceptable.
- 3.55. What would RSRL do from now until 2013 if Augean's appeal fails? That alternative option is not known, other than to RSRL, so it can't be assessed. The financial consequences, as set out by RSRL, are not accepted because the cost comparisons made are with Drigg rather than with other options in the hierarchy. It is doubtful that a dismissal would be more harmful to the public interest than the permission now sought.

Perception of Harm – the Law

- 3.56. In Westminster City Council v Great Portland Estates Plc [1985] 1 AC 661, Lord Scarman (OD 57pg5) said "It would be inhuman pedantry to exclude from the control of our environment the human factor. The human factor is always present of course indirectly as the background to the consideration of the character of land use. It can, however, and sometimes should, be given direct effect as an exceptional or special circumstance."
- 3.57. In Gateshead Metropolitan Borough Council v Secretary of State for the Environment [1994] 1 PLR 85, Glidewell LJ (OD 59 pg17) said: "... if in the end public concern is not justified, it cannot be conclusive." But in Newport BC v SoS Wales [1998] 1 PLR 47 (OD58 pg58), Staughton LJ said: Glidewell LJ is a great authority on planning matters, but in this instance I cannot agree with him." (Staughton LJ considered that the Inspector had properly considered the issue on the costs application, whereas the other two LJJs did not, there was no dissension in the Court on what was the issue, and all agreed that a perceived fear by the public can be a reason for refusing planning permission). Other relevant passages from Newport are:
- Hutchison LJ (at pg55): "I accept Mr Howell's submission that the only sensible construction of the material words is that the Inspector, and therefore the Secretary of State who adopted his reasoning, was approaching the question whether the council had behaved unreasonably on the basis that the genuine fears on the part of the public, unless objectively justified, could never amount to a valid ground for refusal. That was in my judgement a material error of law."
 - Aldous LJ (at pg55): "However, perceived fears of the public are a planning factor which can amount (perhaps rarely) to a good reason for refusal of planning permission. It is therefore in my view "another planning reason" within paragraph 9 of Circular 14/85. That being the law, the Inspector should have considered whether the council acted unreasonably so that it was not necessary for the case to come before the Secretary of State. In so doing, he should have accepted that the perceived fears, even though they were not soundly based upon scientific or logical fact, were a relevant

planning consideration and then gone on to decide whether, upon the facts of the particular case, they were of so little weight as to result in the conclusion that refusal by the council was unreasonable.”

- Staughton LJ (at pg58): “ ... I would say that local fears which are not, in fact, justified can rank as part of the human factor and could be given direct effect as an exceptional or special circumstance.”
- 3.58. In West Midlands Probation Committee v SoSE (1998) 76 P.& C.R. 589, Pill LJ’s judgement included (OD69 pg7): “These propositions, relevant to the first issue, emerge from the authorities: 1) The impact of a proposed development upon the use of and activities upon neighbouring land may be a material consideration. 2) In considering the impact, regard may be had to the use to which the neighbouring land is put. 3) Justified public concern in the locality about emanations from land as a result of its proposed development may be a material consideration.” The inclusion of the word ‘justified’ in proposition 3 is not explained, but clearly did not follow from the authorities he had reviewed if it means that the fears have to be justified objectively. All three Judges in Newport had rejected that approach.
- 3.59. In R v. Broadland DC ex parte Dove [1998] PLCR 119. George Bartlett QC, as Deputy HC Judge (OD 60 p18) said: “Moreover it seems to me erroneous to say that the matters about which local residents are concerned - anti-social behaviour by the residents of the proposed hostel - are not matters which are capable of constituting material planning considerations. Such behaviour, were it to occur as objectors fear, would be attributable to the nature of the use of the land proposed in the planning application - as a hostel and group home capable of accommodating special types of person - and it could affect local residents in the enjoyment of their own land and in their use of the highway. Those are land use considerations, and they are material to planning, just as the patterns of behaviour on the part of the inmates in the West Midlands case were material planning considerations.”
- 3.60. In Trevett v. SoSTLG&R [2002] EWHC 2696 Admin, Sullivan J rejected the challenge to an Inspector’s decision, finding (against the Claimant’s submission) that the Inspector had not said that planning permission could not be refused on the grounds of perceived risks because the fears were not objectively justified (OD68 p20/21) but opined that it would be erroneous to assert that the fears justify a refusal of planning permission “without any regard to the extent as to which those fears are objectively justified in the circumstances of the particular case and given the particular characteristics of the site in question.” (OD68 p25). This judgement at first instance does not disturb the Court of Appeal decisions and should be taken as confirming that ‘unjustified’ fears may be material and could justify refusal but that the circumstances of the particular case must be taken into account by the decision-maker when determining how much weight should be attached to them.

Perception of Harm - Policy

- 3.61. PPS23 AppxA (PP6) states: “The following matters (not in any order of importance) should be considered in the preparation of development plan documents and may also be material in the consideration of individual

planning applications where pollution considerations arise:.....the objective perception of unacceptable risk to the health or safety of the public arising from the development.”

- 3.62. PPS23 advises (PP6A Annex 1 p1.57) that “There may be circumstances, however, where a development is likely to satisfy pollution control requirements for the processes involved, while still being considered by the LPA to present an unacceptable risk in planning terms, because of the potential impact on other uses and users of land. In considering the weight to attach to the risk of a pollution incident, LPAs should rely on the advice of the pollution control authorities and the HSE.....” And (p1.58), “For the actual or perceived level of risk to be material to the consideration of a planning application, the land use planning consequences of such risks or perceptions should be clearly demonstrated. It is for the LPA to decide the weight to be attached to such risks or perceptions”. (p1.59) “...In any assessment of a particular risk, LPAs should rely on the judgement of the relevant pollution control authority. LPAs should concentrate on forming a view of the land use planning implications of any risk assessment...”.

Perception of Harm – Submission

- 3.63. The position in law is clear, and is as established by the Court of Appeal in Newport. The policy guidance confirms the distinction between actual and perceived levels of risk but otherwise is less clear in distinguishing between ‘materiality’ and ‘weight’. The policy guidance cannot override the law.
- Thus, the word ‘objective’ (in the AppxA quote) cannot mean that fears cannot justify refusal unless ‘objectively justified’. It can only mean that the fears are genuinely held.
 - The reference to ‘land use planning consequences’ (Annex 1 p1.58) is not found in the Newport judgements and is either not a proper part of the test or must be applied as explained in the Broadland judgement i.e. the nature of the use of land being proposed (here for the deposit of radioactive material) is one that could affect local residents in their enjoyment of their own land or in their use of the highway.
 - Where the perception of harm is genuinely held it will be a material consideration: the weight to be attached to it is for the decision-maker.
- 3.64. In the present case there is ample evidence from WW, the Third Parties and the written representations that local inhabitants’ fears are genuinely held. Augean accepts that those views are sincerely held and are not malicious or invented (NCC10 p69). This perception cannot be discounted as ‘irrational’ on the grounds that it is not supported by scientific fact: that approach is contrary to law and contrary to the acceptance that it is sincere. Therefore, the perception of fear is here a material consideration. The weight to be attached to it is for the decision-maker. The WPA considers it to be of such weight as to be a reason for refusal. The SoS is requested to uphold that decision.

Perception of Harm – Supporting the Reason for Refusal

- 3.65. Augean’s witnesses failed to recognise the difference between ‘actual’ and ‘perceived’ risks, even though that distinction is clearly noted in law and in

the policy guidance. Their repeated argument, through all four witnesses, was to the effect that because the science demonstrates a very low level of risk there can be no 'rational' perception of harm, or none that should carry any weight. They all agreed that they were not qualified in relation to public perceptions of harm. Prof Kemp's specialism is 'Risk perception and communication'. He was the only witness who is qualified to address the perception of harm, a subject that is entirely different from the technically assessed risk. There are 18 risk perception factors plus 'stigma' (NCC8.1 p4.10-4.37). The greater the number of risk perception factors present for a particular issue, the greater the perceived risk and sense of heightened concern or potential 'outrage' (NCC8.1 p4.9). All apply in varying degrees in this case (NCC8.1 table 6.5 pg33/34).

- 3.66. Prof Kemp showed that the provision of factual information based on the technical assessment of risk does not reduce perceived harm. In addition, making inappropriate comparisons in an attempt to show people that their perception of harm is "wrong" is a major error leading to loss of trust and credibility. According to established research and best practice guidance (e.g. OD37, OD52, OD53), acknowledging and responding to the key perception factors behind the public perception of harm is the only way of reducing perceived harm. Augean failed to understand this crucial point throughout its consultation process and the inquiry.
- 3.67. Residents need to have their views heard, they need information from sources other than statistical data, they need to trust their sources of information and they need to feel able to influence the outcome. For example, putting a temporary roof over the operational landfill, even if not needed in technical terms, would demonstrate that they had been listened to.
- 3.68. Prof Kemp emphasised the following key influences on perceived harm in this case that Augean failed to address:
 - Distrust – As emphasised in the 'Pointers to Good Practice', an overarching objective of any programme of stakeholder engagement is to build public confidence and trust (T63 pg3). The local community does not trust Augean, not only because of its lack of experience in radioactive waste management. That was clear at the application stage. The lack of trust has been amplified by the changing nature of Augean's intentions regarding the future extension of ENRMF for LLW disposal and the timing of the announcement of that intention. There has also been a further 'extenuating circumstance' additional to those mentioned by Cllr Smith for NCC (NCC 6.1 p6.9 – 6.12) by reason of the incident at Cannock, where Augean is the site operator (OD74, AP15.34).
 - Imposition of the decision and lack of local control – especially the lack of discussion of options. Augean's "Decide, Announce, Defend" approach excluded the local community from having any real influence over the decision. Augean has continued to refuse to make any meaningful concessions by citing its reliance on the technical assessment of risk. This has had no ameliorative effect on perceived harm. If the WPA's decision were to be overturned by Central Government, it would be seen locally as development being imposed on the community in conflict with the spirit of localism.

- Lack of familiarity with the nuclear industry. NCC, unlike Cumbria, Caithness (or indeed Oxfordshire), has had no prior experience of the nuclear industry in general and of LLW disposal in particular. The nuclear sector has had no presence in Northamptonshire and has brought no direct benefits to the County. The principal radioactive waste consignors who support the appeal were conspicuous by their unwillingness to appear and be directly accountable (NCC8.1 p7.5).
- 3.69. Despite Augean's attempts to claim otherwise, Prof Kemp did not endorse its approach to consultation. He acknowledged the quantum of it ('Heraclean') but criticised the content and found it wanting in many respects, particularly in relation to the inability to address perceived harm through a meaningful process of engagement as advised by best practice guidelines. The consultation process attempted only to legitimise a decision already made by Augean and RSRL, as opposed to a truly legitimate consultation process through engagement, which was expected by the local community, including the WPA, and required by the national guidance. Augean could have taken residents to Clifton Marsh to reassure them.
- 3.70. Prof Kemp provided evidence that the acknowledged effects of perceived harm in this case are considerable. They include both direct and indirect consequences of the proposals:
- Anxiety and loss of personal amenity in the local community.
 - Inevitable psycho-somatic health effects – noting that the WHO definition of 'Health' is not just the absence of disease.
 - Stigma – KC would forever become known as the radioactive waste dump of the south of England if this appeal against the WPA's decision were allowed.
 - Changed land use of the ENRMF as a national site for disposal of LLW in the long term, given Augean's revealed intentions for the site.
 - Direct negative socio-economic impact given the incompatibility of LLW disposal with existing land uses in the area (NCC8.1 p4.32-4.37, 6.1-6.4).

On this latter point, representations to the inquiry have demonstrated a perceived conflict between Augean's proposals and other more locally beneficial land use development in the area (e.g. AP15.9, AP15.31).

- 3.71. Neither NCC nor the local community can understand the extraordinary assertion that 'The proposal is considered to contribute towards the outcome of protecting both local communities and the environment' (AUG1.2 p7.57), which serves only to confirm the lack of any real understanding of the local perception.
- 3.72. ENRMF is an entirely "green field" site in terms of community familiarity with the nuclear industry: the considerable level of perceived harm from disposal of LLW there would not be experienced at a site on or close to an existing nuclear facility, which is the acknowledged experience at: Lillyhall (established VLLW disposal site with Copeland District/Cumbria community knowledge and an applicant with extensive radioactive waste management experience); or Clifton Marsh (an established radioactive waste disposal

facility); or Dounreay (ditto). These are all very different from the non-nuclear, off-site location of ENRMF.

- 3.73. On the basis of the evidence from Prof Kemp that properly considers this issue, the SoS should attach considerable weight to the sincere and wholly rational perceived harm in this case, taking into account that:
- The perception of harm is considerable, as evidenced by the number of local objections, the major petition, the views of local councillors and the local MP, and third party evidence to the inquiry.
 - The perceived impacts – both direct and indirect - would be permanent and irreversible.
 - The balance of perceived harm and real benefit to the local community – even taking into account the S106 agreement – would be heavily weighted against the proposal.
 - The argument for national benefit is unconvincing because it has not been made out or, in any event, is not so pressing that local wishes and local perceptions should be dismissed.

Totality and the Environmental Impact Assessment (EIA)

- 3.74. It is instructive to examine the history and Augean's tactical approach. It first decided to apply for planning permission for the import of LLW following publication of the 2007 policy and an approach from RSRL but it did not make (and has not made) any submissions in the MWDF process that there should be any policy dealing with LLW. Augean decided not to do so until after the planning application had been made. Although it had earlier intimated that it was considering making application for an extension of life of the ENRMF, that was only for its permitted use for hazardous waste (A6).
- 3.75. The planning application now subject of this appeal was presented throughout on the clear basis that all operations would cease and that the site would be restored by 31 August 2013. For example, the application states (PA1 3.7) that "Landfill operations at the site will cease in 2013 and the site will be restored by August 2013 in accordance with the approved scheme. The site will be capped and restored progressively in accordance with the conditions of the current planning permission and the current Environmental Permit. There will be no change to the operational lifetime of the site and no change to the restoration and aftercare proposals for the site." This statement of intent was not qualified in any of the application documentation or presentations. Had planning permission been granted in March 2010, it would have been granted on that basis and without NCC or its consultees being aware that Augean would thereafter be intending an application for spatial and temporal extension of the site for the deposit of both hazardous waste and LLW. It can be inferred that that was what Augean was hoping.
- 3.76. Following the refusal and in response to Augean's request for clarification of the reasons for refusal (A3), NCC made the point that "The existing consent for the site (Ref. EN/05/1264C) requires all machinery plant, structures etc to be removed from the site by not later than 31 August 2013. It is clear that, taking into account the need to obtain all necessary consents and licences,

the operative life of the site for the proposed use could be only short and that it cannot meet the need that the applicant identifies. Therefore its contribution to the identified need for LLW waste disposal is very limited, and options should be preferred that can better meet the need beyond 2013." (NCC3).

- 3.77. It was only after this exchange that Augean disclosed its intention to make an IPC application for extensions of the life and area of the permitted site for the deposit of both hazardous waste and LLW. The obvious inference must be that it had hoped first to have the deposit of LLW accepted on the basis of a short-term temporary permission before declaring its long term ambitions. Equally obvious was the inconsistency now inherent: if Augean was responding to the 'limited contribution' point by showing that it was intending to continue beyond August 2013, then that only confirms that the submitted planning application was incomplete.
- 3.78. Augean's solicitors wrote to the Inspectorate on 28/10/10 asserting that "In the circumstances, the Council can not claim that it was unaware of the Appellant's intentions regarding the future of the site nor as stated at paragraph 66 of their Statement of Case that it was 'not possible for them to be taken into account when the application was determined'. The relevant facts were known to the Council and they could have been taken into account when the application was determined". Similar assertions were made in the appellant's written evidence (AUG3.2 p9.11, AUG1.2 p7.91). On the evidence now heard at the inquiry it has been established that all the relevant facts were not known to the Council in March 2010 and that Augean's intention to make application to continue the LLW landfill beyond August 2013 had not been disclosed by the date of the Committee Meeting and, in fact, was not disclosed until June 2010. These matters are relevant in 4 respects:
- Firstly, it is now apparent that the application does not embrace the full extent of the development that the appellant desires and intends to carry out. It is therefore only a piece of the whole.
 - Secondly, it explains why the appellant has sought to influence the decision by introducing into evidence various details of the alleged need beyond 2013. This is an attempt to 'have their cake and eat it', by seeking to limit consideration of the impacts to a two year period but seeking also to rely on a longer term benefit.
 - Thirdly, it means that the application, as considered by NCC and all who had an interest in it, was misleading. Equally, others now consider that they were misled (e.g. Louise Bagshawe MP): this will have affected the consultation responses and has increased mistrust of the appellant and the perceptions held by the public. Even on the basis that the extensions would relate to the hazardous waste use only (though that is not the intention, as shown by the content of the IPC application and Augean's evidence at AUG3.2 p9.10) the likelihood that the extensions would occur means that it is obviously unlikely that all buildings, plant etc would be removed and the site restored by 31 August 2013.
 - Fourthly, it means that the cumulative effects of the total development intended have not been assessed and have not been subject to EIA.

Submissions on the EIA Issue.

- 3.79. The case is as put in the Report to Committee on 27 July 2010 (NCC5 AppxA p5.5(c)) i.e. 'The request for scoping of the application under the EIA Regulations was made and approved on the express basis that the development would not extend beyond August 2013. Indeed the Environmental Statement (ES) (PA2) which supported the application appeared to confirm the same, stating "There will be no change to the consented operational lifetime of the site as a result of this application for planning permission" (p1.6). That part of the ES which dealt with cumulative effects (p17.1 – 17.3) made no mention of and did not address what might be the cumulative effects of the submitted application and the intended further application. Thus, the appeal scheme now appears to be part only of a larger, more substantial project, which has not been subject to EIA. The effect of dividing the project between two applications is that the totality of the project has not been assessed and the aims of the Regulations and the EC Directive may be frustrated.'
- 3.80. Reference should be made to p46 of the EIA Circular C02/99 (PP16): "For the purposes of determining whether EIA is required, a particular planning application should not be considered in isolation if, in reality, it is properly to be regarded as an integral part of an inevitably more substantial development. In such cases, the need for EIA (including the applicability of any indicative thresholds) must be considered in respect of the total development. This is not to say that all applications which form part of some wider scheme must be considered together. In this context, it will be important to establish whether each of the proposed developments could proceed independently and whether the aims of the Regulations and Directive are being frustrated by the submission of multiple planning applications". A footnote to this paragraph refers to the judgement in R. v Swale BC ex p. RSPB [1991] 1 PLR 6.
- 3.81. It is accepted that the advice in the Circular and the decision in Swale both address the issue that arises where it is argued that a 'first' or incomplete application is not, of itself, for EIA development; and that, in the present case, the application was accompanied by an ES. However, the point of principle is that the aims of the Regulations and Directive should not be frustrated: this can apply equally where the assessment of cumulative impact is deferred to be assessed only at the stage of the 'second' application. The answer to the question whether the initial EIA should address the whole of the prospective development will depend on context and the facts of the individual case, as can be seen from the decisions on appeal and in the Courts.
- 3.82. Augean's solicitors in the letter dated 31 August 2010 to the Inspectorate (A6) relied on the judgement in R (Littlewood) v Bassetlaw DC [2008] EWHC 1812 (Admin). NCC's response detailed fundamental distinctions between that case and the present appeal (NCC6). The appellant has included in the core documents an appeal decision (West Wratting OD65) but has not (yet) referred to it in evidence (or opening submissions). That case related to a wind farm proposal, where an EIA issue was raised because there was a known, other, wind farm application, though by different developers and on a

different site. Specific guidance has been given by the Government on wind farm applications in PPS22 and the Inspector referred to that. He concluded that cumulative impact might be a factor for consideration on the second application but not on that under appeal (OD65 p12.102).

- 3.83. Equally, little assistance is derived from the judgement in Davies (OD84) where, not surprisingly, Sullivan J, declined to overturn a finding of fact by the Inspector that the park and ride scheme, added by the intervention of the Dept of Transport, was not an integral part of the proposal for a motorway link road.
- 3.84. The factual context in the present appeal is very different because the intended second application is to be made by the same applicant, in relation to the same site, and for more of the same. The appellant might hope that by confining the application to a temporary use, it could limit the scope of the considerations but at the same time establish an acceptance in principle for the dual use of landfill with hazardous and LLW wastes and thus set a precedent for a longer and more permanent permission. It is the obvious attempt to rely on such a precedent that makes this approach unacceptable: the effects of the totality of Augean's known intentions need to be assessed at the outset.
- 3.85. In a recent case, the Court of Appeal quashed a planning permission on the grounds that the ES did not assess cumulative impacts of the development being permitted together with other development that was committed by a S106 Agreement: R (Brown) v. Carlisle City Council [2010 JPL Issue 12 pg1571] (OD82). Again, the factual context is different from this and other cases, but the point of principle applies, and can be seen in the judgement given by Sullivan LJ (with whom the other two members of the Court agreed):

39. "Mr Jones submitted that there was a fundamental objection to the course which commended itself to Owen J¹. The underlying purpose of the Directive is that the environmental effects of a development, including any cumulative effects, are considered at the earliest possible stage in the decision making process: see *R (Barker) v. London Borough of Bromley* [2006] UK HL 52 (2007) 1AC 470 per Lord Hope at para 22. If a decision is taken to permit a development on the basis that any cumulative environmental effects of carrying it out will be considered at some future stage there is the danger that the developer will have obtained a "foot in the door". Even if the later assessment of the cumulative effects might otherwise lead to a conclusion that those effects were unacceptable, the local planning authority would be committed to the development for which permission had been obtained, and that commitment would be a relevant factor in deciding whether cumulative environmental effects which might have been regarded as unacceptable if they had been considered at the outset, must be accepted at the later stage given the prior commitment.

¹ See p32 of the CA judgement.

40. In the present case, the section 106 agreement leaves open the possibility of a completed but unoccupied Freight Distribution Centre. That possibility might well be an unlikely outcome for commercial reasons, but the fact that permission had been granted for the Freight Distribution Centre would be a relevant factor when deciding whether the cumulative environmental effects of the airport works, including the effects of the Freight Distribution Centre, were such as to justify a refusal of permission. Since the object of both the Directive and the Regulations is to ensure that any cumulative environmental effects are considered before any decision is taken as to whether permission should be granted, an assurance that they will be assessed at a later stage when a decision is taken as to whether further development should be permitted will not, save perhaps in very exceptional circumstances, be a sufficient justification for declining to quash a permission granted in breach of regulation 3(2) and/or the Directive.

41. There are no exceptional circumstances in the present case. We were told by Mr Village that works to implement the planning permission dated 12th March 2009 have not been commenced, and no construction programme in respect of the airport works has been submitted. In these circumstances, there is no good reason why the permission should not be quashed."

- 3.86. The danger of, and the objection to, the applicant getting a 'foot in the door' are wholly apposite here: had planning permission been granted in March 2010, before Augean had disclosed its full intentions, it might have achieved exactly that. With knowledge now of further facts, the SoS should adopt the reasoning of the Court of Appeal and refuse to grant planning permission without an Environmental Impact Assessment of the totality.
- 3.87. Before the opening of the inquiry, Pins decided (letter of 1 October 2010) that there was no justification to require additional environmental information. However, in the case of *R (Mageean) v SoS CLG [CO/12524/2009]* (NCC9.1), the judge said, with regard to an EIA screening direction, that "there is often room for two views on making judgements of this nature, and the fact that an Inspector or an administrative officer of an Inspectorate forms one view does not necessarily mean the Secretary of State will form the same view". And (p37) "...only the Secretary of State can cancel or vary that screening decision." (NCC9 p17). [Inspector's note: I advised the inquiry that it is understood that this judgement is to be challenged].
- 3.88. The decision on this issue must be for the SoS (NCC9) and the views of the Inspectorate (in AP13) do not constitute that decision. Also, whatever was the position at the date of the Inspectorate's letter, the Inspector and the SoS now have sufficient information on Augean's intended further application: it is enough to know that it would include, on land in its ownership, the following elements (AUG3.2 pg29):
- Development of new landfill void for the disposal of hazardous wastes and low level radioactive waste at an input rate of up to 249,999tpa;
 - A new proposal for the filling of hazardous waste and low level radioactive waste in existing void space at an input rate of up to 249,999tpa;
 - Extraction of clay for engineering purposes;

- Continued operation of the soil treatment facility with a capacity of 100,000tpa of contaminated soils; and
- An anticipated period of development until 2026.

Conclusions

3.89. The appeal should be dismissed on the grounds that:

1. The proposal is in conflict with policy.
2. There is no need, and certainly no urgent need, for the ENRMF to be permitted for the landfill disposal of LLW.
3. Other disposal options would comply better with policy and would avoid the perception of harm that here arises.
4. The perception of harm is a material consideration which, on the facts of this case, should be given significant weight.
5. The proposal is piecemeal; Augean intends development at ENRMF over a larger area and an extended time-period. The totality of the intended development should be fully assessed, and be subject to EIA, before any decision is made on its acceptability.

4. THE CASE FOR KING'S CLIFFE WASTEWATCHERS (WW)

The material points are:

Introduction

- 4.1. King's Cliffe Wastewatchers is a local group formed to investigate and then oppose the application to deposit LLW in the local landfill. WW is not an anti-nuclear group and is not affiliated to any other organisation. WW has campaigned in the local area to bring the proposal to the attention of local people, through meetings, leaflets and posters, a petition, and contact with the local media. WW was granted Rule 6 status at the Inquiry.
- 4.2. The Inspector at the PIM set out the main considerations for the inquiry [report p1.49 above].
- 4.3. WW is not satisfied with the EA. It has a multiplicity of roles, including acting as a consultant and a supporter of the appellant (KCWW1.2 p24.1-24.2, EA9 p15.2, EA3 p5.2.4). For example, the EA and Augean appeared on the same platform at the KC public meeting. The EA did not appear to be independent. Also, it provided inadequate information at that meeting and at Council meetings. It did not follow its own guidelines in seeking the views of the community. The EA commissioned and paid for the SNIFFER methodology, which is riddled with errors; its Executive Summary confirms that it is aimed at small users and may not be applicable to a hazardous landfill (S3, PA2 AppxC Annex B Pg21 p3.2, EA9 pg65). If systems that the EA had approved were to fail, would it prosecute itself?
- 4.4. WW took up numerous points with the EA over the Authorisation application (EA9 pg23-56). The HSE and the EA think that the site would not be a nuclear installation (EA9 pg45/46).

- 4.5. The EA has a lack of transparency in its dealings with the community (EA9 pg49 p12.3, p12.4, 12.6). It deals dismissively with concerns about fear (EA9 p3.1-3.12, 14.1), saying simply that radiation is safe. The EA's decision on the authorisation is not accountable and it can be used by others; for example, NCC cannot challenge the EA's decision on BAT. This is a flaw in the procedure for the disposal of LLW.

The Perception of Harm - Introduction

- 4.6. It has been established that the 'perception of harm' is a material consideration in planning matters (PP6 - PPS23 AppxA p11-12, PP6A - PPS23 Annex 1 pg17 p1.57-1.58) [see report p3.62 above].
- 4.7. This guidance clearly puts the task of deciding on the objectivity of perceived harm at the door of NCC. At the time of making its decision, the Council was the objective judge for assessing the perception of harm. The Development Control Committee had the evidence of the pollution control authorities, the Chief Planning Officer, and the independent radiation adviser (Dr Denman), and the Members still decided that the perception of risk was sufficient to overrule the Officer's recommendation. NCC maintains that (NCC1 pg21 p55): "In this present case the extent of those fears is such that the damage caused by their perception of harm far outweighs any benefits that may derive from the grant of the permission sought, and is not overcome by the offer of money." WW supports this conclusion.

The Perception

- 4.8. That a perception of harm exists among the local population is well evidenced. The petition, the letters of objection to NCC, the submissions by local people (AP15), the reason for refusal by NCC, and Augean's offer of a Community Fund in the S106 Agreement (PA9) all confirm that the perception exists. The issue is whether or not NCC was justified in using that perception as a reason for refusal.
- 4.9. The appellant's team has attempted to discredit the petition (AP16) by saying that it did not define the radioactivity levels of the waste referred to and that it used the word 'fear' in an emotive and suggestive sense. However, the petition was launched some time after Augean had conducted the bulk of its consultation and so, assuming that the consultation was as thorough as has been maintained, those signing would have been perfectly aware of the levels of radioactivity proposed for the site. The use of the word 'fear' was included because it accurately summed up our perceptions of the proposal. People were quite at liberty to decline to sign (as some did) if they were unhappy with the statement.
- 4.10. Fears of the consequences of this proposal are not uniformly held by everyone, nor are they felt to the same degree. They are not just a hysterical reaction to the word 'radiation' but more often than not a chronic sense of unease and uncertainty, a nagging worry, over possible consequences, especially in the long-term. They are especially felt by

those who have responsibility for children, over whose health they do not wish to take risks, no matter how slight those risks may be claimed to be.

The Reasons for the Perception *Consultation*

4.11. Augean did not carry out adequate consultation and this, far from overcoming perceptions of harm, actually increased them. By failing to engage in a satisfactory manner with the public, and by not discussing their fears, they gave the impression of being aloof and uncaring and that decisions about the proposal had already been made such that the public's views were irrelevant. This failure to engage can be demonstrated in various ways (KCWW1.2 pg4-26 p6-13.3).

Stakeholders

4.12. Dr Wilson for Augean identified the KC Liaison Group as 'the main stakeholder group for the site' (OD1). However, most local people are unaware of the existence of this group so it can hardly be shown to represent the community. There were only 2 consultation meetings of this group - on 20 May 2009 in which no minutes were produced, and on 9 September 2009 (OD1 pg60). The latter meeting shows little evidence of in-depth discussion of the proposal and it took place after the proposal had been submitted. There were only 3 people present from the local area. This group cannot have been an effective means of community involvement in the consultation process.

4.13. In terms of consultation involving the nuclear operators who intend to send LLW to ENRMF, there is no mention in the minutes of the Liaison Group that such consultation has taken place, despite the implication from Mr Miles that it might have done. Nor can it have done, since planning permission for the site has yet to be granted. WW has not knowingly been consulted by any nuclear operators.

The Public

4.14. The public has been informed of developments, according to the appellant, through newsletters, the public exhibition, meetings of Parish Councils, the telephone helpline, invitations to visit the site, inserts in the local press, and Augean's website. Few of these allow for discussion and none included the offer for local people to sit round the table with Augean and discuss aspects of the proposal. This has led to a feeling that local people have been informed but not allowed to discuss, and to a sense that the public is being excluded. This leads to suspicion and fear.

The Newsletters

4.15. These (PA1 SLE AppxA, AUG3.3 Appx9) have been intermittent, apparently only produced when there was a need to get a particular message across. For example, the May 2009 newsletter was to advertise the proposal and the public exhibition; the second was to comment on

questions brought up at the KC Parish Council open meeting; the third, in March 2010, seemed to be to remind people how much money Augean had given to the community through landfill taxes. These were mailed to only 550 houses in King's Cliffe and Duddington. For some reason, Collyweston and other nearby villages were not included. These newsletters were not a means of consultation and they were not distributed sufficiently widely to allow the local community to know what was going on.

