

**APPLICATION NO:** S.07/0927/CM      **VALIDATION DATE:** 05.04.2007

**APPLICANT:**                      **Magnox Electric Ltd**

**SITE:**                                      **Berkeley Nuclear Licensed Site, Berkeley,  
Gloucestershire GL13 9PB**

**PROPOSAL:**                      **Intermediate Level Waste (ILW) storage building,  
relocation of existing security fence, temporary storage  
of excavated material, landscaping and associated  
works**

**Parish of Ham and Stone**

**Grid reference: 365886, 199567**

**SITE AREA: 5.48 ha**

<p><b>RECOMMENDED:</b>      <b>That planning permission be granted for the reasons set out in this report and summarised at paragraph 7.18, and subject to the conditions set out in section 8 of this report.</b></p>
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## **1.0 LOCATION**

- 1.1 Berkeley Nuclear Licensed Site is located approximately 2 kms to the west of the village of Berkeley, 2 kms to the south-east of Lydney Harbour and 3 kms to the south of Sharpness. The overall site covers an area of 90 ha and within this the application site covers an area of approximately 5.5 hectares. The nearest residential property is Hamfield Farm which lies on the outskirts of the village of Berkeley approximately 550 metres to the east of the application site. Hamfield Cottages lie a further 250 metres to the east. The application site is accessed from a private road that leads off Hamfield Lane.
- 1.2 The site for the proposed Intermediate Level Waste store (hereafter referred to as the 'ILW store') that is the subject of this application lies within the north-eastern part of the Berkeley Nuclear Licensed Site, approximately 110 metres to the north of the more easterly of the two decommissioned reactor buildings, and 190 metres to the north-east of the other reactor building. Although buildings had previously occupied the application site, it currently consists of a level, grassed area that contains a number of semi-mature trees. Offices and car parking lie beyond the reactor buildings approximately 350 metres to the south of the proposed ILW store. The Berkeley social club lies approximately 130m to the east of the proposed ILW store, and a Grade II listed gazebo-style summerhouse lies approximately 195 metres to the west of the proposed ILW store.
- 1.3 The mean high water mark of the Severn Estuary lies approximately 265 metres to the west of the proposed ILW store. The Severn Estuary, and the surrounding areas, are important in the UK for nature conservation supporting a wide variety of nationally and internationally important habitats and species.

It is designated as a Site of Special Scientific Interest (SSSI), a wetland of international importance (Ramsar site) and a Special Protection Area (SPA) for birds. It is a European Marine Site and forms part of a network of wildlife sites across Europe known as 'Natura 2000'. The Severn Estuary is also being considered as a Special Area of Conservation (SAC).

## 2.0 THE PROPOSAL

- 2.1 The proposal is for the construction of a storage building to house intermediate level waste (ILW) and the building has a design life of 150 years. The Committee on Radioactive Waste Management (CoRWM), that is a government advisory body, has recommended that a disposal facility would not be available until at least 2040. The proposed ILW store will be approximately 83 metres long, 24.5 metres wide and with a height of 18 metres to the apex of the roof. It will be constructed of concrete with cladding providing an external weatherproof layer.
- 2.2 The planning application also proposes the modification of the inner security fence to enclose the ILW storage building, the construction of two separate mounds to the north and north-west for the temporary storage of excavated material, and the planting of three belts of mixed tree and shrub species.
- 2.3 The applicant has provided the following information in support of the application:

***“ Planning Supporting Statement  
Background to the planning application***

*The planning application is for:*

*An Intermediate Level Waste (ILW) Storage building for the long term storage of packaged ILW that has arisen at the Berkeley site;*

*An extension to the inner security fence to enclose the ILW Storage building;*

*Temporary storage of excavated material arising from the construction of foundations of the ILW storage building, until this can be re-used on site, and;*

*Landscaping and other minor works.*

- 2.4 *The ILW will be stored on site until such time as an off-site facility is available to receive such wastes. It is not proposed to store permanently any radioactive wastes at the Berkeley site. Although the storage building will have a design life of 150 years.*
- 2.5 *Only radioactive waste will be stored. No special (dangerous or hazardous) waste as defined under the Control of Pollution (Special Wastes) Regulations will be stored.*

- 2.6 *The inner security fence enclosing the new store will be of similar design and appearance to the existing inner security fence, and will remain in place at least as long as the proposed building is used for ILW storage.*
- 2.7 *The temporary mounds of excavated material will remain for a period of two to four years, after which it is expected the material will be re-used in the restoration of the wider Berkeley nuclear licensed site.*
- 2.8 **Background – the need for the ILW store**  
*The proposed building for the storage of conditioned ILW is needed as part of a generic radioactive management strategy. This strategy is being used by Magnox Electric for the nuclear power station sites that are in the process of being decommissioned.*
- 2.9 *Decommissioning is one of the last stages in the life cycle of a nuclear power station when buildings are progressively removed from the site prior to a period of Care and Maintenance and concludes with Final Site Clearance. Decommissioning of the site requires that waste is retrieved, processed and encapsulated for safe passive storage above ground.*
- 2.10 *An ILW store is one of a number of Regulatory requirements before the retrieval and processing of the unconditioned waste from the vaults can commence.*
- 2.11 **The ILW Store**  
*The ILW Store will provide a passive, safe and secure storage solution for the storage of packaged encapsulated ILW at Berkeley site. The facility will provide storage for Nirex packages. These are made from stainless steel and are in accordance with Nirex specifications. The ILW Store will receive encapsulated packages from the Wet and Solid ILW processing facilities. They will be delivered using an across site ... Transporter.*
- 2.12 **Location**  
*It is proposed that the ILW store will be constructed on a levelled site located on the north end of the power station. ... The construction of the new ILW store will also involve the modification of the existing Radiological Controlled Area (RCA) security fence to encompass the new store.*
- 2.13 **Severn Estuary**  
*... The proposed ILW store building is approximately 270m from the edge of the estuary. ... However, bird species local to the application site are present in relatively low numbers ... and the impacts that would result from construction activities have been assessed as negligible and not significant. Although no impact mitigation would be required, as good practice it is proposed to minimize noise and disturbance where practicable. In addition the following are examples:*
- 2.14 *A 'no-go' zone will be established and clearly marked with demarcation fencing approximately 200m to the east of the estuary edge, as soon as the*

*excavations are complete, to limit visual disturbance from construction activities.*

*All lighting will be carefully aligned to avoid spilling and illuminating the estuary to the west of the construction site.*

**2.15 Flood Risk**

*The proposed internal floor level of 11m AOD gives a freeboard of 0.5m above the predicted 200 year tidal flood level including climate change by ~2080.*

**2.16 Dimensions and Appearance**

*The Company has developed a concept design for an ILW Store with replicable layout such that this design could be applied to any storage location with only minor adaptations to account for site-specific requirements (e.g. waste types and quantities) and conditions (e.g. type of ground, proximity to general public).*

*2.17 The proposed ILW storage building will be 83m by 24.5 m and 18m high to the ridge. This provides the capacity to store 1200 Nirex standard packages including a contingency of 15%. This level of contingency is considered adequate to accommodate all uncertainties regarding the final number of packages. It is based upon the Company's knowledge of ILW and experience at other sites, such as Hunsterston 'A', Hinkley Point 'A' and Trawsfynydd, where similar stores have been designed and construction has commenced.*

*2.18 The ILW Store will be a reinforced concrete box structure upon a reinforced concrete raft supported on piles. External shield walls will be cast reinforced concrete with internal walls of block-work construction. The roof will be reinforced concrete.*

*2.19 Apart from a protective brick facia (Staffordshire Engineering Brickwork) near the ground, the architectural design adopted will incorporate 'all over' cladding in colour coated aluminium. ... The cladding with a pitched roof and curved eaves, is to provide the outer weather envelope. The roof is designed to facilitate water run off without the need for roof drainage, thus reducing the risk of blocked drains and maintenance. There will be a concrete hard-standing around the store for maintenance access during the life of the ILW Store. The internal reinforced concrete structure, which will provide the radiation shielding for workers and the public, will be covered by a weatherproof structure consisting of a steel frame on which the external cladding is fixed.*

*2.20 Landscape proposals include tree and shrub planting belts to the north, east and west of the proposed building.*

*2.21 Drainage from the roof and any hardstandings would be to external drains discharging into the existing surface water drainage system (below ground piped system) that discharges to the River Severn. There may be a need for attenuation structures (e.g. below ground tanks or oversized pipes) to ensure*

*the existing system can accept the flows. This will be confirmed by undertaking an appraisal of the existing drainage system before the works begin and the system will be designed accordingly.*

## **2.22 Lighting**

*During the construction of the ILW storage building suitable directional floodlighting will be installed. Under normal circumstances this will only be used at the start and end of the working day during winter months. In the context of the existing lighting at the site, this has been assessed in visual terms as not significant. ...*

## **2.23 Regulatory Controls and Safety**

*The ILW storage building is to be located within the Nuclear Licensed Site. The controls that currently apply to the site will remain in place. ... In terms of nuclear safety, the site will need a licence from the Health and Safety Executive. There are a number of licence conditions that currently apply and will continue to apply to the site. These licence conditions cover inter alia measures to ensure that radioactive material is adequately controlled or contained at all times and measures to reduce the likelihood of accidents involving the uncontrolled release of radioactive substances to a very low level.*

*In terms of the packages, these will be stored in compliance with Site Licence conditions and associated safety requirements, in a manner such that future retrieval, transportation and potential disposal requirements will not be compromised.”*

## **2.24 Design and Access Statement**

The applicant has also submitted a Design and Access Statement as part of the planning application. The following relevant information applies:

*“... The building is designed for safety, long life, security and durability and will need only low levels of maintenance throughout its lifetime.*

**2.25** *... The preferred strategy of storing ILW in a new facility at the Berkeley Nuclear Licensed Site was initially established under a Best Practicable Environmental Option (BPEO) study process. The precise form and location of ILW Store within the Nuclear Licensed Site was subsequently confirmed under a Best Practicable Means (BPM) study process.*

**2.26** *The principal reasons for selecting the proposed location are:*

- It is the most distant from the flood risk zone;*
- It is reasonably distant from the Severn Estuary designated areas (with consequentially less disturbance to over-wintering birds);*
- Ease of construction (it being close to the main access road to the Berkeley Power Station site);*
- The low probability of it causing interference with other decommissioning activities; and*
- There is adequate space for construction contractors to work in.*

2.27 *The proposed ILW Store has the capacity to store 1200 Nirex standard packages comprising 3m<sup>3</sup> stainless steel boxes and drums filled with radioactive waste encapsulated in concrete. These packages are manufactured to high standards of cleanliness and integrity in accordance with stringent Nirex specifications. The packages' cleanliness and integrity will be maintained throughout the storage period. ...*

## 2.28 **Design**

### *Arrangement, Size and Appearance*

*... Magnox, has developed a design for an ILW store with a 'replicable layout'. ... The replicable design consists of a substantial reinforced concrete box structure that principally comprises an enclosed space (or 'vault') for the storage of Nirex standard ILW packages. The structure also incorporates an adjoining 'receipt area', where the ILW packages can be picked up for loading into the vault by overhead travelling crane, and a further adjoining area for control and plant maintenance activities. It is the inner concrete box that gives the building its great strength and radiation shielding protection to workers and public. In order that the building can function passively (that is, with minimal human intervention for the purposes of maintenance) it has a design life of 150 years. ... To accommodate the local ground conditions, the Berkeley ILW Store will be supported on reinforced concrete bored piles. ...*

2.29 *To the south of the Store, a short new section of road will allow ILW packages to be delivered from their points of production at the Berkeley site. There is a concrete hardstanding around the Store for building maintenance access and vehicle manoeuvring during its life. The hardstanding incorporates a drainage channel to collect rainwater and direct it to the site's existing surface water drainage system.*

### 2.30 *Flood Protection*

*The floor of the Store is 11m above ordnance datum. This is approximately 1m above existing ground level to guard against the possible future flood risk arising from climate change. Furthermore, the storage vault is enclosed by massive concrete walls that extend to over 18m above ordnance datum, meaning that the contents will be well protected from any future flooding events.*

### 2.31 *Security*

*The building is extremely robust and incorporates high grade security doors. It is also situated within the secure boundary of the overall site. All proposals for security provisions will be subjected to the scrutiny of the Office of Civil Nuclear Security (OCNS).*

### 2.32 *Operating License*

*The Store will not be able to commence operation (that is, receiving ILW packages) until the Health and Safety Executive's (HSE) Nuclear Installations Inspectorate branch (NII) is satisfied that its stringent criteria concerning safe operation of a nuclear facility have been satisfied. The Store's safe performance and operation will be subject to periodic review and re-licensing throughout its life.*

2.33 *Access provisions*

*It is unlikely that the number of ILW Store operatives will exceed five persons during periods of occupation. Furthermore, the building will be unoccupied for the greater part of its operational life (i.e. once it is filled) and will be used solely for storage of large packages of radioactive waste. There is no need for provisions for access by disabled persons and toilet facilities for operatives are situated elsewhere on the Power Station site.*

2.34 *Community involvement*

*The Berkeley Site Stakeholder Group (SSG) is the main interface between the Berkeley site and the local community. It is an independent group set up by the site owner, the Nuclear Decommissioning Authority (NDA), to provide a link between the community, Magnox, site regulators and the NDA itself. ...A series of well-attended consultation events concerning the Berkeley ILW Store proposals have been held since November 2006 and more are planned on an ongoing basis as the scheme is progressed."*

2.35 The applicant proposes that excavated earth and topsoil from the construction of the ILW store will be placed to the west of the building and remain for a two to four year period. Tree planting belts are also proposed to the north, west and east of the ILW store.

2.36 As part of the planning application the applicant submitted an Environmental Statement. In order to illustrate the consideration of the potential environmental effects of this proposal, the following sections of the ES are reproduced:

2.37 **“ Alternatives**

***Introduction***

*The proposed building is for the interim storage of the packaged Intermediate Level Waste (ILW) that arises from the application to Berkeley nuclear licensed site of the ILW retrieval and encapsulation / solidification processes. ... such interim storage of packaged ILW is required until a disposal route has been built and is able to accept the waste from this site. Such interim storage should satisfy the Government's wish that the replacement of stores is to be avoided wherever possible and that the interim storage strategy should allow for the safe and secure storage of the waste contained within them for a period of at least 100 years. In particular, packages must be stored in compliance with site licence conditions and associated safety requirements, in a manner such that the package integrity, future retrieval, transportation and disposal requirements will not be compromised. ...*

2.38 **Location of ILW Storage**

*Overview*

*Best Practicable Environmental Options (BPEO) and Best Practicable Means (BPM) studies were carried out in respect of the issue of long-term storage of ILW from the Berkeley nuclear licensed site. ...*