Erroneous Information and Doubt

- 4.16. The first of these newsletters (PA1 SLE AppxA) contains a pie chart, and preceding paragraph, that explains that the radioactivity of the waste proposed for KC (200 Bq/g) is 'the bottom five per cent of the range of this type of waste currently sent to landfill in the UK'. This is both wrong and misleading. Firstly, the higher levels are only sent to LLWR Drigg, and there is nothing in policy or strategy to suggest that the higher levels are suitable for landfill disposal. Secondly, the only landfill site taking LLW at the time was Clifton Marsh, which then had a limit of 100 Bq/g. This error was repeated in one of the exhibition panels (PA1 SLE, AppxH) and in the Key Facts (PA1 SLE AppxC pg1 p4).
- 4.17. Dr Wilson/Augean used the word 'landfill' to make it easier for the public to understand. This is disingenuous. Landfill in all the policy and strategy documentation is expressly used to distinguish between LLWR Drigg and other options, not include it. In the glossary to the Defra 2007 policy (PP2 pg37), 'landfill' and 'LLWR Drigg' have separate headings. His subsequent change of the wording to 'shallow burial' (PA1 SLE AppxE slide 7) is not much of an improvement since that term also refers to landfill in the glossary.
- 4.18. The effect of this would have been to make people believe that the proposal was safe because the radioactivity was only a tiny fraction of that currently disposed of in a type of landfill similar to KC. This would doubtless have reassured them – and this was the case with some people - but their confidence would have been based on a false premise. In fact, the levels of radioactivity proposed for KC were not 5% of that currently sent to landfill but double. Giving misleading information is not the way to allay fears and remove a perception of harm.
- 4.19. Another mistake was discovered in a message to residents of Duddington (the village nearest to the landfill) and of Tixover when Augean/Dr Wilson declared (PA1 SLE AppxL p3) '...there is no risk to the public...'. Under cross examination, he admitted that this was a mistake. If he chose to correct this mistake, he would be obliged to imply that there would be some risk to the public, which would do little to allay the perception of harm.
- 4.20. The differences in dose constraints by the EA and HPA cause doubt (KCWW1.2 p26.6). The EA suggests a dose constraint of 0.3mSv/yr from a single source of man-made radiation but the HPA puts the figure at 0.15 (EA9 pg32 p3.10). While a figure of 0.02 is used for the appeal site, that figure could also be wrong. Also, the HPA recently reduced its dose constraint, meaning that the danger had been worse than it had previously thought. The

standards are based on imperfect knowledge. People who live near a site have a different risk perception. Moreover, guidelines may change to allow higher levels of radioactivity into landfills (KCWW1.2 p28.4, 28.5).

- 4.21. The uncertainty in scientific circles as to the calculation of the effects of radiation on human tissue, as is evident from the CERRIE report (T21, CBCD9), suggests that dose calculations may be useful for epidemiological purposes and for making broad statements about risk but they are little or no use to individuals whose particular make-up is not known (KCWW1.2 p27.3).
- 4.22. The HPA has also reduced the target for radon in dwellings from 200Bq/m³ to 100Bq/m³, suggesting that the risk is greater than had been thought (KCWW1.2 p28.5). There is also concern over ALARA (As Low As Reasonably Achievable), which places 'cost' above 'safety'. No matter what risk standard is used, one death is one too many. If anything can be done to reduce harm, it should be, regardless of cost to a private company.
- 4.23. The Government's lack of leadership in not committing itself to any disposal option, on or off-site, does not give confidence (KCWW1.2 p41.6). There is fear that principles are being overridden for the sake of convenience.

Ambiguous Information

- 4.24. Some things at the Public Exhibition could have been made clearer and more transparent, such as the status of the 3 'independent agencies'. For example, RSRL is classed as independent. However, it was communicating with Augean about this proposal from 2007 and has since played a significant background role at the inquiry in support of the appeal, and is now requesting a variation permit for a disposal route to ENRMF even before planning permission has been given. Statements from RSRL need to be met with the necessary degree of scepticism. The more that RSRL is revealed to be behind this application, the more suspicious and concerned are the local people.
- 4.25. The fact that people appearing at the exhibition were unwittingly taking part in a consultation exercise, and that their presence would be used in support of the application, adds to these worries. Transparency, which sits at the top of Augean's core business values (OD8 pg3), might suggest that this intention should have been made clear to those who were appearing. Even more alarming, it now appears from Augean/Mr Miles' evidence that the same people were also contributing to RSRL's consultation.

Monitoring

- 4.26. The feeling of security that local residents are entitled to should be reinforced by a comprehensive and trusted system of monitoring (KCWW1.2 p21-25.2). As this proposal is a new one in the disposal of such levels and amounts of LLW, Augean and the EA should reassure the public by instituting a process that goes further than they believe to be necessary. Under European Law, the site is a nuclear installation which should be overseen by the Nuclear Directorate, as is the LLWR at Drigg. For the purposes of the Council Directive (Euratom) (COM(2004) 526 " "Nuclear installation" means any

civilian facility.....where radioactive materials aredisposed of temporarily or permanently.....” (KCWW1.2 p21.1).

- 4.27. There would be no monitoring of people outside the site. The HPA’s argument that the health monitoring of all site workers would be adequate is ridiculous. There is also concern about the frequency of monitoring of groundwater, gas emissions, dust and general radioactivity. The quarterly monitoring would be inadequate for air/dust and leachate, and it would be carried out by Augean, not the EA (KCWW1.2 p22-24). Given the nature of the waste and Augean’s inexperience in handling it, that is unacceptably lax. Also, the other monitor, the HPA, is earmarked for closure (KCWW1.2 p24.3, 24.4).
- 4.28. The monitoring should extend to the processes – such as the checking of loads, handling and disposal of waste containers, the quarantine area, use of the wheel-wash, road sweeping and the packing of bags at the consignor sites - not just their results. Mistakes can easily occur: note the 5 bags of LLW sent to Lillyhall from Sellafield in April 2010 (KCWW1.2 p25.1, 25.2).

Unanswered Questions

- 4.29. Augean posed some questions and, in several cases, failed to answer them, thus causing more suspicion (PA1 SLE AppxM). The answer to Question 24 failed to say whether waste would be coming from Sellafield. The answer to Q6 failed to advise about a safe dose level and did not explain why that question could not be answered. The answer to Q8 did not advise that alternatives are being proposed by the nuclear industry for on-site burial. No doubt many people reading these answers would have been reassured, but on a false premise since the information given was selective. Once the selective nature of these answers is realised, then trust in the company falls, as it does in its ability to manage the operation in a transparent way.

Radioactive Waste at Thornhaugh

- 4.30. Less than a month after the application that led to the current appeal was submitted, radioactive waste from the Olympic site in East London was deposited in Augean’s landfill at Thornhaugh. Since the waste had an exemption order, and since Thornhaugh is not in Northamptonshire, it is understood that Augean did not act incorrectly in a legal sense by not informing NCC or local people. However, the company could have made it clear what it was doing: it should not have taken a freedom of information request to the EA to secure this information (OD16). Augean/Dr Wilson had informed the Thornhaugh liaison group but only after this information had been requested. His main stakeholder for the ENRMF proposal is the KC Liaison Group. In the interests of transparency, it should have been told.
- 4.31. Thornhaugh is just a few miles from KC and the realisation that “exempt” radioactive waste was already being buried in the area caused some consternation. The fact that the company, right in the middle of its period of ‘transparent’ consultation, had not seen fit to inform those already concerned by the application that this was happening raised suspicions about its behaviour and intentions.

Further Developments

- 4.32. Subsequently, local people have been informed (OD1- 7 July 2010), without even the pretence of consultation, that Augean would apply for an extension until 2026 and an increase in void space. Shortly afterwards, Augean announced that it had bought another quarry at Cook's Hole next to its Thornhaugh site. Those who had been reassured by the thought that the landfill would soon be full and restored were rudely awakened. There now seems the possibility of operations continuing for decades, on a much wider scale than previously thought and that much, if not most, of the waste would be radioactive. The extent of the company's intentions for the area, and its lack of transparency in revealing them, are fertile grounds for worry, as shown in the reactions of the KC Liaison Group.
- 4.33. The SNIFFER website makes clear that the EA is investigating the possibility of higher levels of LLW being allowed into landfill. There is also the possibility of Government changes to the classification of LLW, both in terms of the current consultation over the definition of exempt waste and the suggestion that radionuclides may be categorised for disposal purposes into short- and long-lived groups (NS21 p142-155), as they are in some other countries. All 3 of these initiatives are seen as resulting in higher levels of radioactive material being allowed into ENRMF under the current Permit. This may soon move from being a perception to a reality. The mere suggestion of it gives rise to feelings of unease.

BAT

- 4.34. The link between BAT and the perception of harm is the comparison between the proposals for ENRMF and those recently approved for Dounreay (KCWW1.2 pg26-40 p14-20.3). Most starkly, these are seen by simply observing the images (KCWW1.2 p29-30). In terms of HVLA disposal, Dounreay operates in the dry, with no production of leachate, thanks to a temporary roof; at ENRMF, waste would be subject from the start to rainwater penetration. The EA has an interpretation of BAT (EA13 pg6 p17).
- 4.35. Augean/Mrs Heasman described WW's calls for a roof as 'irrational', a term we find inappropriate given the fact that Dounreay, Morvilliers, and the proposed facility at Keekle Head all have a roof for exactly this level of waste disposal. She explained that Dounreay needed a roof because it is built into rock, though she did not explain why this meant that a leachate management system, which would be needed anyway for the post-operational phase, could not be used for the operational phase. The ENRMF should have a concrete cap and 4m of cover above that, as at Dounreay.
- 4.36. The problems with encouraging the creation of leachate during the operational phase at ENRMF are that it has to be disposed of, and in the application this was envisaged as treatment and dumping in the Bristol Channel (still an option) which would involve more long journeys (over 150 miles), and more opportunity for accidental discharge. Recently the option of bringing it above ground and using it as part of the soil stabilisation process has been proposed but this would add further possibilities for error.

- 4.37. The application has not been conducted in the spirit of the 2007 LLW Policy nor the 2010 LLW Strategy (PP2, NS17). Consultation has been a 'tick box' exercise; it has not involved a discussion of options with stakeholders. The claim that there were no options to discuss is relevant only inasmuch as the company had already made up its mind. The Dounreay consultation involved discussion over the siting of the cells, the materials used for containment and the roof, all of which could have been the subject of discussion at ENRMF, as well as site security, the levels and amounts of radioactive waste to be disposed of and the methods of emplacement (T25 Additions pg3).

Leachate and Groundwater

- 4.38. The main concern of local people is the possibility of the leachate entering the groundwater. That this is a possibility is confirmed by the inclusion in the ES (PA2 AppxC Section 8.9) of the scenario (Expected to Occur - Exposure by using Groundwater at nearest Abstraction Point) (KCWW1.2 p27.1-27.2). It is also implied by the calculations surrounding leachate penetration of the basal layers (PA2 AppxC, Annex B p4.1.3). The possibility is also raised by a local consultant hydrogeologist (AP15.10).
- 4.39. The clay deposits which are claimed to make the appeal site so attractive, are widespread in the British Isles (KCWW1.2 pg87).
- 4.40. The worries are that the shallow depth of the clay (only 1.5 metres at some points), the weakness in the integrity of the HDPE liner, the existence of swallow holes just a few metres from the northern perimeter, and the known fissure characteristics of the underlying limestone, which are increased by the movement of groundwater, would be an easy way for leachate to enter the groundwater by gradual leakage or by sudden collapse. The groundwater flow is towards KC. No extensive research has been conducted into the strength of the limestone and significant extra weight is now to be placed on top. The risk assessment seems to consist simply of modelling the possible radiological implications of gradual leakage but not of a sudden collapse. Placing this material on top of an aquifer would be an unnecessary risk and it would be a continuous source of long term concern to local residents, even more than it is at present from the fear of leakage of toxic material from the site.
- 4.41. The groundwater levels in the Lincolnshire Limestone vary considerably. The site is in a sensitive location for both ground and surface water. The close proximity of groundwater abstraction points to the site is of concern (KCWW1.2 p47-48.5).

Augean's Record

- 4.42. The safety record of the company gives rise to legitimate concerns about its ability to handle LLW safely. Augean had a worsening safety record in 2008, only slightly improved in 2009. The claim that this is down to better reporting is not convincing. The company's own verdict on its performance is sufficiently damning to belie this – 'much work still to be done' (OD8 pg25).

Equally unconvincing is the explanation that the RIDDOR incident in 2008 could have been down to someone staying off work for 3 days (OD8 pg21).

- 4.43. The explosion at Cannock in November 2010 has increased fears, especially given that Augean was fined for 6 incidents of dangerous practices in May 2009 (OD23), which suggests a culture of sloppiness. News reports of the Cannock incident (OD83) suggest that both the company and the EA were warned by local residents of unusual smells in the days before the explosion but neither did anything. The company has also been prosecuted by the EA for improper practices at the Thornhaugh site (OD35).

Motivation

- 4.44. The motivation of the company is almost bound to be a cause of suspicion, especially when a leading corporate aim is to reward its shareholders. While this is a perfectly legitimate aim, it seems less appropriate in the context of the disposal of a potentially hazardous material. Safety might be compromised in the quest for profit. This seems to be born out in Augean's reluctance to spend money on a security fence. Perhaps the decisions not to opt for a roof for the landfill or to alter existing practices to accommodate this new waste type are also motivated by a desire to save money. Given that one of the political imperatives for using landfill for LLW disposal seems to be to save money, there is no confidence in safety being the overriding consideration.

History and Location of the Site

- 4.45. The site had a malign reputation from the period before Augean became involved. At the start of the period when it began to receive hazardous waste, there were reports of bad smells emanating from the site, and numerous people reported health symptoms (AP15.2). A member of the former operator's (Atlantic Waste) management was involved in practices that resulted in him being jailed. This created an atmosphere of mistrust and suspicion which the application to dispose of LLW has revived.
- 4.46. Related to this is the nearby Corby toxic waste scandal, which has been frequently in the news over the last two years. Children were born with deformities as a result of careless practices in the dismantling of sections of the town's steelworks (AP15.2). The tragedy happened despite the existence of risk assessments. The Borough Council has agreed to pay compensation. This has brought home to local people how vulnerable they are and would be to supposedly 'safe' and 'approved' practices. It is hardly surprising that Corby Borough Council regards this new proposal with alarm (AP15.30).
- 4.47. The site is less than 1.5 miles from 2 schools, there is a haulage company nearby and dwellings are very close (KCWW1.2 p49-50.2). Planning permission was granted for 150 houses on the north side of KC and the village is designated as a Rural Service Centre (KCWW1.2 p51). The road to the site is an accident 'black spot'. The site is clearly not an appropriate location as demanded by PPS10 and the development would not meet the relevant principles in this guidance (KCWW1.2 p52-54.2, see also AUG3.3 Appx3).

The Inquiry

- 4.48. The attitude of the Augean team at the inquiry has done nothing to allay fears. Branding those who oppose the proposal as 'irrational' has not suggested that the company has any consideration for the fears of local people. When it emerged that one such example of irrationality was suggesting that a roof might reduce the amount of leachate needed to be dealt with, it became clear that the accusation was a tactical manoeuvre to try to discredit the views of local people, rather than a justified comment on our mental fitness.
- 4.49. The attempts to introduce the planned extension in the appellant's Statement of Case (A1 p10) and then to deny that it is relevant to the present appeal is a tactic to convince the SoS of the long-term feasibility of the site, while at the same time denying that it has any significance for this appeal. Local people, who were dismayed by news of the extension, would be condemned to hosting a national LLW facility. The company is not being straightforward.

The Radionuclides and the Scientific Arguments by Dr Busby

- 4.50. Dr (also Professor) Busby advises that he is an expert on radiation and health. He has been an expert witness in more than 40 cases in this area (KCWW2.2 pg3-8). His particular field of expertise is the health effects of internally deposited radionuclides. He states that he has made fundamental contributions to the science of radiation and health in this area and has published many articles and reports on this subject.
- 4.51. His researches led him to conclude that the health consequences of exposure to internally deposited radionuclides cannot be either scientifically or empirically assessed using the averaging methods currently employed by risk agencies (ICRP, NCRP) based on the Japanese A-Bomb studies and other external high dose exposures. The radionuclide dose coefficients published by the ICRP and employed in calculations made by these organisations are unsound since they depend on inappropriate averaging of energy in tissue. This is increasingly seen to be so by many official radiation risk agencies and committees (e.g. IRSN 2005, CERRIE 2004a, CERRIE 2004b), yet the historic weight of the conventional approach to radiation risk (with whole organisations committed to the historic approaches) has prevented any change in policy. Such an official acceptance of the scientific illegitimacy of the current radiation risk model for internal radiation exposures would have far reaching and financially costly policy implications.
- 4.52. Dosimetric analyses and risk calculation based on the current ICRP risk model will give reasonably correct results for external irradiation and can be used as a baseline for predicting the minimum level of ill health that is likely to result from external radiation exposures but the results significantly underestimate the additional risks from internal, inhaled or ingested radioactive material.
- 4.53. The proposal is to landfill a very large quantity of radioactive waste in an existing site in central England. It would be the beginning of a process of disposal all over the UK of enormous quantities of radioactively contaminated

material from the decommissioned nuclear power stations. The contamination at the nuclear sites, which currently exposes workers and causes cancer in local communities would, through this route, disperse the radioactivity to contaminate much larger populations. The EA states in the draft Permit (EA9) that the nearest village to the landfill is Duddington, 2.2km to the north west. What is not mentioned is that there are other very much larger local populations such as Peterborough (15km to the east/downwind), Rutland (13km), Boston (20km), Stamford (7km), Grantham (27km).

- 4.54. Material from this radioactive source would inevitably disperse towards each of these populations, depending on the weather conditions. Radioactive particle re-suspension, radioactive gases like tritium, radon, thoron, radioiodine, radiochlorine, tritiated methane, radiomethane, radiochloro- and radioiodomethanes would all escape from the pit and float across the few kilometres to be inhaled by the large populations of these surrounding towns. The groundwater would inevitably become contaminated. The pit lies on high ground between the Rivers Nene and Welland.
- 4.55. This proposal is madness. The area of the pit is 0.22sq km. The radioactive contents of the pit, according to the EA (draft) Permit (EA9) would be 17,000 GBq or 1.7×10^{13} Bq. The pit would contain 5100GBq of Cs-137, about a quarter of the amount released in the Windscale reactor fire in 1957. Yet this is an 18-fold reduction by the EA on the application which was for more than 4 times the releases of the Windscale fire. As an area concentration, it would be 23,000 GBq Cs-137 per sq km. The 30km radius inner-evacuated Chernobyl exclusion zone was defined in terms of the same isotope, Cs-137, as contamination above 555 GBq. Therefore, in terms of Cs-137 alone, the ENRMF pit would contain Cs-137 at four times the concentration of the Chernobyl exclusion zone. The UN definition of radioactively contaminated land is 37 GBq km⁻². So the pit would be contaminated with 17,000 GBq of mixed radioactivity. This would be an area concentration of 77,272 GBq km⁻² and some 2088 times higher in radioactive contamination than the UN reference level. This absurdity is proposed by those with expertise in risk management and finding ways to de-fuse public opposition, using an incorrect, outdated and falsified radiation risk model which even the author of the model now concedes cannot be used to predict potential harm [Inspector's note - see AUG4.4].
- 4.56. Worse is that the pit has (and would have) a plastic liner to try and prevent the radioactivity moving into the groundwater. But if the 2mm plastic is not broken anywhere (and this is unlikely) the rain will fall and fill up the tank that this liner represents. Most of the radionuclides are soluble in water, especially the acid water that would result from the interaction of all the materials in the mixture. Eventually, the resulting pond will overflow into the surrounding area. It is proposed to take this horribly radioactive solution and tip it into the estuary of the River Avon near Bristol via the sewage works, thus effectively transferring the nuclear waste from the decommissioning to the Severn Estuary (KCWW2.2 pg3) (Inspector's note - see AUG2.2 pg37 p8.10 re use of leachate in the soils stabilisation plant).

- 4.57. Dr Busby is not alone in believing that the risks from internal radioactivity have been significantly underestimated (KCWW2.2 pg8). A statement to this effect was drafted and signed by all those who attended the 2009 international conference of the European Committee on Radiation Risk (ECRR) in Lesvos, Greece: the Lesvos Declaration (KCWW2.2 pg9-10). Dr Busby has little regard for those who made the Augean application (KCWW2.2 pg11-15). He provides a detailed exposition of ionizing radiation and health, including the development of dose limits, explanation of the main radiation units, biological effects, the development of dose-response relations for internal emitters, the science of external and internal radiation, the recent revolution in radiation risk perception, genomic instability and so on (KCWW2.2 pg16-46).
- 4.58. In summary, the history of radiation risk models shows that the exposure levels permitted by policymakers have continuously been readjusted throughout the last 80 years, as every new discovery both in science and in epidemiology has shown that radiation exposure is more dangerous than previously thought. This process of discovery continues today although the dose limits are stuck at their 1990 levels. This is because the current official radiation risk models have not incorporated the most recent discoveries since to do so would force a complete reappraisal of the current use of nuclear power and the historic harm done by releases of radioactivity in the past. Contemporary radiation risk models are so inaccurate for internal exposures that even some official risk agencies (IRSN) have pointed this out: yet they continue to be employed by governments and used by polluters to justify their past and present behaviour.
- 4.59. The weight of scientific belief about the dangers from internal radiation began to change in the mid 1990s with interest on the increasing evidence from nuclear site clusters and Chernobyl effects which clearly showed that the contemporary risk models were somehow false by a very large amount. Between about 1996 and 2000, evidence began to emerge from the laboratory for genomic and bystander effects. Since the then current ICRP model was based on genetic damage and a linear relation, it was implicit by 2000 that this basis was incorrect. This, and various other epidemiological evidence led to the Committee Examining Radiation Risks from Internal Emitters (CERRIE) and the 'Radiation Science Wars' of the early 2000s. The critical impact of the 2003 report of the European Committee on Radiation Risk (ECRR) and the epidemiological evidence from Chernobyl-affected territories that the ECRR predictions were close to, was seen as a turning point in a paradigm shift that continues today.
- 4.60. It is only the biased scientists of the nuclear military project and the economic and military vested interests that continue to support the conventional model. Part of the problem is that the area of radiation risk is not one area but many. Each expert, such as the physicist, the chemist, the epidemiologist or the biochemist, sees only part of the picture and assumes that absorbed dose is meaningful but we are approaching reality if we think through the ionisations and their position on the target DNA. Few experts in this field see the whole picture. The physicists say that the Hiroshima studies show that the cancers are only there when the dose is high but they don't see the chemistry, they don't know that the 'stuff' gets inside you and binds to

the DNA. What do chemists know about dose? But if dose isn't appropriate or real (and it isn't) the whole house of cards collapses.

- 4.61. The application is for the disposal of a very large quantity of a range of radionuclides at limiting final concentrations of 200,000Bq/kg (i.e. 200Bq/g). Despite the description as low level waste, these are high levels of radioactivity. Nevertheless, for 3 radionuclides examined, U-238+, Co-60 and Cs-137+, the calculations made by the UKAEA for the final doses rates over the 30cm landfill cap would be broadly correct for these three radionuclides but others have not been examined. There are nuclides in the series decays that have very high photon energies which will enable them to penetrate the cover of 30cm of soil without difficulty. Some of these would be deposited in the cover itself by gas flows from the parent nuclide. The final mix, with neutral cover, would represent a significant external radiation hazard since even these three solid nuclides alone would be producing an external dose over the soil covered surface of some 70 microSv/h, which is 1400 times background and represents an annual dose of 600mSv. If the aim is to have a limit of 0.15mSv from any source, then this would be achieved by standing on the tip for 2 hours. And that does not take into consideration all the other gamma emitters tabulated in the application (KCWW2.2 pg47-49 including Table 5.1.2).

Dispersions and Exposures - Collective Dose

- 4.62. The methodology employed in the last 10 years for calculating the effects of exposures is to model these using the ICRP system of dose coefficients and to ensure that the most exposed individuals, the 'critical group', are kept below exposures that represent a certain level of predicted harm, based on fatal cancer. This is the methodology deployed by SNIFFER (and now also by HPA) (KCWW2.2 pg49-50). Apart from the errors involved in using ICRP dose coefficients (KCWW2.2 pg34-35), there is another issue. Prior to the introduction of the current critical group system, calculations were made on the basis of 'collective dose': all the individuals exposed were considered as a group and the total exposure was considered to be the collective exposure (KCWW2.2 pg49).
- 4.63. The change in method is particularly relevant to operations like Augean where there are not many people living very close to the pit. There is, however, a very large number of people who would be exposed at a low level some distance from the pit. Dispersion modelling has been carried out to give one example of a 12 hour release from the pit of unit tritium water vapour (or carbon-14 methane): radioactive gases from the pit would be inhaled and cause small though finite doses to the populations of major local towns including Peterborough, Boston, Kings Lynn, Grantham but would also affect populations as far away as Birmingham, Manchester and Liverpool (KCWW2.2 pg50). The millions of people in these towns may receive very small doses but the 'collective dose' argument would ensure that some of these people would die of cancer as a result of these low doses. The 'critical group' approach skims over this awkward fact.
- 4.64. The leachate would be extremely radioactive and the gaseous nuclides - Tritium, Carbon-14, Chlorine-36, Iodine-129, Radon, Thoron - would be

degassed out of the mix since these pits always heat up slightly from bacterial activity or the pit would be heated by the sun and the gases would emerge. The radon and thoron would permeate the cover and decay from these nuclide daughters would deposit new radioactive elements in the cover soil which would become in secular equilibrium in terms of its activity in a short time (KCWW2.2 pg50).

Errors in the Report and in the Calculations

- 4.65. Many seriously dangerous radionuclides are missing from the tables in the draft Permit (EA9) (KCWW2.2 pg51-52). These are the series nuclides. Their presence would increase the total quantity in the pit by a substantial amount and, since many of them are gamma emitters, some with high photon energy, some capable of moving easily into the topsoil cover since they are decay products of gases, their presence would make a major contribution to the gamma doses over the surface of the pit. [Inspector's note: Augean gave a detailed explanation, with references, as to why none of the radionuclides is missing and pointed out that, in any event, this is a matter for the EA.]

Effects on Future Generations

- 4.66. The pit would still be there in the year 100,000, as would a very large amount of the radioactivity. The material would inevitably contaminate humans and deliver external doses to humans, animals and plants. It is silly to suggest otherwise (KCWW2.2 pg52 p5.4). Consultation on the Permit application provoked a detailed response from Richard Bramhall of the Low Level Radiation Campaign (KCWW2.2 pg55-80). Dr Busby's conclusion is that the application is flawed through error in calculation, omission of radioisotopes, routes of exposure, use of an incorrect risk model (that of the ICRP) and by specious reasoning.
- 4.67. In conclusion, the LLW should be packaged where it is and left alone, forever.

Commentary on the Scientific Case

- 4.68. The oft-repeated arguments of Augean, the EA and most of the scientific establishment as to the safety of LLW is not convincing. There is sufficient disagreement within the wider scientific community and uncertainty about long-term consequences for the 'Precautionary Principle' to be invoked, especially in view of the proximity of the site to such a large population (KCWW1.2 pg45-64 p26-33.1).
- 4.69. The fact that the EA saw fit to reduce Augean's proposals for a radiological limit for disposal by 18 times (EA9 p1.5) suggests ignorance on the part of Augean or opportunism or significant issues with the modelling. It does not suggest that the company was adopting a responsible and risk-informed approach to the issue. None of these explanations gives rise to much confidence on the part of those who would be left with the waste.
- 4.70. Some types of radionuclides that would be destined for the site would not create a sense of well-being. Technetium-99 and the plutonium and uranium nuclides are particularly unstable and alarming. Some of these are long-

lasting and suggest that the period of 60 years after closure is too optimistic to guarantee long-term safety. Dr Busby particularly singled out Tritium, Iodine-129 (a half-life of 15 million years), and Thoron as problems, an argument that was not challenged by the appellant.

- 4.71. Augean largely avoided going into specifics about the type of radionuclides it would import to the site, and concentrated simply on total radioactivity and dose levels, as if all radionuclides were equal. How could people be sure about the safety of such material when they did not know what it would be? And taking material that would otherwise be considered for deep geological disposal would not be reassuring (KCWW1.2 p28.1). Similarly, the longevity of some of the radionuclides has been avoided. Some leach easily into groundwater and some are very dangerous in dust form. Limits may be needed for long-lived beta and gamma emitting radionuclides based on analyses of specific disposal facilities, with the longer-lived group recommended for deep geological disposal (KCWW1.2 p28.2, 28.3).
- 4.72. Dr Busby's reputation was attacked by the appellant's team but most of his scientific testimony was not, suggesting that it was correct. Dr Busby gave evidence of a number of scientists who were prepared to challenge the ICRP, thus confirming that there is a scientific schism, which Mr Miles for Augean had sought to deny (AUG1.2 p7.80). The fact that the HPA (on which the EA relies for radiological advice) agreed with the ICRP is not so surprising given the high number of its advisers who are on the ICRP. This narrowness of opinion gives rise to the erroneous impression that the scientific community is united on the issue. Yet it is precisely the lack of agreement which gives rise to a perception of harm.
- 4.73. Prof Wakeford for Augean conceded in his proofs that evidential certainty about the risks from the lower levels of radioactive materials is lacking (AUG4.2 p5.13). Assumptions have to be made based on the controversial 'Linear No Threshold Theory', which assumes a progressive reduction in harm but ignores the actual effects of DNA damage which can be more serious at lower levels where cell mutation rather than cell destruction results (KCWW2.2 p32). It is this uncertainty and the conflicting opinions of scientists, like Dr Busby and Prof Wakeford, which give rise to fears.
- 4.74. Also, the EA says that there would be adverse effects on health (EA9 pg31 p3.7) but they would be below detection levels – in epidemiological terms. The EA also says that radiation could increase (EA9 pg53 p15.12, KCWW1.2 p27.4, 27.5). The ICRP and the HPA say that the long term behaviour of radionuclides cannot be predicted (HPA5 pg16) and the HPA confirms the uncertainties in calculations to assess doses and radiological risks (HPA5 pg4).
- 4.75. Prof Wakeford was cross-examined about the KiKK study (KCWW1.2 p26.7, T26) which had revealed a two-fold increase in rates of childhood leukaemia for under-5's within 5km of all German nuclear power plants. He put the cause down to population movement and denied that there had been a 'maelstrom' between scientists. In fact, a German government 'expert group' did not rule out radioactivity from the nearby plants as a possible cause (T28

p199) and, as Dr Busby has shown, there are numerous scientists who consider it a real possibility.

- 4.76. The ICRP has barely considered this explanation, perhaps because it would mean that its calculations on risk were highly inaccurate. The public is being asked to believe that it was viruses, not radiation, even though the only known cause of childhood leukaemia (though others are suspected) is radiation. We are in no position to decide who is right but the peremptory and scornful dismissal of the radiation explanation is unhelpful. The worry is that the recorded emissions from those German nuclear plants were a tiny fraction of the figure suggested for ENRMF.
- 4.77. Leukaemia clusters have also been recorded around British nuclear installations, notably Aldermaston, Sellafield, and Dounreay. When asked, Prof Wakeford thought there may have been a study done for the area around Clifton Marsh but he was not sure. He knew about the cluster at Seascale and he denied that this could be linked to nearby Sellafield. Seascale is only 4km from the LLWR at Drigg, although he appeared not to have considered the possibility of any link.
- 4.78. The friction between Dr Busby and Prof Wakeford was evident at the inquiry and clearly demonstrated a 'scientific schism'. The scientific 'establishment' has done itself few favours in the way it has handled the KiKK findings – a greater preparedness to try and seek out the real causes, as opposed to the defensiveness with which it has reacted simply leads to uncertainty and worry. Professor Wakeford's attempts to discredit Dr Busby during cross-examination did little to allay fears.

Working Practices

- 4.79. The application speaks of 100 lorry loads a day arriving at the site (PA1 SLE AppxE letter pg4). They would presumably bring a mixture of hazardous and LLW and would give a gap between lorries of 7 minutes, assuming they were all spaced out regularly. It is doubtful that this rate of arrivals could be handled efficiently or safely and the necessary checks be made.
- 4.80. The demonstration (by Mrs Heasman) of the containers that might be used (AUG2.3 AppxC) to transport LLW to the ENRMF was not impressive. She later conceded that most of the waste would not be carried in the model demonstrated but simply in double bags, or plastic drums and that none of these would have any shielding effect and would be purely for containment. It can be assumed that much of the incinerated ash from Fawley would be carried in these drums; their resilience in a high-speed road accident seems low, and the prospect of radioactive ash being scattered is unappealing.