- 2.39 *Environment Agency guidance states that BPEOs should examine strategic options and, once the preferred strategic option has been identified, this should be optimised at the BPM (Best Practicable Means) stage, i.e. the BPM should examine specifically how this preferred strategic option should be put into practice.*
- 2.40 *... Best Practicable Means is defined in the UK Government 1995 review of radioactive waste management policy as: “that level of management and engineering control that minimises, as far as practicable, the release of radioactivity to the environment whilst taking account of a wider range of factors, including cost-effectiveness, technological status, operational safety, and social and environmental factors”*
- 2.41 *In simple terms then, for the storage of ILW from Berkeley nuclear licensed site, a BPEO study was undertaken to address the high level strategic question of where, in broad terms, the ILW should be stored, and a BPM study addressed the question of how the preferred option from the BPEO should be implemented.*
- 2.42 *Multi-Attribute Decision Analysis*  
*For both BPEO and BPM studies, Multi-Attribute Decision Analysis (MADA) was chosen as the methodology. The key issue in the undertaking of a formal MADA is the determination and evaluation of factors which are important in distinguishing between alternative courses of action. The process is one which helps to ensure a systematic and transparent approach. ...*
- 2.43 *Constraints*  
*For both the BPEO and the BPM a number of constraints were applied to the options, including that they must comply with UK legislation/ regulations and be likely to receive regulatory approval; have a capacity to store 1,200 Nirex 3m<sup>3</sup> packages (including contingency); and have a design life of at least 100 years. Additional constraints relating to radiation exposure also applied.*

### **Options Considered in the BPEO**

<i>Option</i>	<i>Description</i>
<i>Option 1 – Do Nothing</i>	<i>This option is the continuation of the current position where waste is stored in an unconditioned form in the present storage locations.</i>
<i>Option 2 – On-Site Store</i>	<i>This option would see the wastes, once retrieved and encapsulated, being stored in a facility constructed on the Berkeley nuclear licensed site for the storage of Berkeley wastes only.</i>

Option 3 –Off-Site Store (Berkeley nuclear licensed site waste only)	This option would see the wastes, once retrieved and encapsulated, being transported away from the Berkeley nuclear licensed site, and stored at another location. The store in question would house only wastes from the Berkeley nuclear licensed site.
Option 4 – Off-Site Store (shared with wastes from other sites)	This option would see the wastes, once retrieved and encapsulated, being transported away from the Berkeley nuclear licensed site, and stored at another location. The store in question would house wastes from more than one reactor site.
Option 5 – Defer the Decision	This option would in the short term (5 to 10 years) replicate option 1 until a decision was made at some point in the future regarding the storage of the wastes. As for option 1, the implicit assumption is made that the wastes are not retrieved or encapsulated at least until the future decision was made.

*... Options 1 and 5 did not pass the first constraint, i.e. they were considered unlikely to receive regulatory approval. Therefore only options 2, 3 and 4 were carried forward for detailed study.*

2.44 *The following attributes were considered:*

- health and safety, risk and exposure;*
- environmental impacts technical and practical issues;*
- socio-economic issues; and*
- cost effectiveness.*

2.45 *Within each of these a number of sub-attributes were considered. For example environmental impacts includes the following sub-attributes: non-radioactive waste arisings; impact on ecosystems & habitat; nuisance (noise, visual, odour, off-site transport activities); and resource usage.*

2.46 *Options were scored on a scale of zero to five, where a score of five represented the best performing option for a particular attribute and zero represented the worst, and the attributes were giving weightings. As weightings can be subjective and will depend on the views and requirements of individuals, a decision conference with a multi-disciplinary team was chosen as the appropriate way of providing reasoned weighting values.*

2.47 *Option 2 ‘On-Site Store’ was found to be the preferred option, .... A sensitivity analysis was subsequently carried out to determine whether or not the option ranking is robust to changes in the weightings of the study attributes and sub-attributes. The sensitivity analysis identified that the option ranking was robust to changes in the attribute weightings.*

2.48 *Option 2 ‘on-site store’ was found to be the preferred option because it was considered to be safer for public and staff; there would be less non-radioactive waste arising; less resource is predicted to be used during*

construction; and there would be less impact on traffic. It is also consistent with the general proximity principle.

2.49 On-Site Location for ILW Storage

Having selected on-site storage of retrieved and encapsulated wastes as the preferred high level strategy, a BPM was applied to the question of location. In order to determine a workable selection of on-site storage locations, the site was broken down into a number of areas for this study:

- Northern Area;
- RCA (Radiation Controlled Area);
- Western Area; and
- Eastern Area.

2.50 In addition, the storage of the ILW packages in an existing building was considered. This would be consistent with the waste management hierarchy: it would minimise the generation of wastes by not requiring a complete new structure, and would reuse an existing facility that will eventually be decommissioned. A range of buildings were initially considered but it was determined that the only feasible option would be the use of one of the reactor circulator halls.

**Table 4.2 Options Considered in the BPM**

Option	Description
Location Option North 1.	At the eastern end of the Northern Area of the site, situated near R2 and the former location of the site Administration Building
Location Option North 2.	At the western end of the Northern Area of the site, situated near R1 and towards the River Severn.
Location Option RCA 1.	Situated in between the two reactor buildings.
Location Option RCA 2.	Situated at the south east corner of the RCA close to the approach road for Berkeley Centre.
Location Option West.	Situated on the site of the Berkeley Nuclear Laboratories.
Location Option East 1.	At the northern end of the Eastern Area of the site, in the approximate location of the former site Administration Building.
Location Option East 2.	At the southern end of the Eastern Area of the site, in the former site car park area.

Design Option A	In addition to the location options identified above, it is also necessary to highlight the location that is specific to Design Option A, namely the location of circulator hall 2A.
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- 2.51 *Again the options were subject to screening based on the same constraints as were used for the BPEO, and as a result the ‘West’ location option was screened out on the basis that it was considered unlikely to receive regulatory approval. Option A was also screened out on the basis that it would be unlikely to gain regulatory approval; would not have the required storage capacity; and would not have a design life of at least 100 years.*
- 2.52 *... The study identified that the ‘North 1’ location option was preferred, .... Again a sensitivity analysis was carried out and the option ranking was found to be robust.*
- 2.53 *The study identified that option N1 was preferred for the following reasons:*
- furthest location from flood risk zone;*
  - distance from the Severn Estuary designated sites (with less disturbance to over-wintering birds);*
  - ease of construction close to main access road to site;*
  - least likely to interfere with other decommissioning activities, including final site clearance;*
  - sufficient space for plant and materials lay down areas etc.; and*
  - total cost.*
- 2.54 *Option N1 also had the advantage of not being located within the current inner fence. This inner area would not be desirable since a number of difficulties would be encountered during building construction, including that:*
- the number of productive hours within the working day would be reduced due to the lengthy entry and exit protocols for equipment, materials and personnel;*
  - any equipment deployed within the current inner fence would have the potential to become contaminated;*
  - prior to and during the works all areas would require radiological monitoring; and*
  - there is a greater number of underground services that would have to be avoided or re-located.*
- 2.55 *The exact location of the store within area N1 was then determined by consideration of the footprint of the former turbine hall and other underground services and structures. For example, the footprint of the former turbine was not considered desirable because the deep foundations for that building, which have been in-filled with concrete rubble etc, would give rise to greater technical difficulties in respect of foundation design and construction.*
- 2.56 ***Design Options of the Proposed Building***  
*The interim on-site storage of ILW packages could be either in the form of a new purpose-built storage building or if safe, feasible and appropriate, within*

existing buildings specifically converted for that purpose. However, as explained above, re-use of an existing building was screened out for a number of reasons. For a new building, two options were considered, the difference relating to how radiological shielding is achieved.

2.57 **Bulk Shielding**

*The principal feature of this design is that the store's external structure provides shielding for workers/ public outside the store. ...*

2.58 **Overpack Shielding**

*The principal feature of this design is that shielding is provided by individual concrete overpacks on each individual waste package, and the external walls of the store are not the principal means of shielding the waste packages. ...*

2.59 **Preferred Design**

*The bulk shielding option was chosen because it has better environmental performance due to being a smaller store, which results in less resource used in construction, and minimises landscape and visual effects. This design also performs better on technical and practical issues related to space: it leaves more room for other operations on site, and does not need space for the manufacture/ storage of overpacks.*

2.60 **External Materials and Colours**

Materials

*Aluminium and steel were the only materials considered for the cladding of the new building, based on proven experience with these systems. Aluminium was chosen for its durability and ease of maintenance despite its higher initial cost.*

2.61 Colours

*Various steel and aluminium cladding colours/finishes were considered by architects, landscape architects and Magnox Electric personnel, in the context of the site. The matter was also discussed with officers of Gloucestershire County Council in order to reach the final decision. The materials and the colours chosen for the cladding are intended to minimise the visual impact of the building. Close up the building will be seen from the surrounding low-lying countryside against a variable back drop of existing buildings, distant higher ground or sky. A green colour similar to the colour used to clad the reactor buildings near-by has therefore been chosen for the walls. The roof will be seen from much further away from the high ground of the Cotswold Escarpment and the edge of the hills by the Forest of Dean. Therefore, a darker neutral merlin grey colour for the roof has been chosen, which will be seen against a backdrop of the surrounding ground and Severn Estuary. ...*

2.62 **Air Quality and Dust**

**Conclusions**

*For the works phase, air quality (vehicle emissions) impacts upon the local road network have been predicted to be 'not significant'. ....*

2.63 *Fugitive dust issues during this phase of the ILW store development have also been assessed. Without mitigation the impact of dust emissions from the site and from vehicles is likely to be 'moderate' and potentially 'significant'. With mitigation in place, it is considered that the dust impact on sensitive receptors would be 'not significant'. ...*

2.64 **Ecology Conclusions**

*This assessment highlights the ecological importance of the habitats within, surrounding and immediately adjacent to the proposed ILW store site. The works phase has the potential to disturb wintering bird species utilising the Severn Estuary adjacent to the site. Because of the very small bird populations utilising that part of the estuary near to the Application Site, the impact is not considered to be significant. Although on this basis it is considered that mitigation is not required, where possible working methods and timings are suggested to reduce any potential effects upon wintering bird species.*

2.65 *In the absence of mitigation measures the works phase could potentially cause the accidental injury or death of great crested newts. The impact is potentially significant and a survey will, therefore, be undertaken prior to the works commencing in order to determine whether newts are actually present near to the Application Site. If present, mitigation measures are proposed to avoid the risk of injury or harm to great crested newts and to reduce the potential impact to 'not significant'.*

2.66 *During the post works phase there would be small habitat gains for nesting birds and great crested newts from the proposed tree and shrub planting. These beneficial impacts are assessed as being 'not significant'.*

2.67 **Geology, Hydrogeology and Soils Conclusion**

*It is considered that there is the potential for significant adverse impacts on the geological, hydrogeological and soils environment from the inadvertent spreading of any existing contaminated soils by a variety of mechanisms, and from spills or leaks of non-radioactive substances.*

2.68 *Therefore, mitigation measures have been proposed. The mitigation measures proposed relate to prior investigation to determine the presence or absence of existing contaminated soils in the build area (note: this has now been completed and no elevated levels of radioactive contamination were found); sampling of soils and groundwater as the works are undertaken; the adoption of good working practices and the application of relevant British Standards and Environment Agency pollution prevention guidance. ...*

2.69 *The effectiveness of the various mitigation measures will be monitored. It is possible that for some types of impact the existing environmental management processes used by the site and its regulators will be sufficient for this purpose, but the matter will be discussed in advance with the EA.*

- 2.70 *Removal of any contaminated soils during the excavation prior to building construction ... could be a significant benefit to the site and environment. ...*
- 2.71 **Landscape and Visual**  
Impacts during the Works Phase  
*Visual Impacts*  
*... This phase will include activities such as:*
- *the erection and use of construction equipment, including cranes (assumed height 30m) and scaffolding;*
  - *pile boring, excavation and the creation of temporary spoil mounds; and*
  - *general construction activity within the site, including construction plant and materials storage.*
- 2.72 *There will be no significant visual impact during the works phase from the majority of viewpoints. However, there will be a significant adverse visual impact on local views from the Severn Way long distance footpath, where views of construction activities will be clearly visible within the open landscape ...*
- 2.73 *There will be some additional lighting associated with the works during the hours of darkness at the start and end of the working day during winter months. This will comprise directional floodlighting in order to assist construction activities. However, impacts will be restricted to local viewpoints, and will not be significant in the context of other existing lighting on the site ...*
- 2.74 **Landscape Character**  
*The significant adverse visual impact on the Severn Way long distance footpath will result in corresponding impacts on the local landscape character area of the Severn Vale Grazing Marshes adjoining the site to the north, as a result of the works phase activities. There will, however, be no other significant impacts on landscape character, including that of the historic landscape of Whitcliff Park.*
- 2.75 **Proposed Mitigation**  
*...It is proposed that the temporary spoil mound and topsoil mound are seeded with grass in order to minimise their visual impact and to control aggressive weed growth.*
- 2.76 *In accordance with best practice and in order to contain the extent of illumination to those areas which are intended to be lit only, it is proposed that temporary construction lighting installed on site would be directional lighting...*
- 2.77 Impacts On Completion (entry to Care and Maintenance)  
*Visual Impacts*  
*...All significant existing buildings on the Berkeley nuclear licensed site, other than the reactor buildings, will have been removed by entry to care and maintenance, as part of the general decommissioning works outside the scope of this environmental statement. ...*

- 2.78 *At completion, there would be no significant visual impacts from the majority of viewpoints as a result of the new ILW store. However, there will be a significant adverse visual impact from the Severn Way long distance footpath to the north of the site ... This is largely due to the scale of the proposed building, which adds substantially to the massing of the existing reactor buildings. ...*
- 2.79 *Landscape Character*  
*The significant adverse visual impact on the Severn Way long distance footpath will result in corresponding impacts on the local landscape character area of the Severn Vale Grazing Marshes adjoining the site to the north, as a result of the new ILW store. There will, however, be no other significant impacts on landscape character or historic landscape.*
- 2.80 *Proposed Mitigation*  
*..., in order to soften the visual impact of the new ILW store where a significant visual impact has been identified from Viewpoint 8 on the Severn Way, and help to integrate the new building into the surrounding landscape, three tree planting belts are proposed to the north, east and west, .... This would also compensate for the existing small trees to be removed in order to facilitate construction of the ILW store.*
- 2.81 *Impacts 20 Years after Completion*  
*Visual Impact*  
*...At this period, the new ILW store on the site will be partially screened by the proposed tree planting belt, and there will be no significant visual impact 20 years after completion from any of the typical viewpoints.*
- 2.82 *Beneficial impacts would occur in views from a number of locations, due to the improvement in the view, resulting from screening of the existing reactor buildings, as well as the ILW store ... However, individually, none of these benefits would be significant.*
- 2.83 *By this period, tree planting will also have further reduced the extent of any low-level lighting visible from surrounding viewpoints.*
- 2.84 *Landscape Impacts*  
*There would be a significant benefit to existing vegetation, due to the maturing tree planting belts designed to screen views of the ILW store and enhance local landscape character. ...*
- 2.85 *Landscape Character*  
*The significant landscape benefit on existing vegetation will result in corresponding beneficial impacts on the local landscape character of the Severn Vale Grazing Marshes, as a result of the establishing tree belts.*
- 2.86 *Cumulative Impacts*  
*Some of the demolition of existing buildings and facilities on the combined Berkeley Centre / Berkeley nuclear licensed site may overlap with construction of the ILW store. However, since a worst-case scenario has been*