The Models

- 4.81. The reliance on models causes special anxiety. Two in particular raise concern. The first of these is SNIFFER, which forms the basis of the radiological assessment, effectively the risk assessment. It is prone to failing (KCWW1.2 p30.1-.8). This model specifically warns that it is unsuitable for use in co-disposal situations, and for large users (S3 pg.i), as in the appeal

- proposal. The appellant claims to have modified the model but there is no evidence of where it dealt with either of these two issues.
- 4.82. The model also contains errors. Its website admits to having had to make changes, and the appellant also admits to the model having errors (PA2 AppxC Annex B pg21). It must be assumed that there are more, as yet undiscovered ones, as is the way with models which rely on projections often modified by experience. The main concern over these models is not so much the obvious uncertainty of their predictions but the degree of confidence shown by the appellant in their outcomes. The risk assessment consists of little more than relating any problem to a consequent dose level and then declaring 'low risk'.
- 4.83. One knows from experience, in weather forecasting, climate change predictions and economic forecasts, that the results of any modelling exercise are entirely dependent on the quality of the information fed in. In certain eventualities (air crash (KCWW1.2 p30.5), road accident (KCWW1.2 p30.6), and dropped bag (KCWW1.2 p30.4)), the information fed in is incomplete and reliance on the model to the exclusion of due consideration of human behaviour is unjustified. When the appellant declines to put up a fence around the site, citing low risk, it is feared that immersion in models has taken hold at the cost of common-sense solutions.
- 4.84. The second model, ERICA, is used to predict harm to the environment, including wildlife (KCWW1.2 p30.9-31). This model comes with numerous warnings (T27 pg5-6) as to uncertainties, none of which is mentioned by the appellant. The effects of radiation on different species are unclear. In the table provided, all birds come under the heading 'Bird' (PA2 ES AppxC AnnexD pg53), which hardly distinguishes between a wren and a red kite. This appears to reflect a lack of concern for the environment, echoed by Augean/Mrs Heasman when, on being asked about the effects of leachate spillage on wildlife, replied that there was no problem as any dead fish, etc. would not enter the food chain.
- 4.85. Whether perception of harm to the environment, as opposed to humans, is a valid cause for concern is for the SoS to consider but, in a rural area, it is a matter of great seriousness. The recent re-introduction of the red kite has been a huge success, with benefits not just in terms of biodiversity but also tourism. However, there would appear to be a risk from radiation which the ERICA model is not detailed enough to disprove. Red kites feed off carrion, including burrowing animals. Animals do not just burrow to find food but for shelter, and so the lack of organic matter [Inspector's note: 6% organic carbon - see report p1.36 above] on the site is irrelevant. Rabbits have been burrowing within the Sellafield perimeter and at Dounreay (OD82), so there is nothing to stop them from doing likewise at ENRMF and then being consumed by the numerous red kites.
- 4.86. When the Great Crested Newt population was found by Augean to be in the way, they were simply moved out – a process which the company highlighted as showing its concern for the environment but which might not have been viewed in such a benign light by the newts! Exposing wildlife, for which we

have a duty of care, to danger, based on a model which admits it lacks sufficient data, would be irresponsible.

- 4.87. Perhaps the most worrying aspects for local people about the modelling and scientific knowledge are the uncertainties surrounding the long-term effects of disposing of radioactive waste in the landfill. Both the HPA and ICRP warn that the long-term behaviour of radionuclides cannot be predicted (HPA5 pg4 last para and pg16 top para). This suggests that if shallow burial is appropriate, it should be located where the situation can be closely monitored for far longer than the 60 years proposed by Augean, and by people who are more experienced in such matters. The worry is that landfill disposal is regarded as a cheap, short-term solution, when the problem is clearly long-term.

Economic Insecurity

- 4.88. Although the NDA's Strategic Environmental Assessment suggests that there might be no economic ill-effects from such a development (NS19 pg4), this is not accepted. Firstly, the only possible sites which could have been used for measurement are Clifton Marsh and Drigg, both of which are near to nuclear sites whose economic benefits are indisputable. Also, in the case of Clifton Marsh, it is only a few miles from Preston. Thus, it would be impossible to separate the economic effects of the waste site from the wider economy of the area. KC is different, with the economy being more localised. Note also how the NDA uses guarded language such as 'expected to be' and 'did not identify conclusive evidence', which suggests that it is doubtful of its own assertion. Mr Miles for Augean declared himself satisfied with the NDA's assessment, despite conceding that it had no landfill on which to base its conclusions. This opinion borders on the irrational.
- 4.89. Mr Miles also argues that Clifton Marsh has operated for 20 years without worries from the local community and that the fact that only 2 people had objected to the extension of its planning permission showed broad acceptance (AUG1.2 p9.37). But there is no comparison between Clifton Marsh and King's Cliffe. At the former, most of the waste comprises near-site disposal from the Springfields plant. The economies of Clifton Marsh and Springfields are intertwined to the extent that many of those living near Clifton Marsh work at Springfields or benefit from it. The total amount of waste permitted at Clifton Marsh is 10,000 tonnes pa compared with up to 249,999 tonnes pa of LLW at KC if this appeal is allowed. Only 2,000 tonnes are allowed to Clifton Marsh from outside the area, whereas none of the LLW to KC would be from the locality. Also, the operators at Clifton Marsh have long experience of handling LLW.
- 4.90. If there are communities that are not opposed to the disposal of nuclear waste in their midst, as Augean claims at Clifton Marsh, then they might be better equipped to receive it, especially since public acceptability is the leading key principle of the NDA 2010 strategy (NS17 pg11 p2.1).
- 4.91. The inquiry has received letters from local businesses expressing concern (AP15.9/11/13/21) and from the local County Councillor (AP15.2) referring to possible economic problems that might be caused by the proposal. Loss of

business or earnings would cause economic hardship leading to stress, a recognised medical condition which amounts to 'harm'. If people were not attracted to the village by the prospect of living near to a nuclear waste site, then houses would not be sold, prices would fall and many would find themselves trapped by negative equity. This would also lead to stress, and 'harm'. The situation could be resolved by siting such facilities in areas which are economically accepting of them.

Perception of Harm - Conclusion

- 4.92. A person who has lived in KC for the last 10 years would have experienced the following:
- The hazardous waste site forced by a High Court decision, despite opposition at local, County, and inquiry levels (AP15.2).
 - Bad smells and illnesses at the start of hazardous disposal (AP15.31).
 - The Corby toxic deformity cluster (AP15.2).
 - The proposal to dispose of LLW.
 - The poor level of consultation, which included misleading information about the safety of the proposal.
 - The discovery from a Freedom of Information request that radioactive waste had been disposed of at Thornhaugh, and the fact that Augean had not revealed it.
 - Knowledge about Augean's worsening safety record.
 - The announcement of the proposed extension to the site.
 - The explosion at Cannock.
 - The attitude of the company at the inquiry in branding opposition as 'irrational'.
- 4.93. How irrational is it for a person who had experienced all of this to have at least some perception of harm? The combination of these factors gives rise to an objective perception of harm. The SoS should err on the side of caution and allow local people to carry on their lives free from this anxiety (KCWW1.2 p27.6).

Need

- 4.94. The 'need' is set out in the 2007 Defra Policy document (PP2) and the 2010 NDA Strategy (NS17) but the interpretation put on this need by Augean or by RSRL is not accepted. The need is fed by the current process of decommissioning and by the understanding that, if new disposal sites did not come forward, LLWR Drigg would be full by 2036. The 2007 Policy was an early warning of this situation and an attempt to stimulate progress and change in current disposal practices. The call for early rather than late solutions was no more than a message that operators and councils should start the planning process soon. It was not a panic measure designed to bring about immediate solutions as a matter of urgency, as has been claimed (AUG1.2 p4.7, p9.46).
- 4.95. If the Government had considered the need to be urgent, it would have been more proactive in recommending a particular means of disposal. Also, if it

had seen landfill as the desired solution, it would have been more effusive in its support than it 'sees no reason to preclude' (PP2 pg9 p19). Even the 2010 Strategy declines to come down in favour of landfill over other options.

- 4.96. The type of replacement facility for LLWR Drigg seems rather left to chance. The best case scenario has Drigg full up by 2070 (NS7pg57) but this would still leave large amounts of LLW of too high a level of radioactivity for landfill disposal, with nowhere to go. Either a new national facility will have to be built to cater for these wastes, or vaulted facilities on nuclear sites will have to be constructed. The NDA letter referred to by Mr Miles/Augean (AUG1.3 AppxD) seems oblivious to this unavoidable fact. Since such facilities will have to be built eventually, why litter the country now with radioactive waste in landfills which are not designed for this purpose and at the same time arouse public hostility towards nuclear waste? The obvious solution is for those wastes to remain where they are, or be sent to a new, purpose-built facility which is going to have to be built at some stage anyway.
- 4.97. We are living in harsh economic times but radioactive waste disposal is for the long-term and we should not penny-pinch now at the expense of those in the future for whom risks should be no greater than at present (PP2 pg9 p19). There is nothing in the 2007 Policy to suggest that saving money is the most important factor. That the 2010 Strategy gives more emphasis to cost effectiveness is doubtless due to present financial difficulties. The apparently huge costs should be put into perspective. The figure for a new LLWR is given as £2 billion (NS7 pg57), although the NDA letter (see above) refers to savings of £1 billion over 100 years if the new facility is not built. Yet the cost of a new facility is likely to amount to only a small fraction of the total NDA budget over this 100-year period and its gain in terms of public confidence and acceptability - the leading key principle of the 2010 Strategy (NS17 pg11 p2.1) - must be factored into the equation.
- 4.98. Note also that if the LLW Policy had intended landfills to step forward to fulfil the need, then it has failed. At present, only Clifton Marsh has applied to continue taking a very modest amount of LLW (10,000 tpa, and only 2000 t of that from sources other than Springfields and Capenhurst). Lillyhall is awaiting planning permission, but it will only accept VLLW, and probably only from Sellafield. Keekle Head has tried but not received authorisation and, given that this failure was due to groundwater issues, it is unlikely to be successful in the near future. That leaves ENRMF, which is applying only until 2013. Augean thinks it very unlikely that any other landfills will come forward in the immediate future and admitted that the 'sustainable network' (AUG1.2 p6.114) in the south of England would consist of only ENRMF if this appeal succeeds.
- 4.99. That puts the onus on the nuclear industry and, despite the gloom of the above NDA letter, there are signs that on-site disposal is a possibility. Of the decommissioned sites in the south, Hinkley Point, Harwell, and Sizewell have shown some interest in burying waste on-site. Of the County waste plans affecting all the southern sites, only Somerset and Essex explicitly ban disposal of nuclear waste (although the former will allow storage) (AUG1.3 AppxB). Both plans were adopted before the 2007 Policy, so attitudes may well change.

- 4.100. The NDA and Drigg LLWR have jointly conducted consultations among decommissioned sites into on-site disposal (NS21 pg43, KCWW1.2 p43.4-43.11) and have met with a generally favourable response. Dounreay has gone ahead with its own facility; Springfields has applied for permission to dispose of its own waste on-site; Hinkley Point and Sizewell A have shown favour (NS24 pg105, KCWW1.2 p43.12-43.14), and Sellafield is considering on-site disposal of VLLW (NS22 pg35). Harwell has on-site disposal in its Lifetime Plan (T36 pg8). The Drigg LLWR has also stated that VLLW in large quantities of soil and rubble should be disposed of 'in the immediate vicinity of the waste sources, to avoid adverse environmental and economical consequences of transport' (NS21 pg34).
- 4.101. In the (Drigg) LLWR Management Plan, strands WD3 and WD4 are devoted to investigating the possibility of on-site or near-site disposal for VLLW and LLW respectively (NS15 pg62-3). While strand WD2 is looking at alternative VLLW disposal routes, this appears to involve the waste being processed through Drigg which, if it was then to come to ENRMF, would be an unjustifiable flaunting of the proximity principle. These initiatives within the nuclear industry seem to suggest that the tide is turning in favour of the industry disposing of its waste itself.
- 4.102. Mr Miles/Augean pointed to a letter from the NDA (AUG1.3 AppxD) which said that the "business case/s for construction of new infrastructure on NDA owned land has not so far been compelling" (pg1 p3). The phrasing does not appear to signal a firm rejection of on-site disposal, and if no further offers from the supply chain come forward, it might still be the only solution. This letter, which is much more cost-motivated and directed towards a particular solution than the 2010 Strategy (NS17), is simply an encouragement to the supply chain to proceed with proposals, rather than a change in direction. Money is an important factor and the NDA is accountable to the taxpayer but money is not - in either LLW Policy or Strategy - the most important factor.
- 4.103. Nor should it be forgotten that the benefits of disposing of the waste at-source would far outweigh the costs, at least in ways that go beyond the purely financial. Communities that have lived with nuclear facilities for years would see a net reduction of radioactive emissions after on-site burial. If the waste were to go to ENRMF, those communities would see a reduction but still have to live with a measure of radioactivity. In the case of Harwell, the reduction is estimated to be only 0.001 mSv/yr (PP24 pg103) but KC would experience a significant increase in radioactive emissions. In terms of the cost/benefit equation, this proposal does not make sense.
- 4.104. The future arisings of LLW/VLLW to 2019 are huge but a proposal until 2013 would do little to solve the problem (KCWW1.2 p44.3). There may be a need to dispose of LLW but there is no policy that identifies KC as the ideal location to receive it (KCWW1.2 p40-45.1).

RSRL Harwell Need

- 4.105. The 2007 Policy also states that 'Early solutions does not necessarily equate to early disposal' (PP2 pg9 p22). It goes on to suggest that 'decay storage is

perfectly acceptable'. This solution was recommended by Dr Busby as the safest method of disposal and it appears to be the situation existing at Harwell. Augean refers to the urgent need for sites like Harwell to dispose of such waste (AUG1.2 p9.46), although this does not seem to fit with Government policy.

- 4.106. The need of Harwell has become confused, perhaps deliberately, with the national need. The former appears to be driven by financial considerations (for example, the mention of the £15 million of savings by RSRL (T37 pg9 p2b)). There has been some obscuring of the situation by RSRL. Mr Miles refers (AUG1.2 p7.37) to a letter from RSRL implying that off-site disposal is the BPEO for Harwell, when in fact that option scored fewer marks than on-site disposal, a fact that explains why RSRL was advertising this solution in its March 2010 Lifetime Plan (T36 pg8). One possible reason for Harwell to ignore its BPEO result, and instead encourage Augean to apply for permission at ENRMF, is simple opportunism. If Harwell had such an urgent need to dispose of its LLW then it could have begun the process of applying for permission to build the HVLA facility over 2 years ago.
- 4.107. There is no urgent radiological need for Harwell to transfer its waste off-site. Its dose emissions were measured at only 0.006 mSv in 2009 and these were expected to fall to only 0.005 mSv after decommissioning (KCWW1.2 p42.3, PP24 pg103). Not only were emissions significantly lower than those projected for ENRMF but the benefit of disposal, be it off- or on-site seems hardly worth the effort. Furthermore, the same report (pg103) shows that Harwell was importing waste at the same time as it was helping Augean with its application, strange behaviour for a site which is apparently desperate to offload waste.

Economic Sustainability

- 4.108. It is not clear how the proposal would bring any benefits to the local area, other than the hand-outs from the Community Fund which will dry up long before the radioactivity does (KCWW1.2 p34-39.5). Job opportunities would be negligible and presumably no greater than at present. The benefits would be to the wider, national community (as well as Augean) but these would accrue no matter where the waste was buried. It would fit in more with the ICRP Principle of Justification (KCWW1.2 p38.2) if the waste were kept on the nuclear sites whose communities became prosperous while the waste was being generated and where the balance between benefit and detriment would be consequently more even.
- 4.109. At present there is a proposal in the pipeline for a holiday complex at nearby Rockingham Forest (AP15.13). This would be a model of sustainable development in that it would provide local jobs during the construction phase and even more, once opened, for service providers and for those employed in the complex. It would create desirable jobs in the leisure industry which would appeal particularly to young people who could remain in the area, as well as part-time seasonal work. This would fit in with the North Northamptonshire Core Spatial Strategy Policy 11g (PP10 pg56) aim of tourism as a provider of employment.

- 4.110. The developer, RVM Industrial Landlords, is unhappy with the ENRMF proposal but he has the option to take his business elsewhere, in which case the village would miss out on this opportunity to secure a rare proposal for sustainable development. If it came to a choice between LLW or a holiday complex, there is little doubt which one would offer more to the community. To deny the residents this would pile detriment upon detriment.
- 4.111. The towns and villages of north east Northamptonshire form part of an historical landscape; it would not be enhanced by this proposal and would not meet the PPS10 (PP5) criteria of being an 'appropriate location'. The PPS10 Companion Guide confirms that the location of a landfill must take into consideration the natural or cultural heritage of the area (KCWW1.2 p39, 39.1). The North Northants Core Spatial Strategy (June 2008) seeks to conserve the treasured environment of the rural areas while securing investment and renewal to transform run-down urban areas (KCWW1.2 p39.2). The potential for tourism and for the ingress of people seeking houses is based on the environmental character of the area; this would not be helped by a nuclear waste dump.

Proximity Principle

- 4.112. Augean's Table 2 below (from AUG1.2 pg79) purports to show how, hypothetically, ENRMF would fulfil the proximity principle by indicating that it is closer than Drigg or Clifton Marsh to each of the producing sites in the south.

Table 2 Comparative Distances to Disposal Facilities

Source	Distance to Clifton Marsh	Distance to LLWR, Drigg	Distance to the Appeal Site	Distance reduction
Harwell	200	281	94	106 – 187
Culham	197	278	91	106 – 187
Aldermaston	228	310	135	93 – 175
Winfrith	294	376	205	89 – 171
Berkeley	184	265	148	36 – 117
Oldbury	185	267	149	36 – 118
Hinkley Point	235	317	198	37 – 119
Fawley	272	351	178	94 – 173
Dungeness	312	393	164	148 – 229
Bradwell	276	358	113	163 – 245
Sizewell A	292	374	129	163 – 245

All distances are shown in miles and are taken from the AA route planner.

The table, however, is flawed. There is no column for vehicle movements or for on-site disposal, which would be a possibility for all apart from Hinkley Point (although this might change with amendments to Somerset's Waste Development Plan), Bradwell and Dungeness (although near-site disposal could be a possibility for these), and no mention of sites further north from which, one assumes, Augean would be happy to accept waste to fill up its remaining void space. Furthermore, it fails to take into account that Clifton Marsh is highly unlikely to accept waste from the south as it has only 2000 t

permitted from outside its local catchment and, according to the proximity principle, sites further north will have first call. Furthermore, according to current strategy, Drigg is only to be used as a last resort.

- 4.113. Much has been made at the inquiry about the weight to be attached to the proximity principle. Mostly the criteria seem to be the distances measured between sites. However, the real significance of the principle is in the number of journeys and the total mileage to be covered. Augean has secured the interest of Tradebe, which runs the Fawley incinerator near Southampton, a distance of over 170 miles. By far the largest amount of waste that Augean hopes to attract would come from this source, some 19,000 tonnes (AUG1.2 pg40 Table 1, shown at report p2.97 above), and yet it is one of the furthest places in the south of England. This does not seem to fit in with any interpretation of the principle. Nor does the fact that for overnight stops, the drivers from Southampton would have to proceed to Derby.
- 4.114. There is a clear move by LLWR to reduce road transport in favour of rail. If LLWR were to stop taking the lowest levels of LLW, and the ENRMF became the only site to accept it, then Sellafield would have no option but to send waste significant distances by road, resulting in higher carbon emissions from the nuclear industry (KCWW1.2 p46.2-46.9). The NDA supports the need to reduce road movement and the Royal Society of Edinburgh concurs that movement should be minimised on safety grounds.
- 4.115. Augean claims that ENRMF would be the only available location which could take these levels of LLW. NCC/Mr Aumônier argues that this is not the case and that other non-hazardous landfills could receive it. In any event, it need not be the case in 5 years time when developers, especially nuclear operators, could have constructed sites suitable for receiving this waste. This would solve the problems of need, public acceptability and proximity and, in terms of cost, would be an investment for a safer future.

Conclusion

- 4.116. The SoS is urged to take a long-term and holistic view of the Augean proposal; to see it on its own merits as well as part of a developing situation which encompasses not just the future of nuclear waste disposal, but also of the community in which it is to be deposited. He is asked to judge whether the proposal is part of a 'sustainable network' of landfills, or simply, given the lack of other applications, an aberration. He is invited to look at the moves in the nuclear industry to manage its own waste and consider whether this might be a better way of achieving public acceptability. As to the matter of costs, it is necessary to take the long-term view and weigh this factor against the issue of public acceptability.
- 4.117. The SoS is requested to consider the situation of King's Cliffe, to consider whether it is doing enough for the nation already in accepting hazardous waste, and whether the addition of radioactive waste is not a step too far; to consider whether a nuclear waste site fits in with the ethos of the rural, historic area, and with the aspirations of those who have chosen to build their lives there; and to consider whether the landfill location, so distant from any source of LLW, really is suitable. Most of all, the SoS is asked to reflect on the

judgements of local elected bodies at Parish, District and County level and to respect their rights to make decisions concerning the future of their own communities.

5. THE CASES FOR THE INTERESTED PERSONS

The material points are:

- 5.1. **Ms Louise Bagshawe, MP for Corby and East Northamptonshire**, represents the views of her constituents who have voiced significant concern over Augean's plans to dispose of LLW at the ENRMF (AP15.1). Augean argues, without foundation, that opposition to its proposals is weak, exaggerated and sparse. Within 3 months of her election as MP for Northants, Ms Bagshawe received 105 letters of objection, from a broad cross section of society, and many more subsequently. The number of complaints, including the petition of over 3000 names (AP16), is far from insignificant. The suggestion that because many thousands of people did not sign the petition indicates a silent consent for the proposal is a gross misunderstanding of local democracy; there is no petition in support of the development. And WW does not have resources available similar to those of Augean. Many people voted for Ms Bagshawe on the basis of her opposition to the appeal proposal.
- 5.2. According to the proximity principle in the 2010 UK Strategy (NS17 pg1), LLW should be disposed of at, or as close as possible to, the site at which it was produced but the ENRMF would take waste from nuclear sites throughout the UK, the closest being Harwell, around 90 miles away. This factor also raises concerns over the increased traffic volumes on the A43 from Oxford and then on the minor 'B' road to ENRMF and KC. Moreover, according to the precautionary principle, LLW should be disposed of in remote sites with a low population density: this site is within 12 miles of 250,000 residents, just over one mile from KC Middle School and two miles from the main village and its primary school.
- 5.3. Augean intends to treat LLW in the same manner as HVLA, despite their very different compositions and needs. The ENRMF site is a large uncovered space in the ground. Rainfall would lead to the formation of radioactive leachate. Many of those with an interest in this appeal have only recently learnt that Augean no longer plans to transport the leachate but to process it on site. Is this just another condition that the residents would have to accept? It is typical of Augean's disregard for the concerns of residents. Since the refusal of permission, it has refused press calls about its plans, while having the audacity to accuse Ms Bagshawe of being unwilling to meet them. Note the bizarre exchange of emails in August about a meeting (AP15.1 pg3/4). Phone calls to Augean in response to emails for a meeting were not returned.
- 5.4. Similarly, demonstrating Augean's disregard for local people, Apethorpe village, with a population of around 150, just 2.5 miles from the site, received no consultation or information from Augean until it attended a public meeting on 8th June 2010 arranged by local people and attended by some 40% of the village population. Many residents only learned of the plans via WW. Augean's Key Facts handout is misleading; it refers to the completion of the site in 2013 but Augean proposes to extend the working period (AP15.1 last page).

- 5.5. Augean argues that the quality of clay at King's Cliffe is optimal for the disposal of LLW but this clay is present in large swathes of the country, including areas without such large numbers of concerned residents living close by.
- 5.6. The LLW for disposal would be up to 200 Bq/g but the total volume of material being proposed may be a mechanism of diluting the radioactive element of the waste so the overall levels fall within an apparently safer limit. The projected radiation levels appear to take no account of potential airborne or waterborne emissions. The site is over an aquifer which feeds into a main water supply.
- 5.7. There are poorly maintained or non-existent perimeter fences at the site and Augean has not indicated that it will be providing any additional security, thereby increasing the likelihood of accidents and the transmission of contamination. This does not inspire confidence.
- 5.8. The access road is small, twisting and unsuitable for heavy lorry traffic. It is the cause of many accidents already, especially in the winter months, even before the additional and dangerous loads that this proposal would bring.
- 5.9. There are considerable implications for local livelihoods and the area's prosperity; it is understood that a local farmer has been informed that his insurance cover may cease. House prices stand to be affected. Airborne contamination brings the risk of radioactivity entering the food chain through the adjoining farmland. The site is close to the wildlife-rich vestiges of Ancient Rockingham Forest, containing threatened flora and fauna, which stand to be affected by airborne and animal-transmitted contamination.
- 5.10. Augean is based in North Yorkshire. The economic benefits of this development would fall outside of this constituency, with local residents simply left with the negative environmental and health consequences. There are fears as to effects on the general prosperity of the village, and the quality of life and safety in the short-term and for future generations.
- 5.11. Augean presents its proposals as benign and unthreatening, and the cause and strength of concern as pointless and weak. Ms Bagshawe has a responsibility to stand up for her constituents. The appeal should be dismissed. The commercial needs of Augean should not ride roughshod over the genuine fears and concerns of local residents who stand to be affected for generations to come. NCC has rejected this dump, as have the people who will refuse to endure its hazards for the sake of a company's profits.
- 5.12. **Northamptonshire County Councillor Heather Smith** (AP15.2) represents the villages in Prebendal Division in NE Northants including those around the appeal site. She is the Council's cabinet member with responsibility for waste planning and management. To reduce the number of speakers at the Inquiry, Cllr Heather Smith made representations on behalf of the communities of Apethorpe, Bulwick, Blatherwycke, Duddington, Fineshade, Glapthorn, King's Cliffe, Nassington, Southwick, Wakerley, Woodnewton, and Yarwell, as well as speaking on behalf of the 3 East

Northants district councillors that represent this area: Cllr Roger Glithero, Cllr John Richardson and Cllr Pauline Bradberry.

- 5.13. Cllr Heather Smith is a member of the Local Liaison Group for the ENRMF which meets with Augean twice a year to enable concerns to be raised about the operation of the site and for Augean to announce any changes it is planning to make. She attended public meetings on 2 July 2009 and 10 March 2010; both were attended by hundreds of people and the atmosphere was very hostile.
- 5.14. Any community would have understandable concerns about a hazardous waste site close to schools, homes and leisure facilities. The community at KC had little choice in the matter; planning permission followed a complex planning process including a planning appeal and legal challenge but it was always seen as a short term arrangement until the holes were filled or the permission ceased. Augean's plan to import LLW from other parts of England and to landfill it with the multitude of other toxic waste materials being disposed of at the site caused considerable alarm to the local communities. Furthermore, the announcement to the Liaison Group in June 2010 of its intention to seek to extend the landfill in both area and planning life for hazardous waste and LLW caused huge disappointment and distress. Another hole would be created and filled. And what chemical reaction could occur from the co-disposal of such materials and what impact would this have on the local environment? Northants has 'done its bit' for hazardous waste disposal; other counties should dispose of their own waste.
- 5.15. Whilst the parish councils of Collyweston and Easton on the Hill did not object to the appeal proposal, they now say that their response to the consultation would probably have been different had they known about Augean's future intentions. They had believed that the import of LLW would ensure an earlier closure of the site and its operations. Over 100 residents from Collyweston and over 200 from Easton on the Hill signed the petition opposing this application.
- 5.16. This locality has higher than average radon gas levels and there is a perception that this causes a higher risk of cancer. Thus there is concern about any increase to the risk. Note the birth defects in the form of physical deformities in Corby which have been linked to the clean up of contaminated land; and note the explosion at Chernobyl that caused radioactive dust to drift across to the Welsh mountains, such that local farmers could not sell their lambs because of the long term effect on the land. The local perception is that too little is known about the long term impact of this material on the local environment. The site is in a farming area with cattle grazing nearby. The Howard family says that it would not sell land for a westerly extension of the ENRMF but Augean says that it already owns enough land for the extension.
- 5.17. Across the road is a large transport business employing nearly 200 people. The owners of that business have concerns for the health of their own staff and the impact on their business should this proposal receive permission. An incident at the site some years ago, when it was under different ownership, led to bouts of sickness and eye irritations following the release of emissions.

The EA and HPA required new management and operational measures to be put in place.

- 5.18. Had the health risks of asbestos been known many years ago, it would not have been widely used. The LLW would not be in an isolated location or a more purpose built facility such as at Drigg but in close proximity to sensitive receptors. Many parents fear for their children.
- 5.19. The perception of harm from the development would affect social and economic aspects on the local community. There is a planning permission, which is believed to be still valid, in King's Cliffe for an additional 150 houses (on the north side of the village within the line of the former railway – OD79). Questions are already being asked whether these houses will ever get built, given the stigma from the LLW proposal. Also, residents are concerned about the value of their homes. Augean's decision to change the name of the site to the ENRMF sought to change the image and the perception of the site.
- 5.20. In March 2010, East Northamptonshire Council approved a new Tourism Strategy which complements and expands on its Economic Development Strategy. It recognises the importance and potential of tourism within the local economy. There is a pending application for Rockingham Forest Park, a forest holiday development including accommodation, leisure, retail and other tourism facilities to be located 2.5km to the east of King's Cliffe, which would create over 100 new jobs in the area as well as being the catalyst to support existing local facilities. The appeal proposal would do little to aid the promotion of what could be an economically beneficial addition to the local community. It is understood that the hazardous waste landfill does not employ anyone from the local area.
- 5.21. At one of Augean's presentations to local residents, the community was misled by claims that NCC planning officers had given strong support to the application. Officers may have come to a different conclusion had they been dealing with a proposal that concerned expanding the area of the site and the time scale for operations to 2026.
- 5.22. **Professor Richard Johnson** is a retired professor of Contemporary History and Culture (AP15.5) and a member of the Campaign for Nuclear Disarmament (AP15.5, AP15.5A) [Augean's response is in AUG2.6 pg1-2]. The criteria of risk used by the EA and Augean fall behind recent advances in knowledge, especially in their failure to deal with internal emitters (radioactive particles in the human body). Developments in epidemiology and cellular biology place a very large question mark against the safety of 'low level radiation' or LLW.
- 5.23. When the disposal of nuclear waste has been discussed, the principle of local consent is generally raised. Similarly, new nuclear power stations are now all to be built on the sites of old reactors, where the population has historically 'lived' with nuclear installations and their economic benefits. Consent is often linked with the principle of proximity, albeit that this cannot be the only principle. On all these criteria, this proposal fails: the proposal is flatly opposed by local opinion and the area is not sparsely populated.

- 5.24. There needs to be a way of managing nuclear waste. It is not in any sense disposable and the legacy of previous reactors remains. It is doubtful that Augean has the expertise or willingness to take proper account of the materials that it would handle; note the very long half-lives of many radionuclides, and why has best practice not been adopted for the engineering design and why is this proposal for nuclear waste disposal on the cheap? It is likely that Augean is simply not knowledgeable enough about recent developments in radiation science, particularly with regard to human cells and DNA when radioactive particles are ingested or inhaled. The KiKK study of the raised incidence of childhood leukaemia around German nuclear power stations is hard science in epidemiological terms.
- 5.25. It would be unwise to sanction a new practice, the landfilling of LLW, until key issues of science and health have been resolved. In the interim, it would be safer to store LLW nearer to its place of production. Any future long term storage should be at least as well engineered as the LLWR at Drigg. Even more disturbing is that VLLW has been dumped in Augean's nearby Thornhaugh landfill, without any official supervision. The precise composition of materials and possible conduits to the environment at the ENRMF would not be considered in omnibus measurements of radioactivity. The role of the EA is disturbing. There is a marked lack of transparency in its dealings with the public. The Nuclear Installations Inspectorate should have been called in to deal with this proposal, in addition to a Planning Inspector.
- 5.26. The draft Permit (EA9, AP15.5A) does not remove all of the above concerns. In particular, the storage of extremely long-lived radionuclides because the site engineering is not designed for very long periods of safe containment. The Permit confirms the likely presence, for example, of isotopes of uranium and plutonium, extremely poisonous substances with a very long half-life. Also, the very detailed requirements for the inspection, testing and monitoring of waste would all be labour intensive processes at a time of serious economic pressures on costs, and the probability of normal human error. Radionuclides on the permitted list (Table 1 pg64) include isotopes of uranium and plutonium with very long half-lives. CORWM (2006) advised, in its Recommendation 7 that if a decision is taken to manage *any uranium*, spent nuclear fuel and *plutonium as wastes*, they should be immobilized for secure storage followed by geological disposal.
- 5.27. Although CORWM was set up to examine Intermediate and High Level waste storage, the word 'any' is unambiguous. No storage of waste containing these radionuclides can be regarded as safe, even when it is deep and 'geological'. It may be that these conditions ought also to apply to other radionuclides, with a long half-life and the power to penetrate the planned cover, and/or threaten particularly harmful biological effects if ingested or inhaled as minute particles escaping from the site. The fear of harm to the local communities has a rational basis and should not be lightly dismissed. The failure to recognise the time-spans involved in storing (and diffusing) long-lived radionuclides are not fully dealt with in the Permit.
- 5.28. The EA would seek to control the amounts of very long lived and very radioactive substances coming on the site in a way that would be reliable. The procedures include the 'visual' inspection of waste on arrival and

deposition in containers, quarantining material where necessary, sampling and the like. Evidence from the Nuclear Installations Inspectorate is that controls and procedures at nuclear sites are not always closely followed, even at these sites where the health risks are potentially very serious.

- 5.29. There is also a strong pressure towards the cutting of costs in the nuclear industries including the costs of waste storage and disposal and the effect on the quantity and quality of the labour force at the receiving sites. The EA's rules and criteria also allow for considerable latitude and discretion in the choice of detailed procedures: terms like 'reasonable' clearly relate to cost as well as safety and are open to interpretation. Also the EA's recommended procedures may be inadequate. Very dangerous radionuclides occurring in small quantities may be unevenly distributed through waste from decommissioning, with consequent impacts on sampling. Recording and testing seem to be required only on the basis of 'consignments', not packages. Nor is there clarification in the Permit about when double plastic containers or steel drums would be required (Inspector's note: Packages illustrated in AUG2.3 Appx C). Much is left to the company, including whether incidents or accidents are actually reported.
- 5.30. It would be important to ensure that the company hired and kept appropriate forms and quantities of skilled labour for these tasks. Possibly the most striking sentence in the Draft Permit is: 'The radiological limits requested by Augean have been reduced to approximately an eighteenth of those requested'. How can this not imply a fundamental criticism of the company's nuclear expertise? It is to be hoped that the nuclearisation of the ENRMF will not be decided only on the basis of the existing state of the law and of regulatory procedures. The opportunity, to improve the regulatory regimes in the light of the novelty of this case and principles of fairness, justice and winning of popular consent, should be seized. If this does not occur, one might safely predict serious continuing political and ethical conflict over the storage and the environmental diffusion of LLW.
- 5.31. **Mrs Jane Rose** (AP15.7) argues that Augean's method of disposing of LLW in plastic sacks covered in clay and soil would disregard the possibility of animals and plants spreading radioactive contamination. A study by Charles T Garten entitled 'Dispersal of Radioactivity by Wildlife from contaminated sites in a forested landscape' is one of many which conclude that deep-rooted plants, birds and burrowing animals are of the greatest concern. The land around King's Cliffe is riddled with burrowing animals such as mice, moles, voles, rats, badgers and rabbits, which will destabilise the earth and spread it wherever they travel. They also tend to be at a relatively early stage of the food chain, leading to the spread of contamination through ingestion by predators. Wet sticky mud is used by house martins and swallows to build their nests on the sides of houses nearby.
- 5.32. Deep-rooted plants draw contaminants up into their foliage, flowers and seeds which can then be dispersed beyond the boundaries of the site by the wind or ingestion by animals. Adequate measures to stop the spread of contamination by wildlife have been ignored. It is essential when considering new disposal sites to use the best available technique to prevent the possibility of spread of contamination from wildlife from the outset.

- 5.33. When animal intrusion was monitored on existing burial sites, for example at the US site at Hanford, an 'integrated biological control system' had to be introduced, to stop the spread of further contamination by plant and animal carriers.
- 5.34. It is disturbing that there is no objection from Natural England or the EA. We ought to be able to trust these bodies with the protection of the natural environment. The NDA trusts the EA with regulating the disposal of LLW, which has very different properties from the other waste dealt with by the Agency's other statutory duties. Much rests on the EA's competence but, in the recent review of Quangos, it and Natural England were criticised by Government and Defra said that both face "substantial reforms" and must "find innovative new ways to embrace Localism, Big Society and be more customer focused" (AP15.7 pg2). Lord Crickhowell spoke of the "mess that apparently exists" in the EA. Such revelations justify our own lack of trust that the EA would properly regulate the management of the site. All LLW activities ought to be controlled by national policies and specialist regulators. If the EA does not have the confidence of Government, it cannot have ours.
- 5.35. The Scottish Environment Protection Agency has issued an enforcement notice on Dounreay to stop rabbits and other wildlife gaining access to the site's LLW pits (AP15.7A – written submission from Jane and Paul Rose) [Augean's response is AUG2.6 pg2-7]. A UKAEA spokesman said ".....we've possibly overlooked the rabbits". There are plant roots that extend more than 1.3m deep, and mud-transporting insects, birds and burrowing animals are all very common near the site. The roots of plants would take up the contamination and seeds/foilage would be blown beyond the site boundary or eaten and spread by insects. Some birds transport wet mud for nest building. Whether or not these plants and animals are on the site now, they will be when the land is restored to agriculture (see also OD81).
- 5.36. The Chernobyl incident had a significant effect on Scottish agriculture (AP15.7A).
- 5.37. **Dr Geoff Mason** (AP15.10, see also T33) is a Consultant Hydrogeologist. The former Slupe Clay Pit used clays from the Rutland Formation, once known as the Upper Estuarine Series, which lies above the Lincolnshire Limestone, a 'major/principal aquifer'. Investigation boreholes at the site prior to the landfill describe the Upper Estuarine Series as clays which are occasionally slightly silty with some mudstone. This Series includes some lithification as well as sand and silt. Its hydraulic conductivity will be variable. The water table occurs within the limestone. Several springs issue from the base of the limestone in KC and there are lines of swallow holes in the woods to the north of the landfill near to its boundary. Evidence shows that the limestone is a very transmissive aquifer (AP15.10 p3-6 and Appx A-E)
- 5.38. The groundwater flow is towards the south; the springs at KC may receive flow from beneath the landfill.
- 5.39. At the site, the Upper Estuarine clays have been excavated to the top of the aquifer. An engineered clay and HDPE liner forms the base of the landfill.

The clay is claimed to be very special but it is derived from excavated material at the site. If the HDPE liner were breached, leachate would leak into the major aquifer beneath and the pollution be transported to the KC springs and water courses. The EA recognises that liners and drainage systems will degrade (p10) and, in its 2002 paper entitled RGN3 (AP15.10 AppxL), its position on landfills is to object where they are on a major aquifer (p12), while stating that "there may be cases where substantial natural low permeability geological barrierswould be sufficient to prevent long term pollution." But that is not the case here. The landfill is on a principal aquifer (Appx K pg36). The emphasis for major and minor aquifers is on natural geological barriers because artificial sealing layers will degrade. Reliance on the engineered clay layer at the ENRMF is a very high risk. The EA would be obliged to take account of its groundwater protection policies. A precautionary stance is justified for the Lincolnshire Limestone.

- 5.40. There is little if any natural geological barrier between the landfill and the aquifer. By July 2009, the EA was aware that the clay liner would be on top of the limestone (AppxM) and, although it knew this in February 2010 when it issued the draft Permit, it might not have wanted to be seen to back down. This proposal fails the EA's decision-making criteria. The proposed development would be a long-term hazard.
- 5.41. **Ms Rachel McCrone** (AP15.14) lives in Laxton, a settlement 4 miles from KC and sharing the same geological strata. Her property has its own borehole. She is a nurse with some 24 years' training. She has recently undergone treatment for cancer.
- 5.42. The experts on radiation give the best information available on radiation but this might be obsolete one day, by which time it will be too late to change the location of the waste. Might LLW be brought from other countries and would they follow UK guidelines?
- 5.43. Changes for the better happen as discoveries are made in health treatment but changes for the worse also occur. A benchmark is needed from which to assess the effects on public health; but if such a process were adopted, it would be because there was a health risk and if it were not adopted there would be no way of proving the effects on health of LLW. Has this been done elsewhere? What about those who live beside the lorry routes? Benchmarking would be expensive, a burden to those involved and it would need to continue for generations. What effect would radioactive waste have when in contact with radon gas (AP15.14 pg1-3)?
- 5.44. We all take preventative health measures; such measures here should deny a licence to Augean. The waste should be disposed of at source. Corby has already suffered from the inappropriate dumping of waste. What independent auditor would oversee and control the operations? This legacy should not be passed to our children. Ms McCrone, as a cancer patient, would not wish the disease on anyone and would not wish anyone to live under the threat of developing it.
- 5.45. **Mrs Clare Langan** (AP15.16) is a KC resident, a wife, a mother of 2 children and a member of WW, with first hand knowledge of the consultation process.

- 'Consultation' includes "having regard for a person's feelings, interests etc". Augean has told us what it is going to do, more than once, but people have not been consulted. There has been no prospect that the process would lead to any change to the proposals. It has been a process of informing people.
- 5.46. The first experience of this consultation was a newsletter (Appx1) to inform people that Augean intended to seek planning permission. Clearly, the decision had already been taken. The consultation was pointless.
- 5.47. The information that the waste would be radioactive was not headlined in the newsletter. At the public meeting, residents were strongly encouraged to sign in, not realising that this would be used as evidence that they had officially been consulted. Information requested about the price per tonne for the waste was not provided.
- 5.48. Augean places weight on the lack of objection from the EA but local residents have experienced nothing positive from the EA to put their minds at rest. Its answers at the village meeting were unconvincing, along the lines of "It's safe because we say it's safe" (AP15.16 pg4/5 and Parish Council minutes). There was no meaningful attempt to address people's concerns or to place the plans in a context that non-scientists could understand.
- 5.49. The Summer 2009 Community Newsletter gave no indication that Augean proposed to extend the life and size of the landfill. In piecemeal fashion, that was revealed in the September Newsletter (AP15.16 pg5/6 and Newsletters numbered 2 and 3). Clearly, the appeal proposal is a 'foot in the door' approach. The dumping of exempt LLW at Augean's Thornhaugh site confirms that the company has not been transparent in its dealings with the public and that the 'consultation' was only 'going through the motions'.
- 5.50. **Dr Brian Cromie** (AP15.17) confirms that there is widespread concern about the proposal. The previous owner's use of aromas to mask the smells coming from the landfill were smelt all over KC; and toxicity released by this proposal would also affect the village. There are residents within 50 yards (say 46m) of the site and our largest local industry, the transport business, not much further away. A site surrounded by houses and villages is unsuitable for any process with a risk of danger to the public via the air, water, directly from the dump or from spillages on roads or fields. The Middle School and its playing fields are on the north side of the village.
- 5.51. Any measure of risk made in ideal conditions is probably irrelevant. The LLW must present no risk of public hazard even with human or technical error. Expert opinion on safe procedures can be wrong. Errors in this case could last for generations. But even if the landfilling of the LLW were safe, it would not make sense to transport it over half of the country. Every extra mile would add to the risk of accidents. If permission were granted to bring radioactive waste to ENRMF, it would be relatively easy to get consent for the disposal of even more dangerous wastes.
- 5.52. **Ms Jenny Groves** (AP15.18) is a KC resident and local teacher. She has first hand experience of the health impacts of the closure of the Corby steel works, where dust inhaled by a pregnant woman from lorries passing through

- Corby led to the disability of her son. The hazardous waste management in that case had insufficient regard to the health effects on the local population. The unknown health effect of the disposal of radioactive waste makes the ENRMF unsuitable for this disposal, in close proximity to residential areas. All members but one of the Committee for the 2004 CERRIE report believed that the low level intake of radionuclides leads to some increased risk of adverse health effects as a result of the internal irradiation of organs and tissues (T21 4.8, p67).
- 5.53. There are 2 schools in KC, the Middle School being about a mile from the site. It is unforgivable to put our children under threat; a real threat, not only the perception of one. Continuing research shows there to be a significant risk and there is no consensus among the scientists.
- 5.54. This is a beautiful and productive area. The Forestry Commission site provides educational facilities and there is an SSSI next to the appeal site. The lorries to the site pass along narrow winding country roads and leave visible residues on the bushes, trees and verges that are then washed into the water system, with dangers from the ingestion of radioactive material. Photographs show how close the site is to people and that local people use the rivers for recreation (AP15.18).
- 5.55. The transport of the waste, with the possibility of an accident, would increase the health risk. Variables exist outside the laboratory, which makes the proving of causal links nigh on impossible. We cannot ignore the clusters of leukaemia cases around nuclear sites (AP15.18 pg2/3). The waste should not be buried or transported until we know that there is no risk. The local community feels threatened. Some radioactive wastes would continue emitting radiation for generations. Permission should not be granted to a private company to allow it to put radioactive waste into a landfill close to populated areas, far from its source and with no proof of its safety.
- 5.56. **Mr Matthew Kirk** (AP15.21) is a gardener and KC resident. He and his wife have 2 children at the Middle School and they run a basket-making business, using willows grown about a mile from the site. When working there, he can smell the landfill on 'bad' days; the radiation would not smell. The willow is grown organically. A neighbouring radioactive dump would taint the product. The appeal site has a chequered history (AP15.21 pg1).
- 5.57. The presentation in the village hall in 2009 promised that the site would be returned to meadows in 2013, that there would be no extra traffic and no extension of the site. This is untrue. How can Augean be trusted? Would higher levels of radioactive waste be next? Objections have been raised at every level, from parish to County. Hours of researching, campaigning, fundraising and petitioning spent during the local democratic process would be wasted if this appeal were allowed. The outcome of this appeal could change our history forever. There should be a Government strategy to prioritise the proper containment of radioactive pollution.
- 5.58. **Mrs Carol Randall** (AP15.22) has lived in KC for 22 years. She is married with 2 daughters. KC is a unique community; it is decades ahead of the Prime Minister on issues such as The Big Society where Community Matters.

Big Society has been at work in a compact way in KC for decades. The village community provides support from cradle to grave in a wide variety of ways: from the expanding Doctor's Surgery, to the wide range of social and community facilities, the toddler groups, the schools, the local shops and businesses, the well-attended Church and links with multi-faith groups, amateur dramatics group and so on. The community cares for its own. The poor public transport is overcome by enthusiastic car sharing and the Church minibus is available to any villager qualified to drive. KC is a working model for the spread of The Big Society vision.

- 5.59. One of the greatest threats to the KC social success story is the appeal proposal. The Localism Bill aims to give local communities control over planning decisions. This village has given an overwhelming professional, personal and social case in this regard. Some 309 people from KC and surrounding villages have sent letters of objection, a substantial proportion of the population, as well as the 3000 name petition. Residents have opposed these plans through all the available democratic channels. What message would it now send if a commercial company with large assets and expensive legal representation could override the democratic process and the wishes of the community and its elected representatives? The future of KC and of similar communities depends on this appeal being dismissed.
- 5.60. **Miss Melanie McCall** (AP15.23) is a KC resident and mother of 2 children at KC school. Our children and loved ones need a healthy and safe environment. It is their human right. Dr Rachel Western, a nuclear researcher for Friends of the Earth and a former Member of Nuclear Waste Advisory Associates, states that "a single radiation track...has a finite probability, albeit very low of generating the specific damage to DNA that results in a tumour initiating mutation": not every radioactive atom that hits the body will cause cancer but there is potential. The EA considers risk to be as low as is reasonably possible but for whom? And the EA says that the waste would not be as harmful as what is on site now. There would be no satisfactory way of informing the public in and around ENRMF of a serious spillage. There should be an independently run health monitoring programme. Who would support the residents if things went wrong? Once the waste was on site, it would be there forever, with no room for mistakes.
- 5.61. **Mr Peter Chivall** (AP15.24) is a Peterborough resident, a retired teacher of science and technology, a youth employment adviser and a member of ProFoRWM. He became aware of the appeal proposal through other members of the group and is one of the 156,000 Peterborough residents who did not object at the time. The proposal is on an aquifer that supplies, with other sources, some 70% of the City's population.
- 5.62. Some of the nuclear wastes would remain active for very long periods, beyond the next ice age, when glaciation would disperse the landfill material.
- 5.63. Any limits based on activity (Becquerels) rather than dose (Sieverts) would be meaningless as different isotopes with the same activity will emit particles with different energies, resulting in different dose levels to those exposed to them.

- 5.64. The very limited containment proposed would be unsatisfactory. Only SITA operates a landfill accepting LLW, at Clifton Marsh near Preston, and it only takes waste from 2 sites (Springfields, Preston and Capenhurst in the Wirral). Clifton Marsh uses super-compression of closed drums in half-height steel containers (AP15.24 photographs) – which could be removed in future - in prepared trenches in a domestic landfill site. The site is at sea level so that leachate could not enter the drinking water supply. The appeal proposal seems rudimentary and primitive by comparison, and the Augean company could be wound up at any time.
- 5.65. If the waste were high volume VLLW, it would breach the proximity principle.
- 5.66. **Ms Fiona Radic** (AP15.25) objects to this proposal. Money is the only element in the application which makes any sense at all. The site's annual profit has been estimated at £100,000,000. The disposal method would be cheap, possibly cheaper for the nuclear power station decommissioning project than any so far employed in the UK. But this cost advantage would be at the expense of the local community and of those through which the wastes would travel.
- 5.67. This is the first time that LLW would be dumped in the open air and left exposed to the birds, beasts, elements and even children if they were to gain entry to the land. It is no good comparing man made radiation to what occurs naturally. Man made radioactivity is different and it is additional to that which occurs in nature. Those who make it and say that it is safe never choose to live next to it.
- 5.68. Without any consultation with neighbouring communities, VLLW has recently been landfilled by Augean at its Thornhaugh site, a site that needs deep and exhaustive remediation due to disposal practices 40 years ago.
- 5.69. Augean blames market conditions for a shortage of hazardous wastes for the ENRMF and hopes to fill the gap in business with LLW but does not explain why putting hazardous waste anywhere near to nuclear waste is a good idea. It is possible that the market for hazardous waste disposal is moving away from landfill, in accordance with Government policy. Market conditions giving rise to spare capacity should not drive nuclear waste disposal strategy.
- 5.70. The application should be considered solely on its own merits, in which case dumping would stop in 2013, which makes no sense, least of all to a nuclear industry rashly intent on demolishing its entire contaminated building stock.
- 5.71. LLW is a lethally misleading legal definition, not a scientific one. It does not mean that all of the waste is low level and not dangerous. "Low level" can include high concentrations of radioactivity in small volumes of material and low concentrations in a high volume of material. It can include Tritium, Iodine 131, Strontium 90, Nickel 59 and Iodine 129, the latter having a half-life of 16,000,000 years. Scientists examining the devastation at Chernobyl found that isotopes of iodine and strontium accumulated in the food chain and proved especially dangerous to the environment.

- 5.72. When considering the toxicity or otherwise of what would be dumped, residents should be told exactly what and how much would be involved. We should be planning with geological timescales in mind. Scientists do not know enough about the risks posed by the nuclear industry. Very few are genuinely independent. Accidents provide the best available learning opportunities, as deliberate experimentation would be unethical. KC does not want to be part of a massive badly-run experiment. The local community has not volunteered to handle nuclear wastes. The Government has asked communities to volunteer for managing higher level nuclear wastes. This approach should apply to any nuclear waste handling.
- 5.73. Cumbria, with a sizeable nuclear workforce, has embarked upon this route. Northamptonshire has not. Cumbria has learned from radioactive contamination incidents, it is well placed to cope with nuclear issues. It has asked the British Geological Survey to look at its geology with a view to determining areas suitable for nuclear waste storage. Unlike at ENRMF, the geologists' work has been part of a community engagement programme to inform and debate with the public in an attempt to locate genuinely suitable waste locations. The ENRMF application has proceeded very differently. The geologists in Cumbria refused to consider any site which risked contamination of aquifers.
- 5.74. Peterborough is vulnerable to insecure drinking water supplies. Parts of the city draw on groundwater. Also there is a history of toxic leachate entering the River Nene from another site currently owned by Auegan [Inspector's note: this is disputed by Auegan. Miss Radic was asked to provide details of the site but did not do so]. The ENRMF proposal is extraordinary in that it includes transport of leachate to the west country. Radioactive waste dumped in the ENRMF could escape and contaminate aquifers beneath it. Contamination already occurs but nuclear contamination of its water supply could devastate Peterborough and towns and villages down stream and damage farmland and food supplies (AP15.25 pg3/4).
- 5.75. The ENRMF waste dump consists of a clay bed sitting on limestone rock through which water flows. Occasionally the roof of an underground cave collapses, taking the material above down with it. These "sink holes" can be seen in the fields in the KC area. The clay envelope method of containment would not be effective in the long term.
- 5.76. This application may rise from an urge to solve a financial problem for Auegan. It does so by putting an unquantified risk on the long term viability and ecology of the eastern region.
- 5.77. **Mr Robert Meadows** (AP15.26) has lived in KC for nearly 30 years and seeks to uphold NCC's decision to refuse permission. The landfill causes filthy slippery roads and unpleasant smells. Residents have looked forward to its closure in 2013 but now Auegan wants to extend the site and the date for closure until 2016. This has been planned for some time.
- 5.78. Auegan plans to provide the national repository – a term suggesting a single secure structure rather than a near-surface trough with a waterproof liner - for LLW for south and central England. This does not accord with the policy of sharing the burden fairly among scattered rural landfills. And transport

might be cheaper if the waste were disposed of nearer to its source. The LLW rubble from east coast power stations could be used for sea defences. If LLW is so harmless, why does it need to be transported so far for disposal?

- 5.79. The consultation with the local community was more of a 'trade show' approach to sell the proposal.
- 5.80. Secure containment in clay liners would be doubtful. Clay is not waterproof until it is fired and glazed. Augean's claim that the liner clay is 18 times better than other clays is not reassuring. There is massive local distrust and doubt about this proposal.
- 5.81. **Mr Robin Gifford** (AP15.27) is a resident of Apethorpe, about a mile from KC. No formal consultation was held with Apethorpe by Augean. The first awareness of the proposal came from WW; a letter of objection was sent to NCC on 17 September 2009. Six months later, after the refusal of planning permission, Augean claimed that Apethorpe had been included in its consultation exercise, that it had made an offer to brief members in person and it offered to give a briefing. This took place on 8 June 2010, with a power point presentation by Dr Gene Wilson, who experienced considerable discomfort in trying to answer several of the questions. Subjects of concern included the storage of radioactive waste in plastic bags dumped on the ground, the mud on the road past the site, the inadequate fencing to the site and the treatment of run-off and rainwater.
- 5.82. Dr Wilson continually used the words "no significant risk", relying also on the EA's approval of the proposal. He was vague when asked about extensions to the development, the possible disposal of waste with higher levels of radioactivity and he claimed falsely to have the support of the planning officers. The meeting generated much anger and concern.
- 5.83. The EA should have been at this inquiry to answer questions.
- 5.84. Emails from Augean (attached to AP15.27) requesting the identities of 2 of the residents asking the most persistent questions had a possible sinister intent. There is a strong perception of fear and harm. Augean has reneged on the understanding that the site would close in 2013. Residents live in the shadow of Corby and its horrific incident. As then, a contractor might allay the fears of the local people and then move on, leaving problems for future generations.
- 5.85. Radioactivity is invisible, it does not smell and it can't be touched. People would have to rely on Augean's self-monitoring but the community does not trust its safekeeping to this company. Moreover, Augean's latest financial results show that it made a loss for the 6 months to June 2010. Its liabilities exceed its assets. Will it remain in existence to guard the waste for years to come? The appeal site has been chosen to maximise profits.
- 5.86. The perception of harm has escalated to a reality of fear.
- 5.87. **Mr Richard Olive** (AP15.28) is an architect of energy saving buildings, a member of the Peterborough ProForum and he spoke on behalf of

Peterborough Friends of the Earth. He refers to the Northamptonshire Core Strategy Ambition 1 and Policy CMD2 of the Control and Management of Development DPD; to be truly sustainable, the waste should be managed at its source. Leachate would harm future generations. The EA was wrong to conclude that the ENRMF would be BAT in its draft Permit (EA9). Possibly it did not know that the site is directly above an aquifer. The landfill should have several layers of engineering containment. Demolition waste can puncture bags. Assessments of risk do not constitute evidence.

- 5.88. Ambition 3 seeks safe and strong communities. Other disposal facilities have superior technology when compared with that proposed at the ENRMF. There would be an ever-present safety issue for local residents near the appeal site. Accidents will be inevitable. Assessments of risk do not constitute evidence. The precautionary principle should be adopted (PP6 p10).
- 5.89. Ambition 4 is for healthy people to have a good quality of life, but residents would face health problems and pollution of drinking water.
- 5.90. The Strategy for Waste Management and Disposal in Northamptonshire aims to maintain the specialism in hazardous waste. Provision for radioactive waste has not been addressed in this plan. Policy CMD7 of the Control and Management DPD aims to achieve a net gain in natural assets and resources. Friends of the Earth has particular concerns about surface water and drinking water supplies. The proposal would conflict with p11 of PPS23 (PP6) about the impact on water, in this case an aquifer, and also be in conflict with the EC Water Framework Directive on the protection of groundwater from pollution.
- 5.91. PPS10 Planning for Sustainable Waste Management (PP5 p21, 27, 29, 30 and Annex E pg23) sets out guidance and criteria on pollution, health and nature conservation. The appeal proposal is not BAT because the best possible technologies would not be employed. Local information confirms that there is not a layer of clay beneath the landfill. The flow of water in the aquifer below the site is SSE to link with the River Nene. Drinking water supplies, water for irrigation and water for the nearby Bedford Purlieus SSSI would all be contaminated. Damage to living tissues can be caused by very small quantities of radioactive materials. There is no safe limit for radiation emissions.
- 5.92. **Councillor Mary Butcher, on behalf of 29 Members of Corby Borough Council (CBC)** (AP15.30), states that the application was considered at Full Council on 29 October 2009. It was noted that: there are plans for a private company (Augean) to dump low level nuclear waste from decommissioned nuclear power stations and hospitals at its landfill site in Stamford Road, King's Cliffe; the East Northamptonshire District Council and Wansford Parish Council had both been consulted by NCC and had strongly objected; that both Rutland County Council and Peterborough City Council had been consulted and raised concerns; that NCC had not consulted CBC; that NCC intended determining the application in November 2009; and that the Officer recommendation would be for approval of the application. The Members resolved that CBC should have been consulted, given that King's Cliffe is approximately 8 miles from the Borough boundary; and Officers be instructed

to inform NCC that this Borough strongly objects to any nuclear waste coming through this Borough until such time as this Council has received all appropriate information and guarantees on safety.

- 5.93. The planning application was considered by the Development Control Committee on 2 February 2010 when Members resolved that NCC be advised that CBC objects to the landfill disposal of radioactive waste at the ENRMF and is very disappointed that, as a neighbouring Local Authority with significant transport routes to service the site, it was not formally consulted over the application. However, based on the information submitted, CBC raises no planning objection to the application [Inspector's note: Cllr Butcher said that CBC was unable to object to the application because it had not been consulted and "did not have jurisdiction". The Officer's recommendation was of 'no objection' while being disappointed that the Borough had not been consulted (AUG3.3 Appx16).]
- 5.94. CBC objects to nuclear waste travelling through the Borough based on the strong local opposition to this proposal. The proximity principle requires that waste should be treated at, or as close as possible to, the site at which it was generated. The LLW to be deposited at the ENRMF would be from nuclear sites throughout the UK. This would lead to the unsustainable spatial distribution of waste and generate excessive transport movements.
- 5.95. Corby is about 8 miles from the site and it has a population of over 55,000 people. The town is set to double by 2031 and this will involve considerable increases in housing, much of which will be closer to the site than the existing development.
- 5.96. **Mr A P Howard** (AP15.31) is the Managing Director of P C Howard Ltd, Chairman of KC Parish Council, a Governor of Oundle and KC Middle School and a resident of the Parish of KC. P C Howard Ltd is engaged in the warehousing and distribution of palletised goods and is based opposite Augean's site. The business operates over 100 HGVs and employs nearly 200 people. It is the largest employer in the northern part of the County. The offices are some 50m from the site entrance. The firm has a sound reputation both locally and nationally, a sound financial base and a diverse customer base and it plays an active part in the community. The proposed development is causing uncertainty and concern among staff. It is necessary to provide a safe working environment but this would be put at risk.
- 5.97. The Parish Council held a public meeting to discuss the appeal proposals. From the many people present and the questions asked, it was clear that a lot of residents are very concerned, mainly about health and safety. The Parish Council would not like to see the proposals by Augean having any impact on the lives of the residents either now or in the future.
- 5.98. Mr Howard's granddaughter has a rare genetic condition called Li- Fraumeni syndrome which gives a pre-disposition to certain cancers. Very sadly, his step granddaughter had the same condition and died shortly after her 10th birthday and his granddaughter is undergoing treatment for cancer. Also, in 2008, his daughter-in-law, who has the same syndrome, was diagnosed with cancer. It is understood that the syndrome means that a cancer can be triggered by a number of environmental factors, including herbicides, certain plastics and radioactivity. Mr Howard argues that his family should not be

put at any greater risk of cancer. There should be no increased risk of exposure to radiation from the proposed activity at the site.

- 5.99. Until the 1990s, a small quarry operated on this site. It got into financial difficulty and the site was taken over for the disposal of toxic waste in 2002 when it was owned by Atlantic Waste Services. During the initial years of operation there were a number of serious incidents of contamination from the site (AP15.31 p1.26-1.37). Atlantic Waste was acquired by Augean and the landfill now operates with minimal impact on the Howard business and the local community. This could be due to the management changes or the greater experience in handling the existing waste streams but, in any event, it does not indicate how well the LLW would be dealt with. Moreover, at another Augean site, there has recently been an explosion and a fire ball hundreds of feet into the air (AP15.34). Also, Augean was fined £90,000 last year for leaving chemicals outdoors and uncovered; they reacted with rain and caused a fire. At ENRMF, another learning curve would be unacceptable. The 2 waste streams could interact.
- 5.100. KC is in a high radon area; there should not be any increase to the existing high radiation levels.
- 5.101. Residents do not believe that the EA has any experience of monitoring levels of radioactivity. It would rely on Augean to advise of the level of radioactivity in the waste stream when it arrived at ENRMF; it is surprising that the EA has not prepared its own modelling. It has also stated that monitoring the level of radioactivity in ENRMF would be too expensive. If a load of LLW arrived with a higher than permitted radioactivity level, the temptation would be to bury it [Inspector's note: See AUG2.5 re 'Waste Characterisation' prior to acceptance]. It is clear that the EA procedures have been wrong in the past and have had to be improved. Self-monitoring and cost restraints should not be options.
- 5.102. **Dr Peter Lloyd Bennett, on behalf of Transition Kings Cliffe** (AP15.32), which is part of the global transition movement, opposes the appeal proposal. The movement seeks changes at a community level to meet the twin challenges of climate change and the increasingly expensive oil production. Among other things, it encourages adults and children to use their bicycles more, potentially taking them on bridleways such as the Jurassic Way, close to the landfill, where they – as well as runners, walkers and horse riders - would encounter the dangers of airborne radiation. [Inspector's note: Augean states that the nearest right of way is 845m west of the application area, the nearest bridleway is 880m to the south of the application boundary and that Jurassic Way is over 1.5 miles to the west and south west of the application boundary.]
- 5.103. The waste would have the potential to harm people, the environment and local produce. It would also lead to the fear of harm, damage to the reputation of KC and hinder efforts to create a network of local producers and businesses. People would be unwilling to buy local produce.

6. WRITTEN REPRESENTATIONS

The material points are:

- 6.1. A particularly useful analysis of the written representations has been prepared by the appellant. Initially, this was for responses to the planning

application up to 20 November 2009 based on work by NCC (NCC2, A2.1 Doc6 – tables 1 and 2, AP3) For example, responses that refer to the area having higher than normal levels of radon are given the code letter A; radiation health risks - B; Augean has no experience of the disposal of nuclear waste – C; and so on. Some responses may raise a dozen or more issues, each of which is identified by the appropriate code letter. The total number of responses that refer to each issue is given. AP14 is a source document for the third party representations in AP1, AP3, AP4 and AP5.