*adopted for assessment of ILW store construction impacts, with all activities taking place concurrently regardless of programme, the cumulative impact of these other demolition works is not anticipated to significantly increase the level of landscape and visual impact during the construction phase from that described here. Once demolition of existing buildings and facilities on the combined Berkeley Centre / Berkeley nuclear licensed site is complete, there will be landscape and visual benefits resulting from the reduction in built development. However, the remaining reactor buildings will continue to be dominant features within the locality, and the demolition of other buildings is not anticipated to significantly off-set the assessment of landscape and visual impact assessment for the proposed ILW store.*

**2.87 Noise and Vibration**

*Conclusions*

*Noise impacts have been predicted for each stage in the Berkeley ILW store development, based on the comparison with noise levels that would exist at the same times without development. The assessment has assumed plant operating the same part of the site, whereas in reality plant would be used intermittently and on different parts of the site, so actual noise levels may differ from those predicted. Given that the site compound is of a limited area, it is unlikely that noise levels would increase beyond those predicted as there is limited potential move equipment closer to receptors. However, it is not possible to more accurately predict noise at this time as the detailed methodology will be determined by the contractor that undertakes the work....”*

2.88 The applicant’s noise assessment concludes that noise impacts during the works phase are predicted to be significant on part of the Severn Way footpath and for two residential properties: Hamfield Farm and Woodlands Farm. These properties respectively would suffer a predicted ‘moderate’ and ‘slight’ noise impact magnitude. The applicant has therefore proposed noise mitigation measures to include the use of effective silencers, the appointment of a site contact and construction activity to be in accordance with British Standards 5228: ‘Noise and Vibration Control on Construction and open Sites’. ...

**2.89 “ Surface waters**

*Conclusions*

*Potentially significant effects on surface waters relating to the proposed development arise from non-radioactive contaminated water entering road/surface drains on site that lead to Conigre Pill / the Severn Estuary. Similar potentially significant effects could derive from any minor spills or leaks of chemicals, fuels etc. Mitigation has been proposed in respect of both issues. With this mitigation in place, it is anticipated that none of the adverse impacts will be significant. However, the effectiveness of the mitigation will be monitored. It is possible that the existing environmental management processes used by the site and its regulators will be sufficient for this purpose, but the matter will be discussed with the Environment Agency.*

2.90 The proposed internal floor level of the ILW store is 0.5m above the predicted 200 year tidal flood level including climate change by ~2080. The ILW store

*and its contents will at all times have a safety case to ensure and justify the safe operation of the facility. Further, that safety case is subject to periodic review at intervals agreed with the Nuclear Installations Inspectorate (normally once every ten years), at which time new information or circumstances will be taken into account. Therefore, there is a mandatory process which ensures that changes to flood risk are continually reviewed, and that any necessary actions arising are carried out in a timely manner. ...*

## **2.91 Traffic and Transport**

### *Conclusions*

*The impacts of the proposed development on the highway network have been assessed. Significant impacts may arise in Hamfield Lane (towards Ham) if this route is used by the additional contractors and in Salter Street due to the increase in numbers of HGVs on a link with sensitive receptors present.*

2.92 *A Travel Plan ... will be produced and implemented in an attempt to reduce the impact of vehicle movements to and from the site. This measure will seek to limit the scale of the impacts on the Hamfield Lane link by commuting contractors, as well as specify the route to be taken by HGVs.*

2.93 *It is important to note that by 2008 the total traffic from the combined Berkeley nuclear licensed / Berkeley Centre site will have reduced from 2006 and only a small increase in the total number of HGVs from 2006 is predicted.*

2.94 *There are no problems identified on the network with regards to its capacity and ability to deal adequately with the total traffic associated with the proposed development. Consideration of the accident figures for this area has not identified any particular accident cluster or deficiency of safety on the route that could be rectified by specific mitigation measures.*

2.95 *The only other mitigation measure thought necessary to control a potential problem associated with the proposed development is the installation of a wheel washing facility on site to ensure that HGVs leaving the site do not carry mud onto the adjoining highway. ..."*

## **2.96 Waste Recycling Action Plan**

The applicant has also submitted a Waste Recycling Action Plan which seeks to minimise, re-use and recycle the large quantities of waste materials produced during the construction of the proposed ILW. The following pertinent information from the Waste Recycling Action Plan applies:

*"It is estimated that about 6600m<sup>3</sup> of excavated material would be produced during the construction phase of the proposed ILW Store, of which about 50% is made ground. Due to the relatively small quantity involved, it is most likely that this will be reused on site for landscaping purposes. The main area of contamination (is) located down gradient from the area of the ILW store and are therefore unlikely to have an impact on the proposed development. ...."*

2.97 Since the original submission, the applicant has carried out further detailed investigative and sampling works in the proposed build area for the ILW store.

The findings confirm the analysis in the desk top study that there are no elevated levels of radioactive contamination within the proposed build area.

### **3.0 PLANNING HISTORY**

Planning application S.07/0141/CM for the construction of a temporary ILW store was granted planning permission by the County Council on 27 March 2007.

### **4.0 PLANNING POLICY**

Under Section 54A of the Town and Country Planning Act (1990) the Planning Authority must have regard to the development plan in considering planning applications unless material considerations indicate otherwise.

4.1 The introduction of the Planning and Compulsory Purchase Act 2004 introduces a new system of development plans defined as Regional Spatial Strategies and Local Development Documents. The new system is being brought into effect through a series of commencement orders and transitional arrangements apply until the full introduction of the Act. The effect of the transitional arrangements means that the Planning Authority continues to consider those development plans that existed on 28 September 2004 when determining planning applications. The transitional arrangements continue until 13 May 2007 or when a new policy expressly replaces an old policy by being published, adopted or approved.

4.2 The following development plans and guidance must be considered in determining this planning application:

#### **Regional Spatial Strategy (RSS)**

The Authority must consider the Regional Spatial Strategy once it is published, adopted or approved. From 28 September 2004, the adopted Regional Planning Guidance for the South West constitutes the RSS for the Region and is a material consideration in determining planning applications until it is replaced by the emerging RSS.

The Draft Regional Spatial Strategy for the South West 2006-2026, which has been issued for consultation, is also a material consideration in determining planning applications, although at this stage will have limited weight.

4.3 Regarding the issue of radioactive waste, the Draft RSS makes the following comments (paragraph 7.4.16):  
*“ Approximately 140,000 cubic metres of Intermediate Level Radioactive Waste (ILW) and Low Level Radioactive Waste (LLW) is stored in the South West. This includes wastes that will arise over the next 100 years from existing power stations and their decommissioning. A national policy review is currently underway on managing radioactive waste. The Government appointed the Committee on Radioactive Waste Management (CoRWM) in 2003 to recommend a long-term strategy for managing High Level Radioactive Waste (HLW), ILW and some LLW. ... Until the national reviews*

*are completed it is not appropriate to consider further details of possible management and disposal options for radioactive waste stored in the region within the context of the Draft RSS.”*

#### **4.4 Planning Policy Statement 9: Biodiversity and Geological Conservation**

Planning Policy Statement 9 (PPS 9) was published in August 2005 and it replaces PPG 9 on Nature Conservation. PPS 9 sets out policies on the protection of biodiversity and geological conservation through the planning system. PPS 9 (paragraph 1 (ii)) states that: *“ In taking decisions, local planning authorities should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; and to biodiversity ... within the wider environment.”*

#### **4.5 Circular 06/2005**

ODPM Circular 06/2005, which accompanies PPS9, was also published in August 2005. The Circular recommends that if the decision-taker concludes that a proposed development is likely to significantly affect a European site, they must make an appropriate assessment of the implications of the proposal for the site in view of the site’s nature conservation objectives. Paragraph 21 states that, *“In the Waddenzee judgment, the European Court of Justice ruled that a plan or project may be authorised only if a competent authority has made certain that the plan or project will not adversely affect the integrity of the site. That is the case where no reasonable scientific doubt remains as to the absence of such effects.”*

#### **4.6 Planning Policy Statement 10 (PPS10): Planning for Sustainable Waste Management (including the Companion Guide to PPS10)**

PPS10 encourages communities to take responsibility for their own waste and to enable waste to be disposed of in one of the nearest appropriate installations.