- 6.2. The analysis was updated to include the responses up to March 2010 (AP5) and the representations sent to the Inspectorate up to 30 June 2010 (AP1, OD31) and then updated again to include the 34 representations received up to the last day of the inquiry (OD31A, AP15), many of the latter comprising statements that were presented to the inquiry, as reported in section 5 above. [Inspector's note: the map in OD31 of the sources of the third party objections does not include the names on the petition. An analysis of the risk perception factors and whether they were deemed material by Augean is found at NCC8.4, with an 'ordered' analysis at NCC8.5.]
- 6.3. For the most part, the written representations deal with issues that were also raised by the interested persons and by WW at the inquiry. One notable exception is Dr Daniel Cox (AP15.29), who queries the Giroud Equation used to determine the rate of flow of leachate through imperfections in the liner. He argues that, as written in the ES and the SNIFFER technical manual, this appears to be implausible from a dimensional analysis (i.e. the units are wrong). He states that the response he received, from Westlakes Scientific Consulting for the EA, does not give the source of the original misunderstanding (concerning the introduction of the term 'dimensionless' given to the constant 'c'); that the original error was not typographical; and that the person who wrote it did not understand what they were writing. [Inspector's Note – see AUG2.4A and AUG2.2 pg35 p8.4 – Augean states that the approaches used in SNIFFER have been accepted by the EA as part of the modelling work; that as the head of liquid above the liner would not be greater than the thickness of the low permeability layer beneath it, the use of the equation is valid and that the lack of clarification as to 'dimensionless' in no way affects the appropriate use of the equation in the site assessments.]
- 6.4. Oundle School (AP15.4) states that it has over 1000 pupils, many of whom are boarders. The School is responsible for their wellbeing. An LLW repository 8 miles from the School would be of great concern. Issues raised include doubts about Augean's ability, the uncertainties about the effects of LLW on health, waste transport and whether higher level waste would be brought to the site in the future.
- 6.5. A letter dated 8 October 2010 from RSRL (AP15.8) takes issue with the evidence of Mr S Aumônier for NCC. This letter is also found among a suite of 5 letters from RSRL (OD67) between 17/9/09 and 4/11/10 to NCC, to Wirral University Teaching Hospital NHS Trust and to the Planning Inspectorate. [NCC's response to the RSRL letter of 22/6/10 is at NCC7.4 p11-18 and the NCC response to the RSRL letter of 4/11/10 is NCC7.5]
- 6.6. Mr Bernard Howard of Howard Farms (AP15.9), West Hay Farm, opposite the site, is concerned, among other things, about surface water draining onto his

land which could damage the soil and harm his stock. He states that a bond of £2m is required to protect his farm's interests.

- 6.7. Mr Wayne Andrew (AP15.11) is an organic egg producer from KC. He argues that people would not buy eggs that may have been contaminated by radioactive leachate or airborne particles.
- 6.8. RVM Industrial Landlords (AP15.13, AP15.12) propose a leisure development on over 600 acres (say over 245ha) of land at Rockingham Forest Park to the east of the site, between the Wansford Road and the Apethorpe-Nassington Road. They argue that their development would have a positive effect on the local economy but it would be damaged by the appeal proposal.
- 6.9. Mrs Josien Chalmers (AP15.33) of the nearby Westhay Lodge is a well-regulated diabetic. However, the stress and worry of this appeal and the impact that it would have has caused her to have very irregular blood sugars. All of the KC residents are 'on hold' as to whether to stay in or leave the village or if they would be able to afford to leave.
- 6.10. **A petition** (AP16) of some 3077 signatories was presented to NCC in March 2010 before the refusal of planning permission. It is headed: "We the undersigned oppose the application by Augean....for permission to dispose of radioactive waste from the nuclear industry in the King's Cliffe landfill site. We consider the site to be inappropriate for this type of waste and fear for the present and future safety of those living in the area if this proposal were to go ahead."
- 6.11. A number of matters in the written representations - such as prematurity; site selection should be by central Government; imposition of costs on the local community - are not fully included in the cases reported for the main parties or for the interested persons who spoke at the inquiry. These are conveniently set out in the proof of Mr Miles (AUG1.2 pg95-98).

7. Conclusions

Introduction

- 7.1. The sequence of the sections in these conclusions is set out in the Contents list at the start of this report. The Glossary is found at the end, after the Documents lists. To set the scene and to make the Conclusions relatively self-contained, I will start with background matters, a short description of the proposals and an assessment of the relevant policy and guidance. After that, I will deal with each of the main considerations in turn, which are identified by sub headings.
- 7.2. Paragraph references in square brackets at the ends of paragraphs indicate the sources of the material relied on in reaching my conclusions. Some references may be included to show that a particular argument has been considered, even though it might not merit specific mention. Inevitably, in a report of this length, it is necessary to be selective about the source paragraphs, especially where the same point is made by more than one party.
- 7.3. One resident said that the Environment Agency (EA) should have been at the inquiry to answer questions. My response was that the inquiry was not into an application for an Environmental Permit (EP). Nevertheless, I was asked to bring this matter to the attention of the SoS. [5.83]

The Proposal

- 7.4. The East Northants Resource Management Facility (ENRMF), a landfill site located in a predominantly rural landscape about 2.5km north of the village of King's Cliffe, has permission for the landfilling of 249,999 tpa of hazardous waste until 31 August 2013, by which time the site must be restored. The proposal is to landfill Low Level Radioactive Waste (LLW) at the site, in Phases 4B, 5A and 5B in the south eastern corner of the site, in addition to hazardous waste, until the expiry of the permission in 2013, with no change to the annual volume of waste permitted to be deposited (249,999 tpa), the approved physical features of the site, the highway access, the footprint of the landfill site, the restoration proposals, the phasing, the engineered containment, the leachate and gas management infrastructure of the landfill or the surface water management scheme. To allow time for capping and restoration, the site would need to cease accepting waste by the end of June 2013. [1.6-1.15, 1.18, 1.19, 1.22-1.24, 2.1]
- 7.5. The LLW to be disposed of at ENRMF typically would comprise construction and demolition waste such as rubble, soils, crushed concrete and metals from the decommissioning of nuclear power plants, buildings and infrastructure, and lightly contaminated miscellaneous wastes from maintenance and monitoring at these facilities, such as plastic and metal, and wastes from manufacturing activities, science and research facilities and hospitals. [1.20]
- 7.6. LLW comprises radioactive waste with a radioactive content not exceeding 4,000 becquerels per gram (Bq/g) of alpha activity or 12,000 Bq/g of beta or gamma activity. LLW includes waste described as Very Low Level Radioactive

Waste (VLLW) which has a radioactive content up to 4 Bq/g (40Bq/g for tritium) with other limits set for individual loads in some cases. The proposal is to include a subset of LLW comprising waste which has a level of radioactivity of up to 200 Bq/g. [1.21]

- 7.7. The application was refused in March 2010 for 4 reasons. Then, in July 2010, Northamptonshire County Council (NCC) sought to amend the third reason and to add reasons a, b and c, effectively making 7 reasons in all. No issue of substance was taken by Augean as to whether it is possible to add or amend reasons for refusal several months after a decision has been issued. [1.31-1.33].

Environmental Permit

- 7.8. Under the Integrated Pollution Prevention Control Directive 2008, landfill sites must be designed and operated in accordance with "Best Available Techniques" or BAT. The pollution control aspects of landfill development are regulated by the EA under the Environmental Permitting Regulations 2010. A landfill may not be operated unless it is the subject of a valid EP and the EA cannot issue one unless it is satisfied that the landfill will not result in pollution of the environment or harm to human health and it meets the requirements of BAT. The hazardous landfill at ENRMF is the subject of an EP. [1.44]
- 7.9. Application for an EP was made by Augean in July 2009 and, on 19 February 2010, the EA issued an Explanatory Document and Draft EP. The EA has assessed all aspects of the proposed development, including the design, construction, operations, management, monitoring and aftercare proposals and has scrutinised the radiological exposure assessments to ensure that the development would meet all the relevant regulatory and environmental principles in the legislation, in guidance documents and enshrined in BAT. Other regulatory agencies – the Primary Care Trust, the Health Protection Agency, the Health and Safety Executive, and the Food Standards Agency - have assessed the proposals and also have no objections to them. Moreover, NCC, as advised by its independent expert, Dr Denman, has no objection on actual – as opposed to perceived – risks to health or the environment. [1.47, 2.46, 2.56, 2.60, 2.145, 2.186]
- 7.10. The EA states in the draft EP that: "Augean's application reflects the principles of BAT for disposal of solid LLW up to 200Bq/g. We have considered the level of management options and engineering controls submitted by Augean and consider them to represent BAT". [1.29, 1.47]
- 7.11. Article 37 of the Euratom Treaty of 25 March 1957 requires that the Commission of the European Communities must be provided with general data relating to any plan for the disposal of radioactive waste. Augean has provided the requisite information and it is anticipated that the Commission will approve it in November 2010. The EA will not issue the Permit until the Article 37 approval is received. [1.48]

- 7.12. The draft EP, formerly called an 'Authorisation', covers numerous matters concerned with the control of pollution and protection of health and the final one would do likewise. [1.20, 1.25-1.30, 1.44-1.48]
- 7.13. The whole of the landfill area is the subject of the current and draft EPs. EPs continue in force following the cessation of waste acceptance and restoration until, in the opinion of the EA, a site no longer represents a potential risk to the environment. Moreover, the ENRMF site is the subject of Financial Provision: a bond provided by the operator for use in the event that the company no longer exists. [1.24.1.30]

National Policy and Strategy

- 7.14. The Council's first reason for refusal states firstly that there is no national level planning policy or guidance and, secondly that there are no Development Plan policies at regional or local level dealing with the management or disposal of LLW. The second part of the last sentence is correct but is the first also? [1.31, 1.34-1.37, 2.46, 2.95-2.107, 3.1-3.4]
- 7.15. NCC argues in support of its first reason that there are 2 categories of national policy: national 'planning' policy and national 'other' policy. The latter includes the 2007 National Policy on LLW and the 2010 National Strategies on LLW from nuclear and from non-nuclear sites. NCC does not dispute that 'planning' policy in PPS10 and PPS23 includes guidance that is relevant to this appeal. However, it argues that national 'other' policy is directed principally at the industries when making their waste management decisions, while also to be used by planning authorities when preparing their planning strategies for waste management. [1.38-1.41, 2.45, 3.12-3.15]
- 7.16. I find no merit in this claimed distinction between national 'planning' and national 'other' policy. The National LLW Policy confirms (p2) that it applies to planning authorities; and (pg21/22) the "Organisations with roles in the management of LLW" include planning authorities and their role in making "Decisions on planning applications for facilities for the management of radioactive waste...". The subsequent 2010 National LLW nuclear industry Strategy seeks to reflect and implement Government Policy, as does the equivalent 2010 Strategy for LLW from the non-nuclear industry, the status of which is unclear as it appears to be only a draft Strategy. When I refer below to the National Strategy, I mean the Strategy for the nuclear industry unless I indicate otherwise. [1.38-1.41, 2.44, 2.87, 3.12-3.15, 3.34-3.37]
- 7.17. These LLW Policy and Strategy documents are so material to this case that much of the inquiry was linked with issues on which they include guidance. Indeed, the policy change in the 2007 LLW Policy that led to this proposal is that, following the application of the waste hierarchy, Government sees no reason to preclude controlled burial of LLW and VLLW from nuclear sites from the list of options to be considered. The 2010 LLW Strategy confirms that alternative disposal options include the use of existing landfill sites. [1.38, 1.39, 3.74, 3.18]

Perception of Harm

- 7.18. To consider this question, it is necessary first to put it into the context set by the assessment of the actual harm from the development; then to deal with law and policy as to whether the perception of harm would be a material consideration in this case and, if so, the weight to be attached to it in making the decision.

Actual Harm

- 7.19. Two important points need to be set out. Firstly, as indicated above, the pollution control aspects of landfill development are regulated by the EA under the Environmental Permitting Regulations 2010. Secondly, as PPS10 and PPS23 state, "... planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced". In this context (PPS23 p2), "any consideration of the quality of land, air or water and potential impacts arising from development, possibly leading to impacts on health, is capable of being a material consideration (and) the planning system plays a key role in determining the location of development which may give rise to pollution (and) the controls under planning and pollution regimes should complement rather than duplicate each other". [2.159, 4.6, 4.7]
- 7.20. Indeed, the fact that the EA saw fit to reduce Augean's proposals for a radiological limit for disposal by 18 times, which is used by some as a criticism of Augean, can also be regarded as an indication that the EA is and would be diligent in its pollution control work. [4.55, 4.69, 5.30]
- 7.21. As stated above, NCC, advised by its independent expert Dr Denman, the EA and all of the statutory bodies consulted about the application have no objections on safety grounds. This view is not shared by Wastewatchers, a group which states quite clearly, and in conflict with the guidance from PPS10 and PPS23 quoted above, that it has no faith in the ability of the EA to regulate any pollution issues at the site. In seeking to place their fears about perception of harm into context, WW raises issues that would be controlled by the Permit. These concerns, which are also held by a number of interested persons, include monitoring, leachate, surface and groundwater, working practices, computer modelling of risk, scientific arguments about risk, Augean's competence and so on. Indeed, many of the concerns were raised by WW in its objection to the Permit application and are answered, albeit not to WW's satisfaction, in the draft EP. [2.159, 2.161, 4.1, 4.3-4, 4.26-4.28, 4.34-4.41, 4.50-4.87, 5.3, 5.6, 5.16, 5.25-5.35, 5.37-5.40, 5.42-5.44, 5.48, 5.50-5.56, 5.60-5.64, 5.67, 5.71-5.75, 5.80, 5.85, 5.87-5.91, 5.96-5.101, 5.103, 6.1-6.4, 6.6, 6.7, 6.10]
- 7.22. The actual harm from the proposed development, as assessed by Dr Busby for WW, is wholly at odds with the evidence from Prof Wakeford for Augean and the opinions of the statutory bodies to which I refer in the above paragraph. Dr Busby argues that this proposal would be 'madness'. He expresses concern about the contamination of residents in towns such as Peterborough and Grantham which are 20-27km from the site and the millions of people living as far away as Birmingham, Manchester and Liverpool. But a radius that reaches Liverpool from the appeal site, ignoring matters such as the effect of prevailing winds on radioactive materials, would

include London, Bristol and Southampton and most of the population of England. Moreover, Dr Busby's answer to dealing with the LLW is to package it where it is and leave it alone forever. But 'packaging the waste' where it is appears to mean that it should simply be packaged, thus (and in conflict with Government policy) dispensing with any beneficial effects from landfilling the waste. And if there were any health impacts from the appeal proposal on populations as far away from the appeal site as Liverpool, there would also be health effects on populations far distant from the LLW that he suggests be packaged and stored at source. I find Dr Busby's arguments on this matter to be wholly unrealistic. I note that Prof Wakeford for Augean is also 'at a complete loss to understand how (Dr) Busby can argue ill health effects within 50 miles'. [2.23, 2.165-2.171, 4.50-4.78]

- 7.23. Dr Busby has issues with the internationally used ICRP risk model, which he claims to be 'out' by a factor of 1,000-10,000, seriously underestimating the risks associated with internal emitters but that argument has been addressed and rejected by CERRIE, COMARE and the HPA (see Glossary). He also compares surface radiation levels at the Chernobyl exclusion zone with the radiation at depth within the proposed landfill. And some have read more into the results of the German KiKK study, on leukaemia and nuclear sites, than was found by its authors. [2.12, 2.23, 2.158, 2.166-2.167, 2.171, 4.51-4.52, 4.55, 4.58-4.60, 4.75, 4.76, 5.22]
- 7.24. As WW states, there is disagreement within the scientific community about the effects of radioactivity but it is also clear to me that Dr Busby is at one extreme end of the debate, well removed from the mainstream scientific thinking. [2.158, 2.165-2.171, 4.20-4.22, 4.68, 4.73, 4.75-4.78]
- 7.25. No human activity is free from risk and, much as we try to achieve it, a risk free society does not exist. I acknowledge Prof Kemp's expertise in 'Risk perception and communication'. I understand his criticism of the use of comparisons, in which people might say that 'this risk is no worse than that one' and agree that such an approach is far too simplistic, as many factors affect the tolerability or acceptability of risk. Each type of risk should not be considered out of its context. Factors such as the benefits of an activity mean that some risks are tolerated more than others. For example, the high risk from skiing is tolerated by those partaking in the sport, which is a voluntary activity that gives the benefits of exercise, excitement and pleasure. The dangers of driving are generally accepted because of its benefits. On the other hand, a risk that is not voluntary but is imposed on people by others - when the 'others' would gain the direct benefit - for which those exposed to the risk perceive little if any direct benefit, is not tolerated as well and they would expect a much reduced level of risk. Clearly it is necessary to compare assessed radiation levels and set standards. In addition to these, while keeping in mind the factors that affect the tolerability or acceptability of any risk, some comparisons with other sources of radiation are necessary to illustrate the scale, nature and context of the assessed risks from the landfill. Without these comparisons, the assessed radiation levels would have little meaning. [1.41, 2.80, 2.94, 3.65, 3.66]
- 7.26. The background is, as Augean states, that radioactivity and ionising radiation are natural physical processes, and exposure to ionising radiation is

everywhere. People are exposed to radiation from natural and man-made sources, such exposure occurring in the environment, medically and occupationally. For most people, radiation from natural sources accounts for the majority of their exposure to radiation, and the inhalation of radon gas is usually the largest component of this natural background radiation exposure. [1.41, 2.10]

- 7.27. Every year in the UK, people receive on average from natural background radiation an effective dose of 2.2 mSv (millisieverts), of which the inhalation of radon accounts for 1.3 mSv, although there are relatively large variations in the effective dose received from natural background radiation (See Sievert in Glossary). For example, King's Cliffe is in an area of higher than average radon concentration, where the average annual dose from background radiation is some 3.6 mSv. An annual effective dose of 1 mSv is about the lowest dose that can be received anywhere in the world from naturally occurring sources of radiation. To the effective dose from natural sources must be added man-made sources, the largest component of which is exposure to radiation for medical reasons. [1.41, 2.14, 2.16]
- 7.28. The ICRP has derived appropriate risk coefficients (the risk per unit effective dose), taking into account the seriousness of the health effect and, from these, it recommends effective dose limits of 20 mSv per year for workers, 1 mSv per year for members of the general public and, in addition, the Commission recommends effective dose constraints to be applied under particular circumstances of exposure. For members of the public these constraints are ≤ 0.3 mSv. [1.41, 2.15, 2.16]
- 7.29. The HPA has advised that the latest ICRP Recommendations do not require changes to the system of radiological protection that operates in the UK. The Agency has recommended an annual effective dose constraint of 0.15 mSv for a member of the public as a result of the land-based disposal of solid radioactive wastes. [2.17]
- 7.30. The EA is satisfied with the use of the SNIFFER model for the land-based disposal of radioactive waste, which has been adapted for use at the ENRMF with hazardous wastes, and with the ERICA model for wildlife and ecology. There is no evidence of any better models than the ones used. [2.18, 2.19, 4.81-4.87, 6.3]
- 7.31. The radiation risk assessment to consider the impact of radiation exposure from landfill disposal of low-level radioactive waste at the ENRMF has substantial conservative assumptions built in. With these conservative assumptions, the assessment for a worker at the proposed facility is that he would receive an annual effective dose of less than 1 mSv as a result of such disposal, well within the occupational dose limit of 20 mSv per year. The most highly exposed member of the public may receive, under normal operating conditions:
- an annual effective dose of 0.02 mSv, well within the annual effective dose constraint of 0.15 mSv recommended by the HPA; where
 - 0.02 mSv is about 1% of the natural background dose (of 2.2 mSv) that we all receive in the UK, on average, every year of our lives;

- an effective dose of 0.02 mSv will be received by someone living in the UK, on average, every 3.5 days from natural background radiation – and much less time than this in a house with a high radon concentration;
- the maximum dose is around 500 times less than the radon action level in their homes;
- variations in the annual effective dose from natural sources of radiation can easily exceed 0.02 mSv (which renders impossible the detection of any increased risk arising from such doses); and
- 0.02 mSv equates to the radiation from around one flight to Australia, depending on matters such as route, height and solar activity. [2.18, 2.20-2.22, 2.29, 2.164, 4.20]

7.32. From the above doses and comparison with the standards and with radiation from other sources, it is clear that the actual risks would be very small. The national LLW Policy 2007 seeks a risk-informed approach; in this Policy, the suitable target for broad acceptability without concern is an excess risk of serious health effects or death of 1:1,000,000 pa. This proposal would meet that target. [1.38, 2.32, 2.79, 2.80, 2.145]

Perception of Harm – Law and Policy

7.33. The Annex to PPS23 on Planning and Pollution Control advises that for the actual or perceived level of risk to be material to the consideration of a planning application, the land use planning consequences of such risks or perceptions should be clearly demonstrated. There is a wealth of case law on this subject, as well as a number of relevant appeal decisions. If the harm were to occur that residents fear, it would be directly attributable to the landfilling of LLW at the appeal site and it could affect local people in the use of their land and property and the highway adjacent to the site. I have no doubt that this perception is a material consideration. What weight should be attached to it in making the decision on the appeal? It is to this matter that I now turn. [2.122-2.142, 3.17, 3.56-3.64, 4.6, 4.7]

Perception of Harm – Weight to be Attached

7.34. There is no dispute that the fears and perceptions of local people are genuinely held and that they are not malicious or invented. Perhaps the reasons for and results of the nearby and recent Corby toxic waste scandal will have been a significant contributory factor in the formation of local public opinion. Prof Kemp for NCC set out 18 risk perception factors plus 'stigma'; the more factors that apply in any case, the greater the perceived risk and sense of heightened concern or potential outrage. In summary, the factors are:

- the level of trust in those responsible?
- chronic and catastrophic health effects?
- familiarity with the technology?
- dangers that are unseen?
- understanding the waste disposal technology?
- scientific certainty?
- immediate or delayed effects?
- risk to future generations?
- voluntary or involuntary exposure to an imposed risk?

- level of personal control?
- whether only a specific community is affected?
- whether vulnerable people or environments at risk?
- balance of perceived risks and benefits?
- extent of media coverage?
- track record in dealing with health concerns?
- whether effects are reversible?
- man-made or natural hazard?
- fairness/unfairness? and
- stigma? [2.154, 3.64, 3.65, 4.8-4.10, {re Corby toxic waste - 4.46, 4.92, 5.16, 5.44, 5.52, 5.84} 5.1-5.103, 6.1-6.4, 6.5-6.11]

- 7.35. I have no doubt that all of the above factors apply in varying degrees to the appeal proposal. For example, any risk here would be imposed and involuntary, dangers would be unseen, there are fears for children and future generations, the hazard would be man-made and so on. Some of the factors are dealt with above on the question of actual harm but others merit specific comment here, starting with the level of trust. WW has little faith in the ability of the EA but, as already indicated, planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced. In the same context, concern is expressed about the lack of experience of Augean in dealing with LLW, its competence and whether it might compromise safety in pursuit of profit. While Augean's safety record is a matter for the EA to consider for the Permit application, and the 'Suitability of Augean' was one of the issues raised by WW in this regard (EA9 pg51), the bald facts fuel the perception fears, even though a closer examination of the details of its safety record do not significantly support the perception. Moreover, the EA is required (EA9 p6/7) by the Radioactive Substances Act 1993 to periodically review the limitations and conditions of authorisations (now Permits), including the operator's environmental performance, to properly protect the public and the environment. [1.46, 2.151, 2.152, 2.159, 3.68, 4.3-4.5, 4.42-4.44, 4.55, 4.69, 4.92, 5.24, 5.30, 5.99]
- 7.36. Suspicion about the landfilling of radioactive waste at Augean's Thornhaugh site without authority was unfounded. The material was 'exempt waste' that falls outside the terms of the Radioactive Substances Act, from the London Olympic site. [4.30, 4.31, 4.92, 5.25, 5.49, 5.68, Glossary]
- 7.37. NCC and WW argue that the consultation process was not adequate and that this fuelled the level of distrust. Specific claims are that Augean did not engage in a satisfactory manner with the public; the established King's Cliffe Liaison Group is not an effective means of community involvement; few of the consultation methods – newsletters, public exhibition, meetings of Parish Councils, telephone helpline, invitations to visit the site, inserts in the local press and Augean's website – allow for discussion; newsletters were not distributed widely enough; erroneous information; scientific uncertainty; differences in dose constraints; 'independent' agencies at the public exhibition were not independent; people at the public exhibition did not know they were taking part in a consultation exercise; consultation has been a tick box exercise; and the consultation process should have been similar to the one at Dounreay. [1.16, 2.64, 3.66-3.69, 4.11-4.25, 4.37]

- 7.38. However, an exercise such as that at Dounreay would only have been appropriate here if this had been an 'all options to be considered' proposal rather than for an additional waste stream to an existing landfill site; the correct approach was the one used for the Lillyhall landfill site. The Augean exercise was on similar lines. [2.63, 2.64, 2.143]
- 7.39. I consider that Augean's consultation with the public was thorough, comprehensive and, indeed, prodigious. It can always be argued that more or different things should have been done, for instance to facilitate discussions, but the guidance in the Good Practice Guide to Public Engagement in Development Schemes (OD32 pg22) is that public meetings are rarely an ideal forum to discuss and debate a development. Meetings in this case could well have been confrontational. NCC agreed, in the Statement of Common Ground (although Augean's approach was not endorsed by Prof Kemp for NCC) that the community engagement undertaken by Augean satisfied the requirements of its Statement of Community Involvement. The consultation exercise also met the requirements of the EA and, as illustrated by the comparison of communication activities, the above Good Practice Guide. In addition, I am mindful that there have been consultation exercises carried out by NCC in connection with the application and the EA in relation to the Permit, while King's Cliffe Parish Council carried out what it described as an "extensive consultation process". There has also been considerable local media coverage and no doubt this inquiry has afforded those interested to gain information and have their representations considered and, in some cases, heard. [1.16, 2.63, 2.64, 2.143 at AUG3.3 Appx9, 2.172, 3.69, 4.1-4.117, 5.1-5.103, 6.1-6.11]
- 7.40. As to the factors concerning technology, there are no nuclear installations in or close to Northamptonshire, so resident familiarity with the technology will be low for most people. Indeed, WW argued that people living near nuclear sites were used to being near a radioactive source and benefited from the jobs created and the economic advantages, unlike the residents near the ENRMF. Also, the waste disposal technology will not be familiar to many people, which is quite understandable. However, this is not assisted by the frequent references in representations and evidence to the waste 'dump' and the 'dumping' (at the appeal site and elsewhere) of radioactive and of hazardous wastes, evoking an image that is far from the truth at a modern engineered landfill that is and would be subject to a large number and wide range of conditions in the EP and in any planning permission. [1.44-1.48, 2.143, 3.68, 3.70, 4.89-4.90, 4.111, 5.11, 5.25, 5.31, 5.44, 5.49, 5.50, 5.56, 5.67, 5.70, 5.72, 5.74, 5.75, 5.81, 5.92]
- 7.41. There are fears that the King's Cliffe scheme is being 'done on the cheap', again fuelling distrust and fear. For example, why would there be a roof over the operational disposal area at Dounreay and at Morvilliers, to prevent rainfall on the site and reduce the formation of leachate during the filling operations, but no roof at the ENRMF? Augean has carried out a comparison of the main features of the ENRMF and the other sites: Dounreay, Morvilliers, El Cabril, Lillyhall, Clifton Marsh and Keekle Head. This demonstrates that the various sites take different types of waste, are located in different geographical, geological, hydrogeological and climatic environments and have different forms of containment and operations appropriate to their location and waste type. This argument is similar to claims by NCC (although NCC

also argues that LLW can be disposed of at any landfill site able to get regulatory approval) and WW that a more highly engineered form of containment would be needed. [References after next paragraph]

- 7.42. At Dounreay, the disposal area is excavated into hard rock and is lined with concrete. The roof would only be in place for a short time; it is difficult to construct a physically stable liner of clay and geosynthetic membrane on vertical rock walls. It is misguided to look at design features in isolation and select items from one site to use at another in a wholly different environment. Each site design is site specific and, at each one, an assessment will have been made by the relevant technical specialists and regulatory authorities to secure BAT in the specific circumstances involved. And while Augean could have proposed a roof over the operational site - to reduce the perception of risk rather than for any functional reason - the roofed operational site would exist for far less time than the restored landfill with no roof. I doubt very much whether a willingness to provide a temporary roof would have had any significant impact on the perception of harm. [2.33-2.35, 2.53, 2.55, 2.158, 3.34, 3.67, 3.68, 4.34, 4.35, 4.37, 4.44, 4.48, 4.97, 4.115, 5.18, 5.24, 5.25, 5.66, 5.88]
- 7.43. It is argued that the lack of trust in Augean has been amplified by the changing nature of its intentions about extending the area and life of the landfill. There is some merit in this although, as Augean's letter of 31 August 2010 to Pins (A6) confirms, there had been several disclosures to NCC and the liaison group about an extension to the void and the possible need to apply for an extension of time for the current permission. Also, Augean has been promoting an extension to the ENRMF through the Minerals and Waste Development Framework since 2007, albeit that NCC advises that Augean has not made any submissions to the MWDF process that there should be any policy dealing with LLW. Nevertheless, the changing nature of its intentions cannot have come as a complete shock to everyone. [2.1, 2.176, 3.68, 3.74, 3.75, 3.77-3.78, 3.86, 3.88, 3.89]
- 7.44. In conclusion on this issue, the perception of harm is a material consideration. All of the identified 19 perception factors would apply in varying degrees and, in general terms, the more that apply, the greater the perceived harm. The fears are real but there is limited evidence of any direct effects from the perception of harm at this stage. There is, as Augean states, a clear gulf between the technical assessment of the risk and the public perception. The mainstream scientific assessment of the effects of low level radiation is far removed from the perception that many people have, using information from the media and pressure groups, as the actual risk of harm would be extremely small and it would meet Government guidelines. The inquiry process, itself, highlights the issue and serves to focus fears and concerns. Indeed, an HPA case study into the Ince Marshes Recovery Park concludes, "...major effects on physical health were...from its planning application". Nevertheless, the inquiry process also provides a direct link between residents and the decision-maker and knowledge that their views will be taken into account in making the decision. This knowledge, the lack of any objection on actual harm from all of the relevant statutory bodies and from NCC and its independent expert, and the stance of the Government on

risk in its statement of national policy should assist in ameliorating public concerns. For these reasons, I attach only limited weight to the perception of harm in making my recommendation on this appeal. [2.31, 2.66, 2.67, 2.141, 6.9]

Need

- 7.45. The only policy to which reference is made in the reasons for refusal is Waste Local Plan Policy 1 in the 2nd reason. This policy, which no longer exists because it has not been 'saved', included a requirement to demonstrate need but that was not relied on in the reason. However, when NCC clarified (in NCC3) its first reason for refusal, it argued that the applicant must show that there is a clearly established need for the development to serve local and regional requirements, that the development is not for local and regional needs but to serve a far wider catchment and that the operational use of the site could only be short and it could not meet the need that Augean identifies. The Statement of Common Ground confirms the need for new facilities and that there is none in the southern half of the UK. The Core Strategy does not require need to be demonstrated. [1.15, 1.31, 2.43, 2.47, 2.108]
- 7.46. The 2007 National LLW Policy statement seeks flexible, cost-effective, fit-for-purpose management solutions to deal with the types of waste that do not require the much higher degree of engineered containment found at the Drigg LLW Repository (LLWR), in order to husband that valuable and costly facility. Similarly, the 2010 National LLW Strategy and the 2009 LLW Management Plan prepared by the LLWR confirm that making the best use of the Drigg repository is critical to the continued availability of LLW management capacity and that capacity at the site is limited. The Strategy states that the UK will generate significantly more LLW than the potential capacity at LLWR, which means there is a need for alternative ways to manage LLW including, where necessary, the use of alternative disposal routes. [1.38-1.40, 2.81, 2.87, 3.18, 3.24, 3.35]
- 7.47. It is clear that other disposal routes are needed, the 2007 Policy includes a presumption towards early solutions, albeit that these do not necessarily equate with early disposal and, as the 2010 Strategy states, the alternative disposal options include the use of existing landfill sites. The Strategy seeks 3 outcomes, of which 2 are particularly relevant here: 'Flexibility for early solutions' and 'Value for money', subjects to which I will return below. [1.38, 1.39, 2.87, 2.90, 2.116, 3.25, 3.27, 4.97, 4.105]
- 7.48. NCC points to the guidance in the Strategy that there may be sufficient capability in the nuclear estate, including the supply chain, rather than investment in centralised facilities. However, this proposal is not for a centralised facility on the lines of the LLWR, even though it would provide a centralised facility for a limited range of wastes and for a limited time in the absence of any competing provision in southern and central England; it would comprise a private investment, using an existing facility within the supply chain, rather than an investment by a public body; and, as Augean indicates, capability only becomes capacity when provision is actually made. Moreover, although the Strategy is of relatively recent date, thereby limiting the opportunity to react to it, there is no sign of any other off-site or on-site landfill provision coming forward in England in the time-frame of the appeal

proposal other than in the north west. Indeed, the NDA states, in its letter of 15 September 2010, that the business case for the "construction of new infrastructure on NDA owned land has not so far been compelling and would ... take several years to bring on line. As such, certainly in the short term, existing commercial landfills capable of accepting VLLW and some LLW is (sic) the only alternative to disposal at LLWR. (and) The availability of appropriate waste routes is essential to the decommissioning process and hence delivery of NDA's core mission." [2.83, 2.90, 2.109, 2.110, 2.111, 3.25, 3.40, 4.98-4.101]