When determining planning applications PPS10 is a material consideration which may supersede policies in development plans and Waste Planning Authorities should therefore not place requirements on applicants which are inconsistent with the PPS.

#### **4.7 Planning Policy Statement 23 (PPS 23): Planning and Pollution Control**

PPS23 sets out the material considerations that should be taken into account determining planning applications for developments that may give rise to pollution. PPS23 notes that the planning and pollution control systems are separate but complementary.

PPS23 states that any air or water consideration is capable of being a material consideration in so far as it affects land use.

The planning system should focus on the whether the development itself is an acceptable use of the land, and the impacts of those uses, rather than the control of the processes or emissions themselves. Planning Authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced. They should act to complement but not seek to

duplicate it.

#### 4.8 **Gloucestershire Structure Plan Second Review: Adopted Plan (November 1999)**

The following policies are relevant to the proposed development:

Policy NHE.2 seeks to protect and where possible enhance biodiversity and protect internationally and nationally designated sites.

Policy NHE.7 states that development will not be permitted that would detrimentally impact on the scientific value, landscape setting and character of the Severn Estuary.

Policy WM.1 indicates that waste management facilities should operate on the basis that waste will be treated and/or disposed of by employing the best practicable environmental option for that waste stream.

Policy WM.6 – provision for disposal of Gloucestershire’s post-treatment, un-recovered waste residues.

#### 4.9 **Gloucestershire Structure Plan Third Alteration Deposit Draft (November 2002) & Proposed Modifications (July 2004 and January 2005)**

The Third Alteration had an Examination in Public in November/December 2003. Two sets of Proposed Modifications have been produced. In April 2005 a Secretary of State Direction was issued on the Plan. Due to this Direction, the Plan remains held in abeyance and will not be forwarded to adoption. The following policies are relevant to the proposed development:

**Policy SD.21** – need for waste management facilities

**Policy MR.4** – biodiversity

**Policy MR.8** – Severn Estuary

**Policy MR.9** – pollution impact

#### 4.10 **Gloucestershire Waste Local Plan (GWLP) adopted October 2004**

##### **Policy 16 – Special Waste Facilities**

Facilities for the additional handling, treating, processing or disposal of special wastes will be permitted if it can be demonstrated:

- That it would form part of a sustainable waste management system; and
- That it would meet the relevant criteria and policies of the development plan.

##### **Policy 37 – Proximity to other land uses**

Proposals for waste development will be determined taking into account such matters as the effect on the environment, occupants’ and users’ amenity and health, the countryside, the traditional landscape character of Gloucestershire, the local highway network, any hazardous installation and substance, and any adverse cumulative effect in combination with other development in the area. Where appropriate, suitable ameliorative measures shall be incorporated in the proposals to mitigate, attenuate and control noise, dust, litter, odour, landfill gas, vermin, leachate and flue emissions.

**Policy 2** (regional self-sufficiency), **Policy 3** (proximity principle), **Policy 6** (waste management facilities for other sites), **Policy 23** (internationally and

nationally designated sites for nature conservation), **Policy 33** (water resources pollution control) and **Policy 38** (hours of operation), **Policy 40** (traffic) and **Policy 42** (reinstatement) of the Gloucestershire Waste Local Plan also apply.

4.11 **Stroud District Local Plan 2001-2011 ('adopted' 2006)**

The Stroud District Local Plan is facing a High Court challenge concerning a housing allocation, but has been adopted for the purposes of development control. The following policies of the Stroud District Local Plan apply:

**Policy GE2** (minimising atmospheric and environmental pollution),

**Policy NE1** (protection of internationally designated sites),

**Policy TR1** (transport requirements for all developments).

**Policy BE 12** (development and the setting of a listed building)

**Policy NE 10** (development and the landscape character types within Stroud District)

**Policy NE 13** (landscaping for new development)

## 5.0 PUBLICITY AND REPRESENTATIONS

5.1 The application was advertised by site notice and a newspaper advert was placed in a locally circulating newspaper. A number of local properties were also sent 'near neighbour' consultation letters.

5.2 Berkeley Nuclear Licensed Site staff held a public exhibition in Lydney Town Hall and one in Berkeley Town Hall. In addition, the company produced colour information leaflets describing the planning application and operation of the site, and stating that public representations could be made to the County Council.

5.3 A representation has been received from a member of the public that raises the following issues:

- All the waste should be stored in a single, national site, although it is acknowledged that such a facility would not be available for some time;
- A planning condition is recommended to ensure that only Berkeley's waste is stored on the site;
- Asking whether the levels of the great flood of 1607 were considered in the design;
- Requesting that the existing boilers on the site be dismantled and removed from the site;
- A more compact site should be considered with the ILW store being located closer to the reactor buildings;
- Although the site compares well visually with the industrial site at Sharpness, nevertheless the proposed planting belt should be in a different location. The alternative location proposed by the respondent as a woodland screen is a block of planting approximately 140 metres to the north of that proposed in the application. It is argued that this alternative would be on better soil, would fit in better with surrounding habitats, and would maintain access to the slipway. In addition, the respondent wishes

to ensure that no artificial fertilisers or pesticides are used as they run an organic farm.

## **6.0 Consultations**

### **6.1 Stroud District Council**

Stroud District Council raise no objections to the proposal subject to planning conditions to prohibit the storage of waste from any source other than Berkeley, restricting noise from the site and relating to contaminated land.

### **6.2 Berkeley Town Council**

Berkeley Town Council supports the application.

### **6.3 Ham and Stone Parish Council**

Ham and Stone Parish Council does not support or object to the proposed development but makes the following comments:

*“ We understand the need for a waste store due to a lack of a national depository and the site has explained its reasons. However we feel that it would be better sited between the two reactor buildings which would be less intrusive on the landscape.”*

### **6.4 Lydney Town Council**

Lydney Town Council has no observations to make on the proposal.

### **6.5 Forest of Dean District Council**

Forest of Dean District Council has no objections to the proposal subject to the provision that the store is only used for the waste from the decommissioning of the Berkeley site.

### **6.6 The Environment Agency**

The Environment Agency makes the following comments:

*“ The Environment Agency undertake regulatory activities at this site, under the Integrated Pollution Prevention Control regulations. We do not consider that the proposed development will give rise to unacceptable pollution as the activities will be regulated. However we would wish to see a suitable scheme in place to avoid pollution during the construction phase. As such we recommend that if planning permission is granted the following condition is imposed:*

#### **CONDITION**

*No development approved by this permission shall be commenced until a scheme for prevention of pollution during construction has been approved in writing by the Local Planning Authority. The scheme should include details of; (a) site security; (b) fuel and oil storage, bunding, delivery and use; (c) emergency plan for dealing with minor and major spillage; (d) disposal of contaminated drainage, including water pumped from excavations.*

#### **REASON**

*To ensure that construction of the proposed development will not cause pollution of controlled waters. “*

#### **6.7 Natural England**

Natural England (NE) originally objected to the proposed development on the grounds of insufficient information. However, the applicant's agent (Entec) supplied additional information and in the light of this NE makes the following comments:

*“ Natural England is now of the opinion that this project (which now includes the identified conditions to avoid impact) is not likely to have a significant effect on the features for which the Severn Estuary Ramsar Site and SPA/European Site has been designated nor will it be likely to be damaging to the features for which the SSSI has been designated.*

*Natural England therefore has no objection to the grant of planning permission for this project subject to the inclusion of and agreement to the conditions identified by the Entec report.”*

6.8 These conditions refer to the construction of the bund, the equipment to be used and the direction of proposed lighting.

#### **6.9 Health Protection Agency**

The Health Protection Agency were consulted but have not replied. Therefore it is assumed that they have no objections to the proposal.

#### **6.10 Nuclear Installations Inspectorate (NII)**

The NII (which is an agent of the Health and Safety Executive) makes the following comments:

*“ Please note the HSE are the Competent Authority for the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended) (EIADR). These regulations require assessment of the potential environmental impacts of projects to decommission nuclear power stations or nuclear reactors and the requirements of these regulations are similar to those required under the Town & Country Planning (EIA) Regulations. It should be noted that Regulation 13 of EIADR applies to changes or extensions to decommissioning projects that may have a significant adverse effect on the environment (SAEE). When there are changes or extensions that may have significant adverse effects on the environment, the licensee must apply to HSE for a determination as to whether an environmental impact assessment is required. The building of the ILW store at Berkeley is a change to the original decommissioning plan and therefore subject to Regulation 13 of the EIADR. The licensee has applied to HSE for a determination as to whether an environmental impact assessment is required under EIADR for the proposed change (the building of an ILW store) to the decommissioning project and this will be reviewed by HSE in due course.*

*The impacts associated with the ILW store are limited to the construction phase of the project. The environmental statement does not provide details of*

*the impacts associated with the demolition of the ILW store. Under EIADR we would expect an assessment of the impacts associated with demolition of the ILW store.*

*The environmental statement should consider the cumulative effects of the decommissioning project to existing development of works or developments in the area even when unrelated to the project. The cumulative effects of this development are mainly focussed on the decommissioning and dismantling activities that are being undertaken at the Berkeley site. Under EIADR we would expect an assessment of the cumulative impacts associated with any other developments in the area (outside the licensed site)."*

#### **6.11 The County Highways representative**

The County Highways representative raises no objections to the proposed development subject to the imposition of planning conditions relating to the following: a temporary parking area for site operatives being laid out, the provision of vehicle wheel cleaning facilities being provided, the provision of a signing and routing schedule.

#### **6.12 Gloucester Harbour Trustees**

Gloucester Harbour Trustees make the following comments:

##### *“ 1. Lighting of the works*

*If work is to be carried out at night, or if the works are to be floodlit during the hours of darkness, we seek reassurance that any lighting is arranged to avoid any adverse impact on navigation in the river. We recognise, of course that the proposed works are some distance away from the river bank and that the risk of disturbance is low.*

##### *2. Access to the river bank and slipway*

*For many years we have enjoyed the informal consent of BNFL-Magnox and their tenant farmer to access the slipway on the river bank via the gate and field at the rear of the Sports and Social Club. The route taken is along the edge of the field, adjacent to the nuclear site perimeter fence. This is where the most suitable (driest) ground for vehicle movements may be found. We note that drawing BRK/PA/90 shows an area of planting (area A) and fencing which, as shown, would make it difficult to continue to access the slipway over the drier ground at the edge of the field.*

*The drawing shows a 5 metre sterile strip between the perimeter fence and the planted area. We would be grateful if consideration could be given to the provision of a gate at each end of this strip so that access could be maintained for our vehicle and boat. The same route is also occasionally used by the Severn Area Rescue Association for response to emergencies in the river."*

## **7.0 OBSERVATIONS OF THE HEAD OF PLANNING AND DEVELOPMENT**

### **7.1 Archaeology**

The County Archaeologist has stated that there are no archaeological issues arising from this scheme and has no further observations to make on the scheme.

## 7.2 **Landscape**

The County Council's landscape consultants raise no objection to the proposed development, and consider that the ES provides a comprehensive and realistic analysis of the potential impacts of the proposed development. The twenty years plus maturity time envisaged for the vegetation to provide reasonable mitigation and the species and planting matrices are appropriate. However, the landscape consultants commented that there are no proposals for the treatment of the area for temporary stockpiling once these are removed. In addition, it was considered that locating the ILW store within the N1 area but closer to the reactor buildings would be beneficial for the overall visual impact. As the long face of the ILW store presents a large, unbroken elevation, consideration should be given to breaking this down into smaller units through the use of colour banding. In addition the lack of a shadow line between the roof and vertical cladding should be considered. It was also considered that the design statement should cover the removal of the building.

## 7.3 **Ecology**

The Principal Ecologist raises no objections but recommends that Natural England must be consulted to ascertain whether an appropriate assessment is required due to the proximity of the Severn Estuary European Marine Site. He also recommended that a survey of potential breeding ponds for Great Crested Newts be undertaken and an appropriate method statement and mitigation measures, such as newt proof fencing, be undertaken as required. He also considers that the landscaping scheme, which includes some limited tree and shrub planting will provide a little additional wildlife habitat.

## 7.4 **Planning**

This application is for the construction of an ILW store that will be located within the Berkeley nuclear licensed site, to the north of the two reactor buildings. The ILW will be housed in up to 1,200 Nirex standard packages. The radiological screening will be provided by the concrete walls of the ILW store that are approximately 1.3 metres in thickness. The ILW is already stored on the Berkeley site in an unconditioned form and this proposal will provide a better, long-term storage facility pending the future construction of a national repository for this waste. There will be no importation of waste on to the Berkeley Nuclear Licensed Site for storage in the proposed facility. This will be ensured through the use of an appropriate planning condition.

7.5 The dimensions of the building are 83 m long, 24.5 m wide and 18 metres in height, which are considered sufficient to house up to 1200 Nirex standard packages. Approximately two thirds (1,064 m<sup>2</sup>) of the building will be used to store the ILW, and the western third of the building will be used for a service area, inspection cell and receipt bay. The Nirex standard packages will consist of a mixture of 3m<sup>3</sup> boxes, 3m<sup>3</sup> drums and 500 litre drums in a four-drum stillage. These will be stored in 8 rows of 25, and stacked 6 high. A nominal gap of 450mm will be left between each stack to allow for inspection.

7.6 The applicant has provided further information to clarify the actual storage and operational arrangement for the Nirex packages within the ILW store. The concrete walls of the ILW store will be approximately 1.3 m thick and therefore due to the concrete 'box' design that provides the radiological shielding, the total height of the building within which the ILW packages will be stored is approximately 12 metres. The height of all the packages piled on top of each other is 7.2m. A crane will be needed to position the packages, and its rails are set at 9.25m above the floor level to allow for the lifting head to manoeuvre the Nirex packages. The height of the crane bogie on the main gantries of the ILW store is 11.76 m above the ILW floor. In addition, access for inspection of the building is needed between the concrete inner box and the external cladding. These requirements mean that a building of the dimensions that have been applied for is required to store Berkeley's ILW.

#### 7.7 **Highways considerations**

Any highways impacts associated with this proposal will be almost entirely during its construction phase. After that, the vehicle movements associated with the facility will be negligible. This application will involve the importation of sufficient concrete and building materials to construct the ILW store and the piling that is required. The applicant has stated that the vehicles will access the site through Berkeley Town Centre. The County Highways Development Co-ordinator recommends that no objection be raised subject to the imposition of planning conditions, including a signing and routing scheme. Therefore I consider that, subject to the imposition of suitable conditions, the proposed development accords with Policies 39 and 40 of the Waste Local Plan.