- 7.49. The only available figures for the short-term demand are those supplied by the potential consignors, giving a total of about 38,000 tonnes of residual LLW, as shown in Augean's Table 1, excluding waste from military establishments, from the non-nuclear industry and an amount of "orphaned" drummed waste. As to questions about the accuracy of the figures in Table 1, the shorter the timescale of any forecast, the less time there is for circumstances to change and reduce its accuracy. In this case, the appeal proposal would stop taking LLW in mid-2013. [References after next paragraph]
- 7.50. The largest single claimed source would be the residual ash from the Fawley (Tradebe) incinerator, near Southampton. I see no reason to doubt that, subject to a Permit for Tradebe, a consequence of allowing this appeal would be that it would be able to treat larger volumes of LLW higher up the hierarchy, with disposal of the ash at the ENRMF. Also, the figures from RSRL are of significance, as are its arguments that its storage capacity is now full; that the lack of an alternative route may impact on decommissioning progress; and that delays to decommissioning cost the UK taxpayer tens of millions of pounds each year. While these statements (as well as other inputs to Table 1) are untested by cross examination and must be given less weight for that reason, RSRL's support for the appeal proposal is undoubted and its stance reflects that of the NDA outlined above. Furthermore, it was RSRL's approach to Augean about the 2007 Policy that led to the submitted application. [2.71, 2.83, 2.111-2.116, 2.118, 2.120, 3.38-3.47, 3.55, 4.97, 4.105, 4.106]
- 7.51. None of the 11 sources of LLW from the nuclear industry in Augean's Table 1 is local to King's Cliffe, the nearest being Harwell at a distance of around 90 miles. The largest potential source, Tradebe/Fawley, is a considerable distance away from it. This raises questions such as compliance with the 'proximity principle' and with BAT. As the National Strategy makes plain, waste planning should "enable waste to be disposed of in one of the nearest appropriate installations. (and) This is a matter that is appropriately considered as part of the BAT or BPEO/BPM assessment undertaken by the waste producer as part of their application for an authorisation (now Permit) to send waste off site for...disposal". There was a substantial level of dispute at the inquiry as to whether the proposal would be BAT/BPEO. [Inspector's Note: the BPEO concept has been removed from national guidance on waste planning generally but, with regard to LLW, the National Strategy includes BAT (e.g. NS17 pg12) and the EA treats BAT/BPEO/BPM as being the same.] [1.29, 1.42, 1.44, 1.47, 2.28, 2.42, 2.51, 2.52, 2.54, 2.75, 2.91, 2.92, 2.112, 2.113, 2.115-2.120, 2.180, 2.190, 3.171, 3.20, 3.21, 3.44, 3.47, 3.49-3.54, 4.5, 4.34-4.37, 4.106, 5.73, 5.87, 5.91] [Proximity Principle refs after next para.]
- 7.52. While a lot has been said about the proximity principle, the answer is quite short: as indicated above, there is no sign of any other off-site or on-site

landfill provision coming forward in England in the time-frame of the appeal proposal other than in the north west. As the Strategy states, the number of appropriate facilities means that the nearest appropriate one may be a considerable distance from the source of the waste. For radioactive waste from southern and central England, the only and therefore the nearest installation would be the appeal site. In addition to the site being the nearest, the EA clearly considers that the ENRMF installation would be an appropriate one, as shown by the Draft EP. [2.40, 2.42, 2.48, 2.68, 2.69, 2.74-2.77, 2.85, 2.91, 2.92, 2.94, 2.104, 2.116, 2.118, 2.120, 2.178, 2.190, 3.16, 3.18, 3.24, 3.25, 3.28-3.30, 3.33, 3.36, 3.37, 3.40, 3.48, 4.101, 4.112-4.115, 5.2, 5.23, 5.65, 5.94]

- 7.53. Furthermore, in addition to a Permit for the operator of the destination disposal site, the consignor would need a Permit from the EA, in which BAT and the proximity principle would be considered. While the EA would not need to specify the destination site in the EP for the consignor, it could do so. It may be difficult for the consignor to resolve, via the BPEO process, the "consideration of local community issues" at the receiving site. In the key principle of 'high standards of public acceptability providing an overarching expectation', the phrase "high standards of public acceptability" is not defined. No doubt, the consignor would seek to place reliance on the consultation exercises for the ENRMF site (e.g. p7.39 above) which will have shed significant light on this subject. [References after next paragraph]
- 7.54. In this context, NCC doubts that potential consignors would be compliant with the national Policy and Strategy and argues that the SoS needs to be satisfied for the determination of this appeal that they would be policy compliant. I disagree. That would be a matter for the EA to consider in the Permitting system. And if a consignor could not comply, the EA could refuse to grant a Permit, which would reduce the amount of LLW that could be sent to the ENRMF and hence the need for it. However, as there is no requirement in the development plan or in national policy that requires a demonstration of need for the appeal proposal, a lack of 'need' would not count against the appellant's case but a demonstrable need for the proposal and any related urgency would count in its favour. [2.107, 2.173, 3.18-3.22, 3.37, 3.48-3.53, 4.90, 4.115, 4.116]
- 7.55. The EP system would also bear on the need to apply the waste hierarchy (see Glossary 'Hierarchy') to the legacy wastes, being wastes that already exist from the decommissioning process that would be a significant proportion of the LLW to be sent to the appeal site. It is true that there are limitations to the application of the hierarchy to such wastes, as the national Policy recognises, but I find little to support NCC's concern that the waste hierarchy would not be applied to the legacy wastes or that doing so would reduce the amounts involved by any significant degree. The advice from RSRL is that the quantity identified is based on realistic densities and that the wastes are 'un-compactable'. Moreover, there is no dispute that the Strategy seeks the clearance of these wastes as soon as practicable via an appropriate treatment or disposal route. [1.15, 1.38, 1.39, 2.69, 2.71, 2.73, 2.76, 2.82, 2.87, 2.89, 2.90, 2.111-2.113, 2.116, 2.118, 2.178, 2.189, 2.190, 3.16, 3.25, 3.30, 3.32, 3.48]
- 7.56. There is a claim by NCC in its original Reason for Refusal 3 that the proposal would not be BAT and in its revised Reason 3 that there are available disposal techniques for LLW that deliver better outcomes than landfill burial.

However, these are not specified and, as Augean points out, it is difficult to understand how there can be 'better' techniques when BAT, as determined by the EA, delivers the 'Best' Available Technique. [1.31, 2.50-2.56, 3.44-3.55]

- 7.57. A significant driving force in the national Policy and Strategy is the need to make the best use of the LLWR at Drigg (see report p7.46 above) via alternative fit-for-purpose cost-effective solutions in order to husband the precious resource. The Drigg Repository is critical to the continued availability of LLW management capacity and capability. Non-disposal options must be found but, where disposal of the residual waste – the last option at the bottom of the waste hierarchy – is the appropriate route, it should not be postponed. There is a need to find alternative disposal options, somewhere. The appeal proposal would make a contribution to that need until mid-2013. The NDA confirms that the diversion of LLW and VLLW to alternative disposal routes has the potential to significantly extend the life of the LLWR by several decades. The LLWR estimates the financial savings in this regard at around £1 bn over a 100 year period, a not inconsiderable £10m per year on average. [1.39, 1.40, 2.71, 2.81, 2.83, 2.87, 2.88, 2.90, 2.109, 2.111, 2.113, 3.16, 3.24, 3.25, 3.29, 3.30, 3.34, 3.35, 3.55, 4.16, 4.17, 4.94, 4.96, 4.101, 4.112]
- 7.58. As the National Strategy says, affordability is a key consideration and one of its 3 desired outcomes is 'Value for Money'. In addition, the NDA and the RSRL refer to cost savings to the public purse, which the off-site supply chain would facilitate. Moreover, the use of an existing landfill would be quicker than the construction of a new facility (whether on- or off-site), in line with the desired outcome of 'Flexibility for early solutions'. [1.39, 2.87, 2.90, 2.116, 4.97]
- 7.59. In conclusion on this issue, there is no policy requirement to demonstrate need. There is a need for alternative ways to manage LLW, there is no indication of any other facility being proposed to serve southern and central England, legacy wastes should be cleared as soon as possible and it is necessary to secure ways to husband the valuable resource of Drigg LLWR, which should be used only for residual wastes that cannot be treated elsewhere. Substantial savings of public money would be secured for the 2 year life of the proposal and, subject to the preparation of Waste Management Plans by consignors and unlike the provision of a new landfill, it could be brought into use with little delay.

Hazardous Landfill Void Space

- 7.60. There is a sustainability – and potentially a need – argument for making the best use of the existing ENRMF landfill, a facility that the adopted Core Strategy identifies as of national significance. The landfill will not be filled using only hazardous waste before the expiry of the permission in August 2013, albeit that the potential does exist for NCC to extend the period of the permission to allow more time for the site to be completed using hazardous waste. The addition of LLW to the waste stream would speed up the filling process. Thus, I find no foundation for the additional 'reason for refusal' (c), concerning completion of operations and restoration of the site by 31 August 2013. [References after the following paragraph]

7.61. There is also a counter argument that there is a need to safeguard the hazardous waste void-space, which the appeal proposal would inevitably reduce. However, the baseline for the intake of hazardous waste to the site is around 100,000-120,000 tpa and Augean states that there is capacity until 2015/2016, say 5-6 years from the date of the inquiry, giving a remaining void-space for at least 0.5 mt. The best estimate for the intake of LLW to the site is around 20,000 tpa. Thus, in the timescale of the appeal proposal until 2013, the intake of LLW would have no effect on the void-space needed for hazardous waste: the site would not be full by 2013 even with the addition of the LLW waste stream. The intake of LLW until 2013 would only occupy void-space that would otherwise be used for hazardous waste if NCC were to grant an extension to the current permission until beyond 2013, in which case around 40,000 tonnes capacity taken up by LLW would not then be available for hazardous waste. However, no such application has even been submitted, let alone determined. Hence, I attach little weight to this argument. [1.13, 1.19, 1.32, 1.35, 2.1, 2.7, 2.47, 2.49, 2.104, 2.108, 2.110, 2.121, 2.191, 3.8, 3.9, 3.38, 3.43, 3.74, 3.75, 3.78, 5.69. See also p8.3 below]

Ad hoc decision?

7.62. The national LLW Strategy states that "Waste management decisions should not be taken on an ad-hoc basis". Permission in this case would result in a waste management decision that would not be made within an LLW Waste Management Plan, prepared by a waste producer/manager with a systematic assessment of options. NCC argues that waste management decisions should be preceded by a Management Plan. However, this proposal seeks only to bring forward a supply chain opportunity that could be considered within any such Management Plan. I agree that no consignment should be sent until there is a relevant LLW Waste Management Plan. If the ENRMF were not to fit in with the Plan, for example because it was not the nearest appropriate installation and/or the waste would not be residual and the proposal would not be BAT, then the LLW would not be sent there. [2.83, 3.22, 3.23]

Traffic and Transport

7.63. The national LLW Strategy advises that, although the desire to avoid excessive transportation is an important consideration, it must be balanced with all of the other relevant factors and there may be an opportunity to transfer a portion of waste movements from road to rail. Rail is to be encouraged and NCC pursued this aim. However, the BAT assessment by the waste producer/consignor would assess rail/road options as well as the distances involved. Also, as RSRL points out, the advice in the Network Rail Guide to Rail Freight is that, for rail to be cost competitive with road would require payloads of 300 tonnes or more per train, over distances of over 150 miles between rail-linked sites, where there is little or no road haulage needed at each end. These requirements could not be met. The only rail-served disposal site is Drigg LLWR and, while Mr Aumônier for NCC states that neither RSRL nor the appellant has presented evidence that disposal at LLWR is no longer acceptable as BAT, it is located far from waste sources in southern England and it is needed as the last resort for wastes that cannot be managed by other routes. Harwell has no on-site rail head and, while NCC lists 8 rail facilities, all would involve road haulage from the source of the

waste, in addition to haulage from the destination freight terminal to any disposal site other than Drigg. [1.38,1.39, 2.92, 2.93, 2.119, 3.18, 3.28, 4.114]

- 7.64. As to road haulage, Government Policy states that the regulations for the transport of radioactive waste provide a safe environment and the Strategy advises that there is a "relatively low risk presented by the transport of LLW". [2.86, 5.2, 5.8, 5.51, 5.55, 5.94]
- 7.65. WW argues that the access to the site is an accident black spot. However, in the 14 year period ending in December 2008, there were 16 accidents at the A47/Stamford Road junction but none was linked with the use of the appeal site and there were no accidents at the site access; the existing site access is not proposed to be altered; the appeal proposal would not increase the permitted input to the site of 249,999 tpa or, subject to vehicle sizes, the linked traffic generation. NCC has no highway objection to the appeal proposal. I agree. [1.7, 1.22, 2.46, 2.101, 4.47, 5.2, 5.8, 5.94]

Economic Effects

- 7.66. There is concern that the appeal proposal would be to the detriment of a large tourism scheme at Rockingham Forest Park, but the developer is aware of this appeal and there is no indication that he is being dissuaded from proceeding; there is no certainty that that scheme will gain planning permission and, even if it did, it is unlikely that it would be in use by mid 2013. Concerns about economic impacts have also been expressed by an egg producer, a basket maker, the adjacent farmer and the large Howard's haulage firm opposite the appeal site. However, the indications are that the existing hazardous waste landfill at the site has minimal impact on business and the local community and I see no reason why, after an initial settling period, the same would not apply to the appeal proposal. Although the use of the ENRMF for LLW would do little for local employment, the Landfill Tax Credit scheme, as it has already, and the S106 Agreement, would provide a significant input to local facilities. [1.12, 1.43, 2.101, 2.149, 2.150, 2.153, 2.161-2.163, 4.85, 4.109, 4.111, 5.20, 5.56, 5.96-5.101, 6.6-6.8, 6.11]

Localism

- 7.67. The only information on this subject that is before me is that which was publicly available up to the last day of the inquiry, 24 November 2010 and, while there was a general understanding of the subject, there was no clear definition to hand. In any event, the national LLW Strategy already seeks high standards of public acceptability, albeit that these are not defined, and Augean has made substantial efforts to engage with the public. However, it would be unusual to find any landfill proposal that is not the subject of any objection and it would negate National Policy and Strategy if local public support or even acceptance were required as a pre-requisite of any such permission. This appeal has been recovered for decision by the SoS because it relates to development of major importance having more than local significance. Thus, any national benefit would need to be set against the costs to the local community in making the decision. [1.1, 1.41, 2.72, 2.172-2.175, 3.68, 5.34, 5.58, 5.59]

- 7.68. There is a substantial level of opposition to the appeal proposal, much of it deriving from the perception of harm and related effects. [4.1-4.117, 5.1-5.103, 6.16.4, 6.6-6.11]

Precedent

- 7.69. Would a permission for this appeal create a precedent? To a significant degree, yes, if the new application is for or includes the landfilling of LLW. In general terms, the greater the similarity between proposals, the greater the potential precedent. I acknowledge that any new application would involve a change of circumstances from those pertaining now, in part from the passage of time or perhaps from proposals to construct new cells and develop different restoration proposals and landforms. [References after next paragraph]
- 7.70. However, any new application would be on the same site now being considered or on an adjacent site and many other circumstances would remain the same or be little changed. And, as the new application is expected to be submitted in 2011, possibly shortly after the decision on this appeal, there will have been limited time for change with regard to matters such as policy or the development of competing facilities, which would affect the consideration of the proximity principle, BAT, need and so on. In the same way that appeal decisions elsewhere have been quoted here on the 'perception of harm' issue, I have no doubt that any conclusions that the SoS reaches on this appeal that are favourable to the appellant on actual harm, perception of harm, need, transport, highway safety, localism, economic effects and the like would be quoted by the appellant where relevant in support of a new application for the landfilling of LLW. [2.6, 2.134-2.142, 2.176-2.181, 3.40, 3.84, 6.11]
- 7.71. If this appeal is allowed, the chances of permission for a future proposal for the landfilling of LLW at or adjacent to the cells to be filled in this case would be enhanced.

Environmental Statement

- 7.72. The added 'reasons for refusal' (a) and (b) state, in essence, that this appeal is part of a project that should be the subject of a comprehensive application and that the Environmental Statement should have assessed the totality of the cumulative effects. [1.32]
- 7.73. NCC was able to deal with the application that led to this appeal on the basis of the information that it had including the Environmental Statement (ES). Augean advises that it only decided in May 2010, after the preparation of the ES, that it will seek to extend the use for hazardous waste until 2026 and, even now (at the time of the inquiry), states that it has not yet decided whether that application will include LLW. The current appeal is not part of a piecemeal proposal or an integral element of a comprehensive scheme; consequently, there would be no cumulative impacts of concern deriving from any future application that might include LLW. This appeal is for a stand-alone proposal which can be and is being considered on its own merits and, no doubt by reason of the precedent arguments outlined above, the appeal decision to be made could be a factor in any decision by Augean about a

future application. It is not unusual for applications to be made to alter or extend the life of a temporary permission; at present, there are no details of any future proposals. I see no reason why the current appeal should not be dealt with on its own merits. [References after next paragraph]

- 7.74. As to the ES, I find nothing to support NCC's claim that a permission in this case would frustrate the aims of the Environmental Impact Regulations and the Directive. As the current proposal is not part of a comprehensive scheme from which there would be a cumulative impact, I find nothing to support the claim that an assessment of cumulative impact would be deferred to be examined by an ES at the stage of the second application. [2,2-2.9, 3.74-3.88]
- 7.75. In relation to NCC's argument, in September 2010, before the opening of the inquiry, that additional environmental information should be required, the decision of Pins was that there was no justification for this. At the opening of the inquiry, NCC referred to the Mageean case, which states that, with regard to an EIA screening direction, "only the Secretary of State can cancel or vary that screening decision". That case is (at the date of the inquiry) subject to challenge but, in any event, the submissions about the adequacy of the ES are now before the SoS.

Development Plan

- 7.76. The RSS, which has been the subject of the Cala Homes cases in the High Court, has no policies specific to LLW and none that I consider to be particularly relevant to this proposal. [2.96, 3.1]
- 7.77. NCC argues that the proposal does not accord with the DP because the plan has no policies that are specific to LLW and that, to be fully in accord, the proposal needs to be assessed against specific policies. While the development plan is silent on the subject of LLW, and none of the emerging DPD documents has a policy on LLW, it is possible to assess the proposal against other policies that are of relevance. Saved Policy 2 of the Waste Local Plan provides that the development of waste management facilities will be permitted on 'Main sites'; the appeal site is identified as a main site. This proposal accords with Policy 2. This policy will be superseded by the Minerals and Waste Development Framework (MWDF) Locations DPD when it is adopted. This emerging DPD does not identify the appeal site as suitable for a waste management use but a Suggested Change by the Council would confer a favourable status for the continuation of a waste use where it meets the intent of the MWDF strategy and policies. [1.34, 1.37, 2.95, 2.100, 3.2-3.4, 3.10]
- 7.78. The adopted MWDF Core Strategy DPD (CS) recognises the role of ENRMF as a specialist site with a national catchment for hazardous waste and proposes that its current role should be maintained and that it should continue to have a regional role by supporting the management of hazardous waste in the region. In the light of my conclusion in p7.61 above, the appeal proposal would not conflict with that role unless permission is granted to extend the life of the hazardous waste landfill. The CS does not refer to the use of the ENRMF for the management of radioactive waste: this is an issue to be addressed at review in the light of emerging national policy. NCC does not

cite conflict with Policy CS14, which provides criteria for addressing the impact of waste developments. [2.98, 3.6-3.9, 3.11]

- 7.79. The CS seeks to avoid the County becoming a key sub-national location for waste management but accepts that it is not appropriate to oppose facilities serving wider catchment areas and confirms that the appeal site serves a national catchment area as it is one of the few hazardous waste facilities in the country. The emerging MWDF Control and Management of Development DPD which, at the time of the inquiry had still to complete its examination, advises (at p3.12) that national catchments can be appropriate where facilities would be of a specialist nature relating to the type of waste to be managed or the nature of the management processes; (p3.13) that a national catchment would be appropriate where a facility is one of only very few nationally on the basis of its specialist role; and (p3.8) some waste management facilities can have a highly specialised role that means they have a larger catchment area extending beyond the county and such specialisms need to be addressed so that they are not unnecessarily constrained. [2.99, 2.103, 3.11]
- 7.80. While p3.6 of this DPD indicates that it is not considered appropriate given sustainability issues for Northamptonshire to take on a role as a key sub-national location for waste management facilities, such issues are not explained. If a catchment is national, it is inevitable that some sustainability issues will arise. [3.11]
- 7.81. Would the use of the appeal site for LLW serve a specialist role? It does, as NCC accepts, for the disposal of hazardous waste but it would not, in the Council's opinion, for LLW. A useful table has been prepared (AUG3.3 Appx19) which compares non-hazardous waste, hazardous waste and LLW in terms of 24 factors, including Environmental Permitting, training, monitoring, catchments, packaging, transport controls and the like. This reveals the many similarities in controls, procedures and need for specific national policies and strategies between LLW and hazardous wastes with, for some factors, there being more stringent controls for LLW than for hazardous waste. Furthermore, NCC is concerned that the development plan contains no policies that relate specifically to the LLW development, which would seem to point to the specialised nature of the facility. Also, the Committee report refers to specialist provision. The above factors convince me that the appeal proposal is for a specialist facility. [2.40, 2.106, 2.107, 3.4, 3.5]
- 7.82. In addition, the use of the site for LLW would involve a national catchment (in line with the DPD p3.13), being one of only 3 such sites, the other 2 being in the north west at Clifton Marsh, which has limited scope for taking waste from outside its own region, and Lillyhall, which is largely committed to Sellafield's waste. [2.106, 3.11]
- 7.83. Thus, the proposal gains some support from the Control and Management DPD but, as this plan is still at a relatively early stage in its preparation, this support is limited.

7.84. In conclusion on this issue, I find no conflict with the adopted development plan and there is some limited support for the appeal proposal in the emerging Control and Management DPD.

Overall Conclusion

- 7.85. The existing site has an Environmental Permit for the landfilling of hazardous waste. A draft EP has been issued by the Environment Agency, confirming that it considers the appeal proposal to represent BAT. The Permit includes controls on pollution and for the protection of health.
- 7.86. The risk of actual harm from the development would be very low; it would meet the standard of 1:1,000,000 pa set by the Government. The perception of harm is a material consideration in the decision-making process but it is a factor to which I attach limited weight.
- 7.87. I accord little weight to claims that this would be an ad hoc decision, to fears about the transport of waste, about highway safety near the appeal site or the need to encourage transport of LLW by rail. Any harmful economic effects would be slight. The Landfill Tax Credit scheme and the S106 Agreement would provide for considerable payments to provide and support local facilities.
- 7.88. A permission for this proposal would be likely to set a precedent for any future application at this site that includes the landfilling of LLW. The greater the degree of similarity between the 2 proposals, the greater the degree of precedent that would be created.
- 7.89. I have considered the Environmental Statement and all of the environmental information. I find nothing to support NCC's claim that this proposal is part of a comprehensive scheme from which there would be a cumulative impact and that a permission now would frustrate the aims of the Environmental Impact Regulations and the Directive.
- 7.90. The 2007 National Policy on LLW does not, after application of the waste hierarchy, preclude the controlled burial of LLW and VLLW and the national Strategies for LLW from nuclear and from non-nuclear sites confirm that alternative disposal options include the use of existing landfill sites, as in this case.
- 7.91. There is no policy requirement to demonstrate need. Nevertheless, there is a need for alternative ways to manage LLW; there is no existing facility which serves southern and central England and the ENRMF is the only one that is proposed, albeit for only a 2 year period; legacy wastes should be cleared as soon as possible; and it is necessary to secure ways to husband the valuable resource of Drigg LLWR, which should be used only for residual wastes that cannot be treated elsewhere. There is potential for substantial savings of public money to be secured over the 2 year period and the landfill could be brought into use for LLW with little delay.
- 7.92. I consider the need that this proposal would meet and the compliance with and furtherance of aims and desired outcomes in the national LLW Policy, as

developed by the Strategies, to constitute significant material considerations in support of this proposal.

- 7.93. As to the adopted development plan, I find there to be no conflict and the emerging Control and Management DPD provides some limited support for it.
- 7.94. In conclusion, any harm from the development would be limited. The proposal gains significant support from need and the national LLW Policy and Strategies; it does not conflict with the development plan and it gains some limited support from the emerging plan; and the S106 Agreement would provide a benefit to the local community in addition to that from the Landfill Tax Credit system.
- 7.95. There is substantial local opposition to the proposal which, to a large extent derives from the perception of harm and related effects but this proposal has been recovered for decision by the Secretary of State because it relates to development of major importance having more than local significance. While the emerging Localism programme indicates an increasing weight to be given to the views of the local community in decision-making, this does not in my opinion outweigh the factors supporting the provision of this national facility for a limited period until 31 August 2013.
- 7.96. I turn now to the subject of Conditions and the S106 Agreement before making my recommendation.

8. CONDITIONS

- 8.1. A Schedule of Conditions and Approved Plans (PA15A) was submitted to and discussed at the inquiry. Permission for the appeal proposal would be in addition to the 2006 permission Ref EN/05/1264C (PA1 AppxA) for the landfilling of hazardous waste at the ENRMF, each permission being subject to its own conditions. Any conflict between the two sets of conditions could lead to confusion and problems of clarity and enforcement. The need for compatibility between the two sets of conditions is an important principle in dealing with those now suggested. For example, it would be wrong to include conditions in this permission which would require a new application if there were subsequent proposals to change any details such as the hours of work or the layout of site reception facilities if the same "Except as may be otherwise agreed in writing by the Waste Planning Authority" changes could be made by an agreement with the Council under the terms of the existing hazardous waste permission.
- 8.2. Where I make a number of minor changes to the conditions for the sake of clarity, while applying the above principle, the changes are self-explanatory and I do not comment on them. Where any changes are more than minor ones, I give my comments and those of the parties below as necessary. I attach a schedule of conditions and approved plans as Appendix A after my recommendation.
- 8.3. With the exception of condition 4, all of the conditions were agreed between NCC and Augean. Condition 4 deals with a dispute over whether there should be a limit to the amount of LLW that could be landfilled in any calendar year.

No amount of LLW is specified in the planning application other than that the overall permitted amount for hazardous waste of 249,999 tpa would not change. In theory, if that total were also imposed for this appeal proposal, it could all be used for LLW. Augean argues that there is no need for a condition at all but has no objection to the appropriateness of a condition to limit the amount of LLW if one were found to be necessary; and if a limit is imposed, it should be for 100,000 tonnes per calendar year within the maximum of 249,999 tonnes. NCC argues that there should be a limit of 25,000 tonnes for LLW within the 249,999 tpa.

- 8.4. I deal with these matters in my Conclusions above at p7.61 where I state that, in the timescale of the appeal proposal until 2013, the intake of LLW would have no effect on the void-space used for hazardous waste: the site would not be full by 2013 even with the addition of the LLW waste stream. The intake of LLW until 2013 would only occupy void-space that would otherwise be used for hazardous waste if NCC were to grant an extension to the current permission until beyond 2013, in which case around 40,000 tonnes capacity taken up by LLW would not then be available for hazardous waste. However, no such application has even been submitted, let alone determined. Also, in p7.78 above I point out that the adopted Core Strategy recognises the national catchment of the ENRMF and proposes that the landfill should continue to have a regional role. Conversely, the emerging Locations DPD (report p7.77 above) does not identify the site as suitable for a waste management use but the Council is suggesting a change to give it a favourable status for the continuation of a waste use.
- 8.5. There is limited evidence that the landfilling of LLW after August 2013 – if an application were submitted and granted - would conflict with adopted or emerging policy by interfering unduly with the role of the site for the acceptance of hazardous waste. My view is that a condition to limit the amount of LLW to be landfilled per year would not be necessary for the protection of that role. If, on the other hand, the Secretary of State considers it necessary to limit the amount of LLW to be landfilled, for the reasons in the above paragraphs or in the one below, the alternative conditions No 4, one from NCC and one from Augean – which differ only with regard to the amount of LLW – are appropriately worded (PA15A).
- 8.6. WW states that there should be a limit on the amount of LLW accepted at the site because it would have a positive and beneficial impact on the perception of harm. I deal with the weight to be given to the 'perception' case in my Conclusions at p7.34-7.44 and, for those reasons, the imposition of the condition would not pass the tests on the use of conditions set out in Circular 11/95.
- 8.7. Nevertheless, it would be necessary to impose a condition (No 4) to limit the total amount of waste deposited at the site per year, along the lines of Condition 5 of the 2006 permission, as that is the basis for the application. Without such a condition, an unlimited amount of LLW could be deposited under the terms of the planning permission in addition to the hazardous waste.

- 8.8. The Landscape Restoration Master Plan, Figure 8.6, in condition 5 is found in the ES 'Figures' section, as the last plan before the Appendices (PA2).
- 8.9. As to condition 8, Augean could not be required by condition to control the routes of vehicles on public roads away from the site. However, I consider that condition 8 is acceptable because it simply requires Augean to monitor the routes of commercial vehicles entering or leaving the site access, with them leaving towards the north or entering from the north. As I saw at my site visit, the cameras overlooking the entrance (and the site) allow satisfactory monitoring of this matter and, no doubt if any drivers were to enter from or leave towards the south, it would also be obvious to local residents who could inform the Council. Moreover, this condition is similar to condition 8 of the 2006 permission.
- 8.10. The submitted/agreed condition 10 on vehicle wheel washing facilities requires them to be provided and maintained. Such facilities exist on site now. I saw them in operation. My recommended improvement to the condition would allow the Council to continue to accept these facilities or require improved ones if it saw fit.
- 8.11. WW stated that the submitted condition 11 on site security did not specify that the site security measures should go around the complete boundary of the site (KCWW5). I have amended the condition accordingly for the avoidance of doubt. Where necessary, NCC would consult with the EA about details and about when the measures were no longer needed.
- 8.12. As submitted, condition 16 would require Augean to control the design and maintenance of vehicles visiting the site, in order to reduce noise levels. While, in theory, Augean could turn away vehicles that it suspected were not well maintained, this would be likely to be impractical to enforce. The version of No 16 submitted is the same as No 16 in the 2006 permission; it could be argued that the removal of 'vehicles visiting the site' from the new condition 16 would result in it not being compatible with the existing condition 16. However, as that small part of the existing condition would not be enforceable in any event, the lack of compatibility would not be an issue of concern. Therefore, I recommend that condition 16 makes no reference to controls over visiting vehicles.
- 8.13. Condition 19 includes requirements for the capping of the cells. Condition 21 of the 2006 permission refers to 1.3 m of cover comprising an engineered clay cap of not less than 1 metre and an agricultural cap of not less than 1 metre. Clearly the figures do not tally. Augean advises that, rather than a clay cap, a geosynthetic lining system (made of a geocomposite/clay material) has been used to give a greater level of protection. The cap would, in any event, have to meet the requirements of the EA (See also KCWW5 and AUG2.2 p6.2) and I have taken this into account in recommending amending this condition. Augean will approach NCC to vary condition 21a of the 2006 permission.
- 8.14. Condition 20 is vague as submitted but it is the same as No 22 of the 2006 permission. No 20 as proposed would be improved if details were required,

as I suggest, of the reinstatement to agricultural use. This would not conflict with the existing permission.

- 8.15. With the alterations indicated, the conditions would pass the tests in Circular 11/95 and they would be compatible with those in the 2006 permission for the landfilling of hazardous waste.
- 8.16. I refer to the S106 Agreement (PA9) in my conclusions (report paras 7.66, 7.87 and 7.94) and I have nothing to add.

9. Recommendation
(File Ref: APP/K2800/A/10/2126938)

- 9.1. I recommend that the appeal be allowed and planning permission be granted for the landfill disposal of low level radioactive waste in Phases 4B, 5A and 5B of the currently permitted hazardous waste landfill at the East Northants Resource Management Facility, Northamptonshire subject to conditions as set out in Appendix A below.

K G Smith

Appendix A - Planning Conditions and Schedule of Approved Plans

1. The development to which this permission relates must be begun not later than the expiration of one year beginning with the date of this permission.
2. The development hereby permitted shall be carried out in accordance with the approved plans and documents listed in Schedule 1. The landfilling of low level radioactive waste shall be restricted to cells 4B, 5A and 5B as shown on the submitted plan Drawing No. AU/LL/04-09/15005revA dated 16 July 2009.
3. No materials shall be imported and deposited on the site other than radioactive waste comprising solid radioactive waste up to a maximum specific activity of 200Bq/g (Low Level Waste) and existing permitted hazardous wastes together with inert waste materials used for restoration purposes.
4. No materials shall be imported and deposited on the site other than hazardous waste, low level radioactive waste and inert waste materials used for restoration purposes. The total amount of waste materials imported per annum shall not exceed 249,999 tonnes.
5. Except as may be otherwise agreed in writing by the Waste Planning Authority, finished ground levels shall be in accordance with the submitted Proposed Finished Contour Plan Drawing No. D107125_LV_00IE, Figure 8.6 (Landscape Restoration Master Plan) dated April 2005.
6. The sole vehicular access for the development hereby permitted shall be by way of the existing access to the site on to the Stamford Road.
7. Except as may otherwise be agreed in writing by the Waste Planning Authority, upon completion of the tipping operations, or by the 31st August 2013, whichever is the sooner, the vehicular access shall be reinstated to its former condition as an agricultural access, in accordance with a scheme to be submitted to and agreed in writing by the Waste Planning Authority.
8. Vehicular traffic associated with this development shall be controlled as follows:
 - a. The operator shall ensure that all commercial vehicles entering and leaving the site shall travel direct to and from the A47 Trunk Road via Stamford Road north of the access point with no such vehicles travelling along Stamford Road towards King's Cliffe village south of the site access point.
 - b. Prior to the acceptance of low level radioactive waste at the site, signs informing vehicle drivers of the requirements in a) above shall be erected and maintained in a visible location near to the egress on site in accordance with details to be submitted to and agreed in writing by the Waste Planning Authority.
 - c. Prior to the acceptance of low level radioactive waste at the site, facilities shall be provided in accordance with details to be submitted to

and approved in writing by the Waste Planning Authority for site operatives within the site to observe the direction of vehicle entry to and exit from the site.

9. Except as may otherwise be agreed in writing by the Waste Planning Authority, the access and site reception facilities including the internal haul road, office and weighbridge, shall be as identified on Drawing Ref AU/LL/04-09/15005revA.
10. Prior to the acceptance of low level radioactive waste at the site, wheel cleaning facilities shall be provided on site, with appropriate drainage, in accordance with details to be submitted to and approved in writing by the Waste Planning Authority and these facilities shall thereafter be retained and maintained. The wheels of all vehicles leaving the site shall be cleansed of mud and other debris to prevent mud being carried onto the highway.
11. A scheme for site security measures around the complete boundary of the East Northants Resource Management Facility, as shown on the submitted plan Drawing No. AU/LL/04-09/15005revA dated 16 July 2009, shall be submitted to the Waste Planning Authority for approval in writing. The scheme shall include measures for security fencing and warning signs. The scheme, as approved in writing, shall be implemented prior to the importation of low level radioactive waste and be maintained throughout the life of the operations at the site and beyond until the Waste Planning Authority, in consultation with the Environment Agency, determines and confirms in writing that the site security measures are no longer required. Thereafter, any fences erected under the terms of this condition shall be removed within a period of 3 months.
12. Except as may otherwise be agreed in writing by the Waste Planning Authority, all waste disposal, site preparation, levelling and restoration operations and any associated activities shall be restricted to between the hours of 07.00 and 18.00 on Mondays to Fridays and 07.00 and 13.00 on Saturdays, with no such operations being carried out on the site on Sundays or Public Holidays.
13. The infilling operations hereby permitted shall be carried out progressively and in a phased and orderly manner in accordance with Drawing reference AU/LL/04-09/15005 Rev A submitted as part of the planning application.
14. Dust, particulates and odour mitigation shall be undertaken in accordance with the scheme of measures approved by the Waste Planning Authority in writing in connection with the planning permission for hazardous waste disposal reference EN/05/1264C.
15. Noise mitigation shall be undertaken in accordance with the scheme of measures approved in writing by the Waste Planning Authority in connection with the planning permission for hazardous waste disposal reference EN/05/1264C.
16. All plant, equipment and machinery used on site shall be designed and maintained to reduce noise levels to a minimum and shall be operated in accordance with manufacturers' instructions. All plant, equipment and

machinery used on site, including vehicular traffic, which is capable of being fitted with the appropriate silencers, baffles, cladding and rubber linings shall be so fitted and maintained.

17. Any facilities, above ground, for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bunded compound shall be at least equivalent to the capacity of the tank plus 10%. All filling points, vents, gauges and sight glasses must be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipe work shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge into the bund.
18. The strategy for surface water drainage shall be implemented fully in accordance with the scheme approved in writing by the Waste Planning Authority in connection with the planning permission for hazardous waste disposal reference EN/05/1264C.
19. Except as may otherwise be agreed in writing by the Waste Planning Authority, the areas filled in accordance with the conditions of this permission shall be progressively restored in accordance with Drawing Number D107125-LV-001E and the final layer of the filled area in each phase shall be progressively covered as filling proceeds to a depth of not less than 1.3 metres. This cover shall comprise the following:
 - a. A low permeability engineered cap, covered by;
 - b. An agricultural cap of not less than 1 metre depth. The agricultural cap shall be kept free of materials likely to interfere with final restoration or subsequent cultivation, and not less than the top 300mm depth of this covering shall be composed of the topsoil stripped and stored in accordance with the approved restoration scheme and other suitable imported topsoil or subsoil capable of being cultivated. The remaining covering material shall comprise the subsoil and overburden stripped and stored on site in accordance with the approved restoration scheme and other imported subsoil and overburden as may be necessary. The topsoil, subsoil and overburden shall be placed and spread in their correct sequence. Prior to the spreading of topsoil in each phase the subsoil shall be ripped (rooted) to relieve compaction and all stones or other objects which would impede subsequent cultivation shall be removed.
20. Details of a scheme for ditches, fences, hedges, gates, field drains or water supplies required for good husbandry shall be submitted to and approved in writing by the Waste Planning Authority and shall be provided during and following restoration of the land and on its reinstatement to agricultural use.
21. Except as may otherwise be agreed in writing by the Waste Planning Authority, within three months of the completion of filling and covering of each phase in accordance with the approved restoration scheme, the area shall be prepared and sown with an appropriate grass seed mixture to establish a long term ley.

In any part of the site where differential settlement occurs during the restoration and aftercare period, the applicant, where required by the Waste Planning Authority, shall fill the depression with suitable soils, to a specification to be agreed in writing by the Waste Planning Authority.

22. Notwithstanding the provisions of the Town and Country Planning (General Permitted Development) Order 1995 (or any order revoking and re-enacting that Order with or without modification) no building, structure or fixed plant shall be erected, extended, installed, rearranged, repaired, altered in any way or replaced on the site without the prior agreement in writing of the Waste Planning Authority.
23. Copies of reports relating to all environmental monitoring, including post closure monitoring, which are required to be submitted to the Environment Agency in connection with the Radioactive Substances Environmental Permit, shall be copied at the same time to the Waste Planning Authority and the East Northamptonshire Council Environmental Protection Officer.
24. The operators of the site shall provide to the Waste Planning Authority detailed information in writing on the quantities by weight, types and deposition locations of low level waste brought on to the site for disposal. The information shall be provided not later than the last day in February for the preceding calendar year and copied at the same time to the East Northamptonshire Council Environmental Protection Officer.
25. The operating company shall keep records of the quantity of low level waste received by weight and its source for each calendar year and these records shall be provided to the Waste Planning Authority within 21 days of a written request. Any identified commercially sensitive data supplied will be treated on a confidential basis.
26. A copy of the terms of this permission, shall be displayed on site, and all documents hereby permitted and any documents subsequently approved in accordance with this permission (or amendments approved pursuant to this permission) shall be available at the site office and shall be made known to any person given responsibility for the management or control of operations on the site.
27. Unless the Waste Planning Authority otherwise agrees in writing, any building, plant, machinery, foundation, hardstanding, roadway, structure or erection in the nature of plant or machinery used in connection with the development hereby permitted shall be removed from the site when they are respectively no longer required for the purpose for which they were installed and in any case not later than 31st August 2013 (two thousand and thirteen) and upon their removal the land shall be restored in accordance with the agreed restoration scheme by the date referred to in condition 28 of this permission.
28. The development hereby permitted shall cease not later than 31st August 2013 (two thousand and thirteen) by which time the land and the access shall be restored or reinstated in accordance with conditions of this permission.
29. Except as may otherwise be agreed by the Waste Planning Authority, not later

than the completion of infilling operations in accordance with plan D107 25-101 -1007 RevP5, figure 2.1, a five year outline strategy of aftercare shall be submitted to the Waste Planning Authority for approval in writing. The five year outline strategy of aftercare, as may be approved by the Waste Planning Authority in writing, shall be implemented during the five year period following its approval.

Schedule 1 – List of Approved Documents

Volume 1 – PLANNING APPLICATION (Including the following documents)	
Application Forms	
Design and Access Statement	
Figures	
AU/LL/04-09/15003revA	The site location
AU/LL/04-09/15005revA	The current site layout and the application boundary

Volume 2 – ENVIRONMENTAL STATEMENT	
Environmental Statement	Introduction Section 4.
Part I The Proposed Development	Sections 6, 7, 8, and 9.

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(Hons) MRTPI, DMS

Development Control Manager, NCC

FOR KING'S CLIFFE WASTEWATCHERS Rule 6 party:

Mr C Leuchars and Mrs L
Bowen-West

He or she called:

Mr C Leuchars

Professor Dr Christopher

Busby PhD

Member of Wastewatchers and local resident

Expert on the health effects of low dose radiation

INTERESTED PERSONS:

Ms Louise Bagshawe MP
Co Cllr Heather Smith

MP for Corby and East Northamptonshire
Prebendal Division, Cabinet Member for
Highways, Minerals and Waste, NCC

Professor R. Johnson

Retired Professor of Contemporary History and
Culture, Co-Chair Leicester CND, Convenor East
Midlands CND, and East Midlands representative
on CND National Council. Spoke as an interested
person.

Mrs Jane Rose

Resident of King's Cliffe

Dr. Geoff Mason BSc MSc PhD

Consultant Hydrogeologist and resident of King's
Cliffe

Ms Rachel McCrone

Resident of Laxton

Mrs Clare Langan

Resident of King's Cliffe and member of
Wastewatchers

Dr. Brian Cromie

Resident of Kings's Cliffe

Ms Jenny Groves

Resident of King's Cliffe

Mr Matthew Kirk

Basket maker and resident of King's Cliffe

Mrs Carol Randall

Resident of King's Cliffe

Miss Melanie McCall

Resident of Glapthorn

Peter Chivall,

Vice Chair, ProFoRWM Peterborough, retired
teacher of science and technology

Ms Fiona Radic	Resident of Peterborough and member of Green Party
Mr Robert Meadows	Resident of King's Cliffe
Mr Robin Gifford	Resident of Apethorpe
Mr Richard Olive	Peterborough Friends of the Earth
Borough Cllr Mary Butcher	Corby Borough Council
Mr Andrew Howard	Managing Director of P C Howard Ltd, Chairman of King's Cliffe Parish Council, School Governor, resident of King's Cliffe
Dr Peter Lloyd Bennett	Transition King's Cliffe, Resident of King's Cliffe

DOCUMENTS

Reference	Document Description
Documents submitted by the Appellant (A)	
A1	Statement of Case of Augean PLC. 12 July 2010.
A2	Augean PLC – East Northants Resource Management Facility Appeal. 16 April 2010.
A3	Letter to Phil Watson, Northamptonshire County Council from Claire Brook, Dickinson Dees requesting clarification on reasons for refusal. 13 April 2010.
A4	Letter to Phil Watson, Northamptonshire County Council from Claire Brook, Dickinson Dees requesting further clarification on third reason for refusal. 2 June 2010.
A5	Letter to Ms Evans, Planning Inspectorate from Claire Brook, Dickinson Dees regarding clarification of flood risk assessment. 27 July 2010.
A6	Letter to Ms Evans, Planning Inspectorate from Claire Brook, Dickinson Dees regarding Council's Supplementary Statement of Case. 31 August 2010.

AUG 1.1	Summary Proof of Evidence of Roger Miles.
AUG 1.2	Proof of Evidence of Roger Miles.
AUG 1.3	Appendices to the Proof of Evidence of Roger Miles.
AUG 2.1	Summary Proof of Evidence of Leslie Heasman
AUG 2.2	Proof of Evidence of Leslie Heasman
AUG 2.3	Appendices to the Proof of Evidence of Leslie Heasman
AUG 2.4	Note Prepared by Leslie Heasman in relation to AP15.29 (Superseded)
AUG2.4A	Corrected version of AUG2.4
AUG2.5	Note on waste characterisation
AUG2.6	Note relating to AP15.5A and AP15.7A
AUG 3.1	Summary Proof of Evidence of Gene Wilson
AUG 3.2	Proof of Evidence of Gene Wilson
AUG 3.3	Appendices to the Proof of Evidence of Gene Wilson
AUG 4.1	Summary Proof of Evidence of Richard Wakeford
AUG 4.2	Proof of Evidence of Richard Wakeford
AUG 4.3	Appendices to the Proof of Evidence of Richard Wakeford
AUG 4.4	Additional Appendix to Richard Wakeford's Proof of Evidence – Dr. J. Valentin Response to Dr. Busby's Proof
AUG 5	Opening Statement
AUG 6	Closing Submissions

Reference	Document Description
Documents submitted by Northamptonshire County Council (NCC)	
NCC1	Statement of Case of Northamptonshire County Council. 12 July 2010.
NCC2	Completed questionnaire from Northamptonshire County Council received by Pins on 13 May 2010.
NCC3	Letter to Claire Brook, Dickinson Dees from Phil Watson, Northamptonshire County Council providing comments on reasons for refusal. 14 May 2010
NCC4	Email to Claire Brook, Dickinson Dees from Phil Watson, Northamptonshire County Council providing comments on BAT evidence. 2 July 2010.
NCC5	Supplementary Statement of Case of Northamptonshire County Council
NCC6	NCC6 Letter to Ms Evans, Planning Inspectorate from Head of Corporate Governance, Northamptonshire County Council 16 September 2010 providing a response to the letter dated 31 August 2010 from Dickinson Dees.

NCC 6.1	Proof of Evidence of Councillor Ben Smith
NCC 6.2	Summary Proof of Evidence of Councillor Ben Smith
NCC 6.3	Withdrawn
NCC 7.1	Summary Proof of Evidence of Simon Aumônier
NCC 7.2	Proof of Evidence of Simon Aumônier
NCC 7.3	Appendices to the Proof of Evidence of Simon Aumônier
NCC 7.4	Rebuttal Proof of Evidence of Simon Aumônier
NCC 7.5	Response to letter from RSRL Dated 4 th November (as contained in OD67) by Simon Aumônier
NCC 7.6	Response to Dr. Wilson's Comparison of Alleged 'Specialist' Characteristics of Waste Sites (AUG 3.3 (19)) by Simon Aumônier
NCC 8.1	Summary Proof of Evidence of Ray Kemp
NCC 8.2	Proof of Evidence of Ray Kemp
NCC 8.3	Appendices to the Proof of Evidence of Ray Kemp
NCC 8.4	Ordered Analysis of Risk Perception Factors in Issues Raised in the Consultation Responses
NCC 8.5	Analysis of Risk Perception Factors in Issues Raised in the Consultation Responses
NCC 9	Opening Statement
NCC 9.1	High Court Judgement to Accompany Opening Statement – Mageean v DCLG 28 th July 2010
NCC10	Closing Submissions

Reference	Document Description
Documents submitted by King's Cliffe Wastewatchers (WW)	
KCWW1	Statement of Case of King's Cliffe Wastewatchers. 2 September 2010.
KCWW 1.1	Summary Proof of Evidence of Chris Leuchars
KCWW 1.2	Proof of Evidence of Chris Leuchars
KCWW 1.3	Low, Nicholas. Global Ethics and Environment, Routledge 2002 p 76
KCWW 1.4	Suffolk County Council, MWDF, Waste Core Strategy, Submission Draft, Policy WCS19, p52
KCWW 1.5	Defra and Nuclear Decommissioning Authority, March 2008, Radioactive Wastes in the UK, A Summary of the 2007 Inventory
KCWW 1.6	Institute for Energy and Environmental Research, Science for Critical

	Masses, Radiation Protection
KCWW 1.7	Updated Proof Incorporating Core Document Cross References
KCWW 2.1	Summary Proof of Evidence of Chris Busby
KCWW 2.2	Proof of Evidence of Chris Busby
KCWW 2.3	Withdrawn
Documents referred to by Dr Chris Busby and provided by Wastewatchers	
CBCD 1	Chernobyl Ecology Contamination. VK Savchenko
CBCD 2	Radiation Risks – Windscale Experience
CBCD 3	Lesvos Declaration. 6 th May 2009
CBCD 4	Stockholm Interview. Valentin / Busby
CBCD 5	European Committee on Radiation Risk Assessment
CBCD 6	US Environmental Protection Agency. Soil Contamination Data (tools)
CBCD 7	Safegrounds Network. Contaminated Land / Health Risks. July 2005
CBCD 8	Response A – LLRC Consultation (Part 6)
CBCD 9	Cerrie Minority Report 2004. Extract pp 25 – 62
CBCD 10	German Childhood Leukaemia Study Extracts
CBCD 11	CoRWM Alert to UK Govt. Uncertainties in Radiological Impact on Human Health 2007
CBCD 12	Unused
CBCD 13	European Radiation Risks Extracts pp 63 – 106 (2010)
CBCD 14	European Radiation Risks Extracts pp 151 – 156 (2010)
CBCD 15	CoRWM. Views of Low Level Radiation Campaign
CBCD 16	Research Report. North Sweden Cancer Incidence
CBCD 17	European Committee on Radiation Risk. Busby / Yablokov (book)
CBCD 18	Kings Cliffe: Gas / Water Vapour Dispersion model
CBCD 19	Nuclear Pollution and Human Health. ‘Wings of Death’ (book)
CBCD 20	UNSCEAR. Kings Cliffe – ICRP Models / Reports. Pp 58 – 80
KCWW 3	Opening Statement
KCWW 4	Closing Statement
KCWW 5	Wastewatchers’ Comments on Conditions

Reference	Document Description
Planning application documents (PA)	
PA1	Augean PLC. July 2009. An Application for Planning Permission for the Landfill Disposal of Low Level Radioactive Waste in Phases 4B, 5A and 5B of the currently permitted hazardous waste landfill at the East Northants Resource Management Facility, Northamptonshire. Volume 1 Report reference AU/LL/MM/1517/01Application.
PA2	Augean PLC. July 2009. Environmental Statement To accompany an Application for Planning Permission for the Landfill Disposal of Low Level Radioactive Waste in Phases 4B, 5A and 5B of the currently permitted Hazardous Waste Landfill at the East Northants Resource Management Facility, Northamptonshire. Volume 2. Report reference AU/LL/MM/1517/03ES.
PA3	E-mail from Gene Wilson of Augean to Phil Watson of Northamptonshire County Council providing comments on the issue of prematurity. 28 July 2009.
PA4	E-mail from Phil Watson of Northamptonshire County Council to Gene Wilson of Augean providing independent expert questions from Tony Denman. 15 December 2009.
PA5	Letter from Leslie Heasman of MJCA to Phil Watson of Northamptonshire County Council providing the responses to the independent expert questions from Tony Denman. 5 January 2010.

PA6	E-mail from Phil Watson of Northamptonshire County Council to Leslie Heasman of MJCA providing comments by the Highway Authority together with a letter response from Leslie Heasman of MJCA to Phil Watson of Northamptonshire County Council dated 12 March 2010.
PA7	Letter from Leslie Heasman of MJCA to Phil Watson of Northamptonshire County Council providing a summary of the representations received together with responses on each of the objections to the planning application. 3 December 2009.
PA8	Letter from Phil Watson of Northamptonshire County Council to Gene Wilson of Augean confirming that the application was considered to be valid as of 4 August 2009. 10 August 2009.
PA9	Northamptonshire County Council and Augean South Ltd S106 Agreement dated 5 November 2010..
PA10	Northamptonshire County Council. 13 August 2009. East Northants Resource Management Facility, Stamford Road, Northamptonshire Site Notice and Press Notice.
PA11	Northamptonshire County Council. 25 March 2010. Decision Notice.
PA12	Northamptonshire County Council. 16 March 2010. Chief Planning Officers report to the Development Control Committee.
PA13	Northamptonshire County Council. 26 th February 2010. Development Control Committee Training Day Agenda and Copy of Presentations
PA14	Northamptonshire County Council. 16 th March 2010. Minutes from the Development Control Committee
PA15	Draft Planning Conditions and Schedule of Approved Plans
PA15A	Updated Draft of Planning Conditions and Schedule of Approved Plans. 12 th November 2010

Reference	Document Description
Appeal documentation (AP)	
AP1	Appeal third party representations provided by Pins to 21 st October 2010.
AP2	Statement of Common Ground. 13 July 2010.
AP3	Planning Application third party representations up to November 2009
AP4	Planning Application Statutory Consultee responses
AP5	Planning Application third party representations March 2010.
AP6	Transcript of Northamptonshire County Council Development Control Committee meeting 16 March 2010
AP7	Note following pre-inquiry meeting held on 22 July 2010.
AP8	Letter from Pins to Appellant regarding the site notice. 3 September 2010
AP9	Site Notice
AP10	Minutes of Northamptonshire County Council Development Control Committee Meeting 27 th July 2010
AP11	Attendance Lists
AP12	Notification of Recovery from Pins dated 27 th April 2010
AP13	Suite of Correspondence concerning Statements of Case (Dickinson Dees 31 st August 2010, NCC 16 th September 2010, Planning Inspectorate 1 st October 2010)
AP14	Table of All Third Party Representations to the Proposed Development (Pre 22 nd October 2010)
AP15	Third Party Representations to the Proposed Development (22 nd October 2010 onwards) Updated 23rd November 2010
AP16	King's Cliffe Petition. March 2010

Reference	Document Description
Planning policy documents (PP)	
PP1	Withdrawn
PP2	DEFRA. March 2007. Policy for the Long Term Management of Solid Low Level Radioactive Waste in the UK.
PP3	Planning Policy Statement 1 (PPS 1) Delivering Sustainable Development. 2005. ODPM. HMSO. London.
PP4	Planning Policy Statement 9 (PPS 9) Biodiversity and Geological Conservation. 2005. ODPM. HMSO. London.
PP5	Planning Policy Statement 10 (PPS 10) Planning for Sustainable Waste Management. 2005.
PP5A	Extract from Planning Policy Guidance Note 10: Planning and Waste Management September 1999
PP6	Planning Policy Statement 23 (PPS 23) Planning and Pollution Control. 2004. ODPM. HMSO. London.
PP6A	Planning Policy Statement 23 (PPS 23) Planning and Pollution Control. 2004. ODPM. HMSO. London. Annex 1: Pollution Control, Air and Water Quality
PP7	Government Office for the East Midlands. March 2009. The East Midlands Regional Plan.
PP7A	Letter to Chief Planning Offices Dated 10 th November re Abolition of Regional Strategies and the High Court Decision in Relation to Cala Homes
PP8	Northamptonshire County Council. March 2001. The Northamptonshire County Council Structure Plan as amended by the High Court in February 2002.
PP9	Northamptonshire County Council. March 2006. The Northamptonshire Waste Local Plan.
PP10	North Northamptonshire Joint Planning Unit. June 2008. The North Northamptonshire Core Spatial Strategy.
PP11	East Northamptonshire Council. November 1996. The East Northamptonshire District Local Plan.
PP12	Note to Northamptonshire County Council by the Inspector examining the Core Strategy Submission for the Northamptonshire Minerals and Waste Development Framework LIBRARY DOC811. 8 April 2009.
PP13	Local Government Association. 2008. Position Statement on Low Level Radioactive Wastes.
PP14	Northamptonshire County Council. June 2006. Northamptonshire Minerals and Waste Development Framework. Statement of Community Involvement.
PP15	Northamptonshire County Council. May 2010. Northamptonshire Minerals and Waste Development Framework. Core Strategy Development Plan Document.
PP16	Planning Circular 02/99: Environmental Impact Assessment. 12 March 1999. ODPM. HMSO. London.
PP17	Draft National Policy Statement for Nuclear Generation. November 2009. DECC. The Stationary Office. London.
PP18	Northamptonshire County Council. January 2009. Proposals Map Proposed Submission. Minerals and Waste Development Framework Development Planning Document.
PP19	Northamptonshire County Council. May 2010. Control and Management of Development Proposed Submission. Minerals and Waste Development Framework Development Plan Document.

Reference	Document Description
PP20	Northamptonshire County Council. March 2010. Locations for Waste Development. Minerals and Waste Development Framework Development Planning Document.
PP21	The Planning System: General Principles. 2005. ODPM. HMSO. London.
PP22	DEFRA. March 2007. Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom. Summary of comments and Government response.
PP23	Department for Communities and Local Government, Planning and Sustainable Waste Management: Companion Guide to Planning Policy Statement 10.
PP24	Department of Energy and Climate Change, UK Strategy for Radioactive Discharges, July 2009.
PP25	Northamptonshire County Council, October 2007. Preferred Options. Minerals and Waste Development Framework Development Planning Document
PP26	Northamptonshire County Council, January 2009. Proposed submission Locations for Waste Development. Minerals and Waste Development Framework Development Planning Document.
PP27	Responses to the Locations for Waste Developments Preferred Options December 2007.
PP28	Defra. 2010. Environmental Permitting Guidance, Radioactive Substances Regulation March 2010 v1.1
PP29	East Midlands Regional Waste Strategy 2006
PP30	Chief Planning Officers Letter. CLG. 6 th July 2010
PP31	Direction of Secretary of State regarding saved polices of the Northamptonshire Waste Local Plan including schedule 5 March 2009
PP32	Control and Management of Development – Development Plan Document Submission – August 2010
PP33	Extract from PPG8 Telecommunications. October 2001

Reference	Document Description
National strategy documents (NS)	
NS1	DEFRA. 2007. The Waste Strategy for England.
NS2	Nuclear Decommissioning Authority. June 2009. UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry: Strategic Environmental Assessment. Non-Technical Summary of Environmental and Sustainability Report.
NS3	Commission of the European Communities. February 2000. Communication from the Commission on the precautionary principle. COM(2000) 1 final.
NS4	Department of the Environment, Transport and the Regions. May 1999. A Better Quality of Life.
NS5	DEFRA. March 2005. Securing the Future.
NS6	Nuclear Decommissioning Authority and LLWR. January 2009. LLW Strategic Review. Issue 1.
NS7	Nuclear Decommissioning Authority. June 2009. UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry: UK Nuclear Industry LLW Strategy. Consultation Document.
NS8	DEFRA and Nuclear Decommissioning Authority. March 2008. The 2007 UK Radioactive Waste Inventory. Main Report.
NS9	Nuclear Decommissioning Authority. October 2008. LLW Strategic Review Summary.
NS10	Atkins. January 2009. Sustainability Appraisal of the Non-Nuclear Industry

Reference	Document Description
National strategy documents (NS)	
	Radioactive Waste Strategy. Scoping Report.
NS11	Department of the Environment NI. 2006. Northern Ireland Waste Management Strategy 2006 – 2020.
NS12	SEPA. 2003. The National Waste Plan for Scotland.
NS13	Radioactive Waste Management Advisory Committee. 2003. Advice to Ministers on Management of Low Activity Solid Radioactive Wastes.
NS14	Withdrawn
NS15	LLW Repository and Nuclear Decommissioning Authority. 2009. The National LLW Management Plan.
NS16	Nuclear Decommissioning Authority. June 2009. UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry: Strategic Environmental Assessment.
NS17	UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry 2010
NS17A	Emails Confirming Approval for Publication of The UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry
NS18	Draft UK Strategy for the Management of Solid Low Level Radioactive Waste from the Non-Nuclear Industry. July 2010
NS18A	Updated Draft UK Strategy for the Management of Solid Low Level Radioactive Waste from the Non-Nuclear Industry. October 2010
NS19	Nuclear Decommissioning Authority: The UK Strategy for the Management of Solid Low Level Radioactive waste from the Nuclear Industry: Post adoption Strategic Environmental Assessment – August 2010
NS20	Defra, Rural Strategy, 2004.
NS21	LLW Repository Ltd, Compendium of Strategic Technical Briefs vol. 1, March 2009.
NS22	LLW Repository Ltd, Compendium of Strategic Technical Briefs vol. 2, November 2009.
NS23	LLW Repository Ltd, LLW Topical Strategies Summary, October 2008.
NS24	Magnox South, Integrated Waste Strategy, 2009.
NS25	Northamptonshire County Council Cabinet, Report by Director for Community Leadership, 10 September 2007.
NS26	DEFRA. 2005. Changes to Waste Management Decision Making Principles in Waste Strategy 2000

Reference	Document Description
International and European Directives and Conventions (INT)	
INT1	OSPAR Commission. 1992. The Convention for the Protection of the marine Environment of the North-East Atlantic – The OSPAR Convention.
INT2	EC. 1996. Council Directive 96/29/EURATOM of 13 May 1996 laying down basic safety standards for the protection of the health workers and the general public against the dangers arising from ionizing radiation. Official journal NO. L 159 , 29/06/1996 p. 0001 – 0114.
INT3	EC. 1985. Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects on certain public and private projects on the environment. Official journal No L175, 05/07/1985 p 0040-0048
INT4	EC. 1997. Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects on certain public and private projects on the environment. Official journal No. L703, 14/03/1997 P.0005
INT5	EC. 1957. Treaty establishing the European Atomic Energy Community (Euratom). Article 37.

INT6	EC. 2006. Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration. Official Journal Number L372, 27/12/2006, p19-31.
INT7	European Commission, Amended Proposal for a Council Directive (Euratom), Sept 2004.
INT8	European Commission, Towards Inclusive Risk Governance, TRUSTNET 2, 2004.
INT9	European Union, Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the Environment.
INT10	EEC, Council Directive of 15 July 1975 on waste (75/442/EEC)
INT11	EC. 1999. Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste.
INT12	EC. 2008. Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control
INT13	EC. 2008. Council Directive of 19 th November 2008 on waste and repealing certain Directives

Reference	Document Description
UK Legislation (UK)	
UK1	Conservation (Natural Habitats and Conservation) Regulations 1994.
UK2	The Environmental Protection Act 1990.
UK3	Environmental Permitting (England and Wales) Regulations 2010.
UK4	Environmental Permitting Regulations 2007.
UK5	Not currently assigned as previously duplicated with UK3
UK6	Hazardous Waste Regulations 2005.
UK7	Ionising Radiations Regulations 1999 Approved Code of Practice.
UK8	Nuclear Safeguards Act 2000.
UK9	Planning Act 2008.
UK10	Planning and Compulsory Purchase Act 2004.
UK 11	Withdrawn
UK12	Radioactive Substances Act 1993.
UK13	The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004 as amended.
UK14	The Ionising Radiation Regulations 1999.
UK15	The Landfill Regulations 2002 (as amended 2004 and 2005).
UK16	The Pollution, Prevention and Control Regulations 2000.
UK17	The Radioactive Material (Road Transport) Regulations 2002 as amended.
UK18	Withdrawn
UK19	The Town and Country Planning (Consultation) (England) Direction 2009.
UK20	The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999

Reference	Document Description
Health Protection Agency technical documents (HPA)	
HPA1	Health Protection Agency. 2009. Radiation Protection Objectives for the Land Based Disposal of Solid Radioactive Wastes.
HPA2	Health Protection Agency. 2005. Ionising Radiation Exposure of the UK Population: Review. HPA-RPD-001.
HPA3	Health Protection Agency. 2007. Radiological Assessment of Disposal of Large Quantities of Very Low Level Waste in Landfill Sites. HPA-RPD-020.