#### 7.8 **Visual Impact and Landscaping**

The proposed ILW store will be approximately 83 metres long, 24.5 metres wide and with a height of 18 metres to the apex of the roof. The proposed materials are profiled metal cladding in a moorland green colour for the walls and aluminium standing seam colour merlin grey for the roof of the ILW store. The first 2 metres of the outer walls of the building will be constructed of Staffordshire Engineering brickwork. It is proposed that there will be a roller shutter door in both the south and west elevations of the building, and this will be merlin grey in colour. The roof will be roll over in style and will be approximately 2 metres in height from the apex to the eaves. The gutters and rain water pipes are proposed to be metal and in a mid green colour. The building will in effect resemble a large agricultural style building, and will be orientated so that its short axis faces towards the Severn Estuary. The existing reactor buildings are approximately twice the height of the proposed ILW store. The applicant is willing to accept the landscape consultant's recommendation for bands of colour to be used if appropriate, and this will be addressed through a planning condition requiring approval of external materials.

7.9 When viewed from the north the ILW store will be seen within the context of the existing reactor buildings and other buildings on the Berkeley site, and these buildings will screen the ILW store when viewed from south of the Berkeley site. The most significant visual impact will be the view of the ILW

store from part of the Severn Way. However, this will be a transitory impact as walkers traverse along the footpath. Due to the distance of the summerhouse from the ILW store, the ILW's orientation, proposed landscaping and the nature of the surrounding existing buildings, I do not consider that the proposed ILW store will have a significant impact on the setting of the listed summerhouse. In visual terms this proposal needs to be considered in the context of the overall Berkeley site. The Council's landscape consultants consider that the submitted landscape assessment is realistic and notes that the impact will be ameliorated as the proposed landscaping matures.

- 7.10 It was argued by the landscape consultants and Ham and Stone Parish Council that in landscape terms it would be beneficial if the site of the ILW store was located closer to the reactor buildings as this would reduce the fragmentation of the three buildings when viewed from the west, across the river, or the east. However, the applicant has indicated that this would be difficult to achieve as it would entail splitting the site construction area and would involve construction on a part of the site where there were previous underground works of existing and demolished structures and services. These would be likely to require inspection during the site's Care and Maintenance period which would not be possible if the ILW store was built over them. In addition, the location for the ILW store is the highest part of the Berkeley site and therefore less susceptible to flooding. Suitable planning conditions can be imposed relating to aftercare of the landscaping and the applicant is confident that the eventual dismantling of the ILW store would not affect the then mature landscaping in its proximity.
- 7.11 The proposal by the local farmer for the landscaping belt to be moved approximately 140 metres to the north of its proposed location has been assessed by the County's landscape consultants. They consider that whilst this may provide improved screening from the Severn Way footpath to the north of the ILW store, users of this path are transient and short term receptors. Conversely, it would increase views from across the Severn and could act as a visual funnel for views from the Lydney area. In addition, the applicant has confirmed that access to the strip of land between the perimeter fence and proposed landscaping will be maintained for the Harbour Trustees and the Severn Area Rescue Association. A formalising of these arrangements is being discussed with the Nuclear Decommissioning Authority. The standard five years aftercare condition would help to protect against any failings in the landscaping scheme, and the applicant has given a written undertaking that the organic status of the farm would not be jeopardised by the use of inorganic fertilisers or pesticides. This should be included as a commitment in the landscaping aftercare scheme that will be required as a planning condition.
- 7.12 This issue of specific colours and choice of cladding materials can be addressed through the imposition of a suitable planning condition. Therefore I consider that with the provision of suitably worded conditions, this proposal will accord with Policy 37 of the Waste Local Plan and Policies NE 10 and NE 13 of the Stroud District Local Plan.

### 7.13 **Ecological considerations**

The proposed ILW store is located near to the Severn Estuary (a Ramsar site and SPA) and Natural England have raised concerns about the possible impact of the construction and lighting of the building on nesting and migrating birds. However, the proposed storage mound will provide a degree of noise and visual screening of the construction operations from the SPA and the area of the Berkeley sector of the SPA directly adjacent to the Nuclear Licensed site is not particularly significant for over-wintering birds. The applicant has indicated that the piling works will be undertaken with rotary bores rather than pneumatic hammers in order to minimise noise disturbance. The construction period will be completed as much as possible outside of the main bird over-wintering season or when suitable noise and visual mitigation is in place. In addition, directional lighting will be used to avoid unnecessary light spillage. The applicant has provided a report by Entec and their recommendations have been agreed by Natural England. All lighting will be on the landward side of the bund and pointed downwards and away from the Severn Estuary. A planning condition requiring a scheme for bund construction and mitigation will be required as part of this consent.

- 7.14 A report submitted by the applicant's ecological consultant indicated that a few Great Crested Newts were present in a pond to the north of the application site. However, a suitable newt proof fence and a hand search of the site area prior to the commencement of construction operations will afford sufficient protection against any adverse impacts. Natural England and the County Ecologist are satisfied that with appropriate planning conditions, the proposed building is acceptable. This proposal is therefore in accordance with PPS 9 and Policy 23 of the Waste Local Plan, Policies NHE2 and NHE7 of the Structure Plan Second Review, and Policy NE1 of the Stroud District Local Plan.

7.15 **Restoration and Aftercare**

This application is for a building that is envisaged to be on the site until at least 2040, and which has a design life of 150 years. In response to CoRWM's recommendation, the UK Government has stated that the design of new stores should allow for a period of interim storage of at least 100 years to cover uncertainties associated with the implementation of a geological repository. This is part of the 'Three Box' strategy for the site with the other two remaining buildings being the reactor buildings. Following that period the building will be removed from the site and eventually the entire site will be restored according to the overall decommissioning strategy for Berkeley Nuclear Licensed Site, which is currently subject to public consultation. The current intention is that the area occupied by the ILW store will be returned to grass. The decommissioning of the site is specifically covered in the licence that the applicant will need to obtain from the Nuclear Installations Inspectorate under the terms of the Environmental Impact Assessment for Decommissioning Regulations 1999.

7.16 **Pollution and Flood Risk**

PPS 10 is specific that Waste Planning Authorities should not seek to duplicate other licensing regimes. This application will also need to be licensed by the Environment Agency, the Health and Safety Executive and the

Office for Civil and Nuclear Security. The ILW material is currently held on the Berkeley site and this application does not propose to import any additional waste material. In terms of flood risk, the ILW is currently stored within underground vaults on the site and is therefore currently more susceptible to flooding than if it was within the ILW store. One of the key locational considerations for the ILW store is that this is the highest part of the Berkeley Nuclear Licensed site. Although the application has not been determined against the levels of the great flood of 1607, the 1 in 10,000 year flood levels have been assessed and these would be below the floor vault level. During the course of the ILW's operational period, the storage system will be subject to regular scrutiny through other licensing regimes, and this will assess the ongoing risk of flooding as a result of global warming. There have been no objections to the proposed development from any of the pollution control agencies, and I consider that this proposal accords with Policy 33 of the Waste Local Plan and Policy GE2 of the Stroud District Local Plan.

7.17 **Human Rights** - From 2<sup>nd</sup> October 2000 the Human Rights Act 1998 has the effect of enshrining much of the European Convention on Human Rights in UK law. Article 8 of the Human Rights Act 1998 guarantees a right to respect for private and family life, and Article 1 of the First Protocol guarantees the right to peaceful enjoyment of possessions. However, this proposal has been widely consulted upon. There is one objection from a member of the public who has raised concerns about amenity and environmental concerns. I consider that with the use of conditions to mitigate any potentially adverse effects of the development, that there are no justifiable