HPA4	ENRMF, IRRs 1991. Radiation Risk Assessment for LLW. Health Protection Agency March 2009.
HPA5	Health Protection Agency. February 2009. Radiation Protection Objectives for the Land-Based Disposal of Solid Radioactive Wastes RCE -8.
HPA6	Health Protection Agency. 2008. Guidance on the Application of Dose Coefficients for the Embryo, Foetus and Breastfed Infant in Dose Assessments for members of the Public.
HPA7	Withdrawn
HPA8	Health Protection Agency. 2009. An introduction to the Estimation of Risks Arising from Exposure to Low Doses of Ionising Radiation. HPA-RPD-055.
HPA9	Health Protection Agency. 2010. Risks from Ionising Radiation. HPA-RPD-066.
HPA10	Health Protection Agency. July 2009. Application of the 2007 Recommendations of the ICRP to the UK RCE-12.
HPA11	Health Protection Agency. April 2009. Response to Comments Received during the Consultation on Proposed HPA Advice on Radiological Protection Objectives for the Landbased Disposal of Solid Radioactive Waste. HPA-RPD-052.
HPA12	Health Protection Agency. September 2009. Response to Comments Received during the Consultation on Proposed HPA. Advice on the Application of ICRP's 2007 Recommendations to the UK. HPA-RPD-057.
HPA13	Health Protection Agency. 15 th October 2010. Response to Evidence of Dr. C. Busby
HPA14	Health Risk Perception and Environmental Problems: Findings from Ten Case Studies in the North West of England

Reference	Document Description
Environment Agency technical documents (EA)	
EA1	Environment Agency. 2008. Disposing of Radioactive Waste to Landfill. Guidance Note.
EA2	Environment Agency. Undated. Briefing note. Disposal of Low Level Radioactive Waste to landfill. Questions and Answers.
EA3	Environment Agency. February 2009. Near-surface Disposal Facilities on Land for Solid Radioactive Wastes Guidance on Requirements for Authorisation.
EA4	Environment Agency. December 2005. Considerations for Radioactive Substances Regulation under the Radioactive Substances Act 1993 at Nuclear Sites in England and Wales.
EA5	Environment Agency. 2006. Initial Radiological Assessment Methodology – Part 1 User Report. Environment Agency Science Report, SC030162/SR Part 1.
EA6	Environment Agency. 2006. Initial Radiological Assessment Methodology – Part 2 Methods and Input Data. Environment Agency Science Report, SC030162/SR Part 2.
EA7	Environment Agency. 2010. RSR 1: Radioactive Substances Regulation – Environmental Principles V2.
EA8	Environment Agency. December 2005. Process and Information Document for: Applications for New Authorisations; Issued under the Radioactive Substances Act 1993 to Nuclear Sites in England and Wales. Version 1.
EA9	Environment Agency. 19 February 2010. Explanatory Document and Draft authorisation. Consultation on the application by Augean South Limited under the Radioactive Substances Act 1993 to dispose of radioactive waste at East Northants Recycling Materials Facility, Stamford Road, Kings Cliffe, Northamptonshire, PE8 6XX.

EA10	Environment Agency. 2001. Copplestone, D. <i>et al.</i> Impact assessment of ionising radiation on wildlife. Environment Agency R&D Publication 128.
EA11	Withdrawn
EA12	Environment Agency. 2004. Guidance for the Environment Agencies' Assessment of Best Practicable Environmental Option Studies at Nuclear Sites.
EA13	Environment Agency.2009. Radioactive Substances Regulation: Assessment of Best Available Techniques (BAT).
EA14	Environment Agency, Radioactive Substances Regulation Environmental Principles Assessment Guide No 1 Assessment of Best Available Techniques (BAT) Consultation Draft, June 2008.

Reference	Document Description
Scotland and Northern Ireland Forum for Environmental Research (SNIFFER) Technical Documents (S)	
S1	SNIFFER. November 2007. Dose Implications of Very Low Level Radioactive Waste Disposal. UKRSR09.
S2	SNIFFER. 2006. Development of a framework for assessing the suitability of controlled landfills to accept disposals of solid low level radioactive waste. Principles Document.
S3	SNIFFER. 2006. Development of a framework for assessing the suitability of controlled landfills to accept disposals of solid low level radioactive waste. Technical Reference Manual.
S4	SNIFFER. 2005. UKRSR05: BPM for the Management of Radioactive Waste.
S5	SNIFFER. 1999. Communicating Understanding of Contaminated Land Risks
S6	SNIFFER. March 2005. UKRSR07. Summary guidance. Identification and Assessment of Alternative Disposal Options for Radioactive Oilfield Wastes
S7	Withdrawn
S8	SNIFFER 2010 Communicating Understanding of Contaminated Land Risks

Reference	Document Description
International Commission on Radiological Protection reports (ICRP)	
ICRP1	Withdrawn
ICRP2	Withdrawn
ICRP3	Withdrawn
ICRP4	ICRP. 2005. Low-dose Extrapolation of Radiation-related Cancer Risk. Annals of the ICRP. V35, Issue 4, p1-142.
ICRP5	Withdrawn
ICRP6	Withdrawn
ICRP7	ICRP 1998 Radiation Protection Recommendations as applied to the disposal of long-lived radioactive waste: ICRP Publication 81
ICRP8	Withdrawn
ICRP9	ICRP. 2007. The 2007 Recommendations of the International Commission on Radiological Protection. ICRP Publication 103.

Reference	Document Description
Other technical documents (T)	
T1	Scottish Environmental Protection Agency and Galson Sciences Limited. 2000. Tritium in Scottish Landfill Sites.
T2	Allen, D.J. <i>et al.</i> , 1997. The physical properties of major aquifers in England and Wales. British Geological Survey. Technical Report WD/97/34, Environmental Agency R&D Publication 8.
T3	Augean South Ltd. June 2005. East Northants Resource Management Facility, Environmental Statement, Bullen Consultants.
T4	DEFRA. May 2009. Environmental Permitting Guidance Radioactive Substances Regulation, Draft Guidance for Consultation.
T5	Withdrawn
T6	UK Atomic Energy Authority. Safety Assessment Handbook. Sections D2 and D5. February 2008'
T7	Hansard. 1980. Wisbech (Air Crash). HC Deb 15 January 1980 vol 976 cc686A-D W.
T8	Air Accident Investigation Board. 1988. Aircraft Accident Report N/90 (EW/C1094). Report on the accident to B747-121, N739PA, Lockerbie.
T9	Environmental Simulations International Ltd. (ESI). 2004. Hydrogeological Risk Assessment and risk based monitoring scheme: King's Cliffe Landfill. Report reference: 6490R3rev1.
T10	International Atomic Energy Agency. 2003. Derivation of Activity Limits for the Disposal of Radioactive Waste in Near Surface Disposal Facilities. IAEA-TENSOC-1380. ISBN 92-0-113003-1.
T11	International Atomic Energy Agency. 1997. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.
T12	Withdrawn
T13	Withdrawn
T14	Food Standards Agency. Radiological Surveillance. [Online] available at http://www.food.gov.uk/science/surveillance/radiosury [Accessed 15 July 2010].
T15	Centre for Ecology and Hydrology. Radiological protection of the environment – sharing knowledge. Tool for the assessment of impacts on terrestrial, freshwater and marine biota. [Online] Available at: http://www.ceh.ac.uk/protect/ERICAdeliverables.html [Accessed 15 July 2010].
T16	UK Climate Projections. DEFRA. [Online]. Available at: http://ukclimateprojections.defra.gov.uk/content/view/2145/499 [Accessed on 20 July 2010].
T17	LLW Repository Ltd. Site operations at LLWR in Cumbria [Online] Available at http://www.llwrsite.com/llw-repository-operations/site-operations [Accessed 20 July 2010].
T18	Nuclear Decommissioning Authority. The Nuclear Legacy. [Online]. Available at: http://www.nda.gov.uk/aboutus/the-nuclear-legacy.cfm [Accessed on 15 July 2010].
T19	DEFRA. March 2010. Environmental Permitting Guidance Radioactive Substances Regulation for the Environmental Permitting (England and Wales) Regulations 2010, Version 1.1.
T20	DEFRA, Environment Agency and Institute for Environment and Management. 2000. Guidelines for Environmental Risk Assessment and Management. HMSO.
T21	CERRIE, Report, 2004.
T22	Chartered Institution of Wastes Management, Landfills that applied to take hazardous waste in England and Wales, 2005.
T23	Cumbria County Council, Cabinet Paper 10, 25 August 2009.

Reference	Document Description
T24	Defra, Managing Radioactive Waste Safely, June 2008.
T25	Dounreay Site Restoration Ltd, Proposed New LLW Disposal Facilities at Dounreay
T26	Epidemiological Study on Childhood Cancer in the Vicinity of Nuclear Power Plants (KiKK-Study), 2006
T27	Erica, Scientific Uncertainties: Transcript from the EUG Workshop, May 2006.
T28	Ian Fairlie, Childhood cancers near German nuclear power stations: the ongoing debate, Medicine, Conflict and Survival, Vol. 25, No. 3, July-September 2009, 197-205.
T29	Foundation for Water Research, A Review of the Application of 'Best Practicable Means' within a Regulatory Framework for Managing Radioactive Wastes, UKRSR05, March 2005.
T30	Document removed as duplicate with PP7
T31	Ian Fairlie, Commentary: childhood cancer near nuclear power stations, 2009.
T32	Jackson Consulting, Regulatory Review of the Drigg Low Level Waste Repository, 20 July 2005.
T33	Geoff Mason, The Slupe Clay Pit Landfill, King's Cliffe: An Outline and Issues, March 2004
T34	Muir, H, Best Practicable Means Report (Dounreay) 2008.
T35	Nuclear Free Local Authorities, Radioactive Waste Briefing, No. 20, August 2009.
T36	Research Sites Restoration Ltd, Lifetime Plan Baseline, March 2010, Harwell Site Summary.
T37	Research Sites Restoration Ltd, letter to Planning Inspectorate, 22 June 2010
T38	Risk of Leukaemia and Related Malignancies following Radiation Exposure: Estimates for the UK Population: Report of an Advisory Group on Ionising Radiation, Documents of the NRPB: Volume 14, No. 1, 2003.
T39	Royal Society of Edinburgh, Response to Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom, May 2006
T40	UK Groundwater Forum, Groundwater Development.
T41	UKAEA Harwell, Harwell Site Waste BPEO Study, Second Stakeholder Consultation Document, October 2007.
T42	United Kingdom VAT & Duties Tribunals (Landfill Tax) Decisions, Nov 2007.
T43	UNSCEAR, The Chernobyl Accident, 2006.
T44	Document withdrawn by Waste Watchers
T45	Galson Sciences Ltd. 2008. Dounreay new LLW facilities RSA93 Environmental Safety Case. Report number LLW(07) S2/197, Issue 1, Draft.
T46	Jacobs Babbit. 2006. LLW Facilities Stage 2 Environmental Statement. Report number 19563/024.
T47	Camp, S. Et al. 2005. Presentation of a new French site for storing very low level radioactive waste. International workshop 'Hydro-Physico-Mechanics of Landfills' LIRIGM, Grenoble 1 University of France, 21-25 March 2005.
T48	Chastagner F. 2005. Industrial solutions for all low level waste. CLEFS CEA, No. 53 Winter 2005-2006.
T49	Dutzer M. 2009. French very lows. Nuclear Engineering International 20 th February 2009.
T50	Zuloaga P. 2006. New developments in low level radioactive waste management in Spain. Topseal Transactions International Topical Meeting. Olkiutoto Information Centre, Finland, 17-20 September 2006.
T51	Zuloaga P. 2004. Management of very low radioactive waste in Spain. Pages 174-184 of the IEA Proceedings of an international symposium, Cordoba, Spain, 13-17 December 2004.

Reference	Document Description
T52	Environment Agency. 2009. Introductory document To Accompany: Application for authorisation to dispose of high volume very low level radioactive waste at a landfill site not on a nuclear licensed site (CD7914) By Waste Recycling Limited, for premises at Lillyhall Landfill, Joseph Noble Road, Lillyhall, Workington, Cumbria.
T53	Environment Agency. 2009. Environmental Permit Variation notice with introductory note. Lillyhall Stage 3 Landfill Site. Variation notice number EAIEPRIGP3037SJN004 Permit number EAIEPRIGP3037SJ
T54	Nuvia. 2009. Environmental Safety Case for the Clifton Marsh landfill Site. Document ref: 89290/SC/SR001. Issue 1.
T55	Lancashire County Council. 16 December 2009. Planning Officer's report to the Development Control Committee. Clifton Marsh landfill site.
T56	Endecom UK Ltd. December 2009. Proposed development of Keekle Head waste management centre, Cumbria. Planning Statement Part 2.
T57	Endecom UK Ltd. December 2009. Proposed development of Keekle Head waste management centre, Cumbria. Environment Statement. Volume 1. Main report.
T58	Committee on the Biological Effects of Ionizing Radiations, 2006. Health Risks from Exposure to Low Levels of Ionizing Radiation. BEIR VII Phase 2. The National Academies Press, Washington, DC.
T59	United Nations Scientific Committee on the Effects of Atomic Radiation. UNSCEAR Report 2006. Volume I: Report to the General Assembly, with Scientific Annexes A and B. United Nations, New York
T60	Harvard Centre for Cancer Prevention, 1996. Harvard Report on Cancer Prevention. Volume 1: Causes of Human Cancer. Radiation. Cancer Causes Control; 7 (Suppl. 1): S41-S43
T61	Jacobs. 2008. LLW facilities Stage 2 Best Practicable Means Report 2008. Report reference: JE1956300/73, 28 March 2008.
T62	CIRIA for the SAFEGROUNDS Learning Network. 2009. Good Practice Guidance for the Management of Contaminated Land on the Nuclear and Defence Sites. Version 2
T63	UK LLW Strategy Group. 2009. Pointers to Good Practice Document on Stakeholder Engagement Around LLW Projects
T64	World Health Organisation. 1948. Preamble to the Constitution of the World Health Organisation as adopted by the International Health Conference
T65	United Nations Scientific Committee on the Effects of Atomic Radiation. UNSCEAR Report 2008. Volume I: Report to the General Assembly, with Scientific Annexes A and B. United Nations, New York
T66	United Nations Scientific Committee on the Effects of Atomic Radiation UNSCEAR. 1994. Sources and Effects of Ionizing radiation Report
T67	Aurengo et al. 2005. Dose-effect relationships and estimation of the carcinogenic effects of low doses of ionizing radiation. Academy of Sciences. National Academy of Medicine. March 30, 2005.
T68	Committee on the Biological Effects of Ionizing Radiations, 1999. Health Effects of Exposure to Radon. BEIR VI. The National Academies Press, Washington, DC.
T69	Cardis et al. 2006 Cancer consequences of the Chernobyl accident: 20 years on. Journal of Radiological Protection.
T70	Committee on Medical Aspects of Radiation in the Environment (COMARE) 2006
T71	Environment Agency Standard Notice – Commercial 2010
T 72	RSRL Permitted Site including the Discharge Pipeline and Lydebank Brook connection . Plan no. WR/0710/034 Dated 14.07.2010

Reference	Document Description
T73	Section of Permitted Site showing proposed spur to Public Sewer. Plan no. WR/0710/036 Dated 15.07.2010
T74	Environment Agency. Radioactive Substances Act 1993 Certificate of Authorisation (Resulting from Transfer) and Introductory Note. Disposal of Radioactive Waste from Nuclear Site. Research Sites and Restoration Limited. Transfer Number BF0886/CC2712/1. Relating to Authorisation Number BF0886
T75	Environment Agency. Radioactive Substances Act 1993 Certificate of Authorisation (Resulting from Transfer). Disposal of Radioactive Waste from Nuclear Site. Research Sites and Restoration Limited. Transfer Number CC2712/2. Relating to Authorisation dated 8 September 1978
T76	Environment Agency. Radioactive Substances Act 1993 Certificate of Authorisation (Resulting from Transfer). Disposal of Radioactive Waste from Nuclear Site. Research Sites and Restoration Limited. Transfer Number CC2712/3. Relating to Authorisation dated 17 October 1979
T77	Letter from Research Sites and Restoration Limited dated 28 th July 2010 to Mr D Prescott Environment Agency. Application for a Variation to the RSRL Harwell Permit: Request for Further Information
T78	RSRL. Information to support a Variation to the RSRL Environmental Permit for Disposal of Radioactive Waste from the Research Sites Restoration Ltd Site at Harwell. July 2010.
T79	Environment Agency. Application for an environmental permit for a radioactive substances activity Part RSR-A
T80	Environment Agency. Application for an environmental permit. Part RSR-C3 – Variation to a bespoke radioactive substances activity permit (nuclear site, open sources and radioactive waste)
T81	Environment Agency. Application for an environmental permit (radioactive substances activity) Part RSR-F Charges and declarations
T82	Boundary of the RSRL Harwell Permitted Site. Plan no. WR/0710/032. Dated 13.07.2010
T83	Environment Agency. Radioactive Substances Act 1993 Variation Notice and Introductory Note. Disposal of Radioactive Waste from Nuclear Site. Research Sites and Restoration Limited. Variation Notice Number CE3809. Authorisation Number BF0886/CC2712

Reference	Document Description
Other documents (OD)	
OD1	Minutes of the Kings Cliffe Liaison Committee meetings. November 2003 – July 2010.
OD2	Copies of documentation associated with the consultation undertaken between July 2009 and September 2010 since the application was submitted.
OD3	Letter from Ms Evans, Planning Inspectorate to Claire Brook, Dickinson Dees with a copy of a letter from Louise Bagshawe MP to Eric Pickles MP and a reply from Ms Sporle, Planning Inspectorate. 21 June 2010.
OD4	Information to satisfy the requirements Article 37 of the Euratom Treaty submitted to the Department for Energy and Climate Change by Augean. May 2010
OD5	Responses to request for additional information. General Data Art. 37 East Northants LLW Repository.
OD6	Lancashire County Council Development Control Committee meeting minutes including Planning Officers report on Clifton Marsh application dated 16 December 2009 and Development Control Committee meeting minutes dated

Reference	Document Description
	21 April 2010
OD7	Rutland County Council, Development Control and Licensing Committee, Report No. 219/2009, Addendum Report, 13 October 2009
OD8	Augean Plc, Corporate Social Responsibility Report 2008
OD8A	Augean Plc, Corporate Social Responsibility Report 2009
OD9	Augean Plc, New Waste Proposal, May 2009.
OD10	Fred Barker, Low Level Wastes (LLW) Strategy and Developments, Nuleaf Steering Group, April 2010.
OD11	British Geological Survey, Geological Map of British Isles. [Online] available at http://www.bgs.ac.uk/education/makeamap/home.html [Accessed 13 September 2010]
OD12	Corby Borough Council, Minutes of the Meeting of Full Council, 29 October 2009.
OD13	East Northamptonshire District Council, Development Control Committee, Minutes of Meeting, 30 September 2009.
OD14	Edison Investment Research – Outlook – Augean – 26 March 2010
OD15	Hunts Post, 3 March 2010.
OD16	Letter from Martin Murray (Environment Agency) to Chris Leuchars, 13 July 2010
OD17	David Nicholson to Rona Smith, email, 19 July 2010
OD18	News and Star, 26 August 2009.
OD19	Peterborough City Council, Minutes of a meeting of the Planning and Environmental Protection Committee, 13 October 2009.
OD20	Peterborough Evening Telegraph, 1 December 2006.
OD21	Peterborough Evening Telegraph, 20 November 2008.
OD22	RNS Number: 3676V Augean Plc 9 July 2009.
OD23	RoSPA Occupational Safety and Health Journal May 2009:6.
OD24	The Guardian, 31 August 2004.
OD25	The Guardian, 14 March 2010.
OD26	The Times, 26 April 2010.
OD27	Augean. Representations to the Control and Management of Development DPD – Northamptonshire Minerals and Waste Development Framework. 21 July 2010
OD28	Augean. Representations to the Locations of Development DPD – Northamptonshire Minerals and Waste Development Framework
OD29	Augean. Representations to the Core Strategy DPD – Northamptonshire Minerals and Waste Development Framework
OD30	Oundle Town Council. Minutes of the meeting of the Council. 17 June 2010.
OD31	Third party objections to the proposed development to September 2010
OD31A	Third Party Objections to the Proposed Development (22 nd October 2010 onwards)
OD32	Royal Town Planning Institute, Good Practice Guide to Public Engagement in Development Schemes 2010
OD33	Northamptonshire County Council Minutes of the Cabinet meeting held on 10 th September 2007
OD34	Northamptonshire County Council Report to the Cabinet meeting held on 10 th September 2007
OD35	ENDS Report - 393 October 2007, p.60
OD36	CIRIA for the SAFEGROUNDS Learning Network. Community Stakeholder Involvement. 10 August 2005
OD37	Planning Inspectorate Journal. Planning and Risk. Winter 2001-2002. Issue 24
OD38	DEFRA. 2006. Response to the Report and Recommendations from the

Reference	Document Description
	CoRWM by the UK Government and the Devolved Administrations
OD39	DEFRA. Consultation Document on the Implementation of the Revised Framework Directive July 2010
OD40	Secretary of State Decision. 1991. Appeal by Leigh Environmental Ltd in relation to land at Sandall Stones Road, Kirk Sandall Industrial Estate, Kirk Sandall, Doncaster
OD41	Health and Safety Executive. 1992. "The Tolerability of Risk from Nuclear Power Stations"
OD42	Secretary of State Decision 8 January 2010. Appeal by Prof. P. Witting in relation to 35 Pinsley Road, Leominster, Herefordshire, HR6 8NN
OD43	Secretary of State Decision 21 June 2010. Appeal by Aspect Contractors Llp, Unit 17A, Whitting Valley Road, Old Whittington, Chesterfield, Derbyshire, S41 9EY
OD44	Secretary of State Appeal Decision 7 October 1999. Appeal by Terry Adams Ltd. Yanley Quarry
OD45	Scottish Executive Appeal Decision 19 July 1999. Proposed Wind farm at Creag Riasgain, Craikaig Estate, Helmsdale Includes Inspector's report.
OD46	Secretary of State Appeal Decision 30 May 1985. Appeal by Mr Chapel Holmes / Mearclough Road, Sowerby Bridge
OD47	Welsh Assembly Appeal Decision 19 November 2009. Celtic Energy. Margam Opencast Coal Site, Cefn Cribwr
OD48	Secretary of State Appeal Decision 16 August 2007. Appeal by O2 Ltd. Land Outside The Heron Public House, Aldershot, Hampshire, GU11 3QY
OD49	Secretary of State Appeal Decision 15 September 2008. Appeal by O2 Ltd. Gosport / Earls Road, Fareham, Hampshire, PO16 ORU
OD50	Secretary of State Appeal Decision 2 June 2009. Appeal by Telefonica O2 Ltd. Allerton Road, Liverpool, L18 5HU
OD51	Low Level Waste Repository Ltd, LLW Transport Hubs Assessment, Draft Report, Entec, March 2010
OD52	Paul Slovic 1987, Perception of Risk, Extract from Science Volume 236
OD53	Department of Health, Communicating about Risks to Public Health, Pointers to Good Practice
OD54	Secretary of State Appeal Decision 31 January 2000. Appeal by Waste Hygienics. Land at Gaerwen Industrial Estate, Gaerwen, Anglesey
OD55	The HVLA Waste Public Consultation at UKAEA, Harwell, Update Number 1, May 2007
OD56	The HVLA Waste Public Consultation at RSRL, Harwell, Update Number 2, May 2010
OD57	Great Portland Estates versus Westminster City Council HL
OD58	Newport Borough Council versus Secretary of State for Wales and Another, June 1997 1 PLR 47
OD59	Gateshead MBC versus Secretary of State for the Environment 12 May 1994 CA
OD60	R-v- Broadland District Council (1) St Matthew's Society Limited (2) Peddars Way Housing Association (3) ex parte Christopher Dove, Harley and Wright

Reference	Document Description
	[1998] EWHC Admin 62 (26 th January, 1998)
OD61	Secretary of State Appeal by Waste Recycling Group Ltd, Eastcroft Energy from Waste Facility, Nottingham, 12 February 2009
OD62	Secretary of State Decision on Energy from Waste CHP Generating Station at Runcorn, Cheshire 16 September 2008
OD63	Inspector's 1 st Report in respect of an Application by Riverside Resource Recovery Limited under Section 36 of the Electricity Act 1989 for an EfW facility at Belvedere, Bexley, 22 February 2005
OD64	Secretary of State Appeal by Peel Environmental Ince Limited for a refuse derived fuel generating station on land adjacent to Manchester Ship Canal, Ince, Cheshire, 11 August 2009
OD65	Section 78 Appeal Decision. Land at Wadlow Farm, West Wrating, Cambridgeshire, Application S/1018/06/F
OD66	The HVLA Waste Public Consultation at UKAEA, Harwell Final Recommendation. February 2007
OD67	Suite of RSRL Correspondence Updated 4 th November 2010
OD68	High Court Judgement 25 th November 2002 Susan Trevett versus Secretary of State for Transport, Local Government and the Regions, /Medlock Communications Ltd, Spectrasite Transco Communications Ltd, BT Airwave and Stroud District Council
CD69	Appeal Court Judgement West Midlands Probation Committee versus Secretary of State for the Environment, 7 th November 1997
OD70	East Northamptonshire District Council – Outline Planning Permission for Outline Residential Development – Land Between Willow Lane and Fineshade Close, Wood Road, Kings Cliffe, Northamptonshire
OD71	East Northamptonshire District Council Adopted Scoping Opinion in Respect of Rockingham Forest Park Ltd, Kings Cliffe 19 th October 2010
OD72	GP Planning Ltd Scoping Report in Respect of Planning Application for a Forest Holiday Development with Leisure, Retail and Tourism Facilities, Including Accommodation. Rockingham Forest Park, Kings Cliffe. August 2010
OD73	Appeal Decision. Land Adjacent to Stalbridge Dock, Dock Road, Port of Garston, Liverpool. 5 th October 2010
OD74	BBC News Article (Stoke and Staffordshire) Explosion Leaves 12 Contaminated at Cannock Plant. 5 th November
OD75	The Disposal of Low Level Radioactive Wastes – A Briefing Paper for Phil Hope MP Prepared by ENRMF
OD76	Extract from Inspectors Report on the Examination into the Northamptonshire Minerals and Waste Core Strategy Development Plan Document. 1 st March 2010
OD77	A3 Plan of Kings Cliffe Conservation Area
OD78	High Court Decision Derbyshire Dales District Council and Peak District National Park Authority versus Secretary of State for Communities and Local Government and Carsington Wind Energy Ltd. 17 th July 2009
OD79	Site Visit Itinerary
OD80	High Court Judgement Harrison versus Secretary of State for Communities and Local Government, Cheshire Councils. 16 th December 2009
OD81	News from NENIG (Northern European Nuclear Information Group) UK: Radioactive rabbits and annual report on nuclear industry discharges
OD82	High Court Judgement. Brown versus Carlisle City Council and Stobart Air Ltd. 19 th May 2010
OD83	Cannock Chase News Article: Bridgtown Plant Blast – Residents Voice Fears. 11 th November 2010

Reference	Document Description
OD84	High Court Judgement. Davies versus Secretary of State for Communities and Local Government. 28 th August 2008
OD85	390 Collis Radio Ltd and Another versus Secretary of State for the Environment and Another. 27 th January 1975
OD86	Journal of Planning & Environmental Law 1998 Case Comment. Extension of Bail and Probation Hostel – Suburban Housing Estate
OD87	Inquiry Attendance Sheets

GLOSSARY

BAT	Best Available Technology
BPM	Best Practical Means
BPEO	Best Practical Environmental Option
Bq	The nuclear disintegration rate (the activity) of a radionuclide, the number of disintegrations per second, is measured in becquerels (Bq) where 1 Bq is one disintegration per second
Bq/g	Bq per gram - The specific activity is the activity per unit mass (as in Bq/g or Bq/kg) or volume as in Bq per cubic metre (Bq/m ³)
CERRIE	Committee Examining Risks of Internal Emitters
COMARE	Committee on Medical Aspects of Radiation in the Environment
CS	Minerals and Waste Development Framework Core Strategy
DCLG	Department of Communities and Local Government
DP	Development Plan
DUOB	Depleted Uranium Oversight Board
EA	Environment Agency
ECRR	European Committee on Radiation Risk
EIA	Environmental Impact Assessment
EiC	Examination in Chief
ENRMF	the appeal site/East Northants Resource Management Facility
ERICA	Environmental Risk from Ionising Contaminants: Assessment and Management, research project under the EC Euratom 6 th Framework programme
ES	Environmental Statement
Exempt	Any waste that falls 'outside the Act' is exempt, but there is no 'de minimis'. All substances and all waste are radioactive. Exempt waste is dealt with as normal waste and all landfills throughout the country accept it.

FSA	Food Standards Agency
Hierarchy	The National LLW Strategy (NS17 pg1 Executive Summary) sets out the waste hierarchy for LLW as, in summary: prevent, then minimise, re-use, recycle, reduce volume and, lastly, dispose
HPA	Health Protection Agency
HDPE	High Density Polyethylene
HSE	Health and Safety Executive
HVLA	High Volume Low Activity waste
ICRP	The International Commission on Radiological Protection
KC	King's Cliffe
KPO	Key Planning Objective
LLW	Low level radioactive waste
LLWR	LLW Repository at Drigg, Cumbria
m ³	Cubic metre
mSv	Milli Sieverts
mt	million tonnes
MWDF	Minerals and Waste Development Framework
NCC	Northamptonshire County Council
NDA	Nuclear Decommissioning Authority
PCT	Primary Care Trust
PIM	Pre-Inquiry Meeting
Pins	Planning Inspectorate
PPS	Planning Policy Statement
PPS10	Planning for Sustainable Waste Management 2005
PPS23	Planning and Pollution Control
RPA	Radiation Protection Adviser
RSRL	Research Sites Restoration Ltd
RTPI	Royal Town Planning Institute
SCG	Statement of Common Ground
SEA	Strategic Environmental Assessment
Sieverts	The unit of equivalent dose, which is an overall measure of the risk of cancer and of hereditary effects for germ cells developing in the human tissue in which the radiation energy is deposited. The equivalent dose is a radiological protection quantity that

takes account of the overall effectiveness of the different types of radiation to cause non-lethal cell modification of relevance to stochastic health effects (see below). As 1 Sv is a high equivalent dose, it is common to see mSv (millisievert, 10^{-3} Sv) or microsievert (10^{-6} Sv). The Sv is also the unit of effective dose, the sum of all the equivalent doses, each weighed by the appropriate tissue weighting factor.

SLE	Statement of Local Engagement
SNIFFER	Scotland and Northern Ireland Forum for Environmental Research
Stochastic	Stochastic health effects are the result of a loss of proper control of the cell caused by DNA damage and an alteration of the normal functioning of the cell that is not detected and dealt with by the body's defence mechanisms. The health effect will not definitely occur after the receipt of a dose of radiation by a tissue. The probability of the effect occurring increases with the dose received (but not the severity of the effect), except at high doses when the probability decreases because of the competing influence of cell-killing – and dead cells cannot give rise to stochastic health effects.
t	tonnes
tpa	tonnes per annum
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
VLLW	Very Low Level Radioactive Waste
WPA	Waste Planning Authority
WSE	Waste Strategy England 2007
XX	Cross examination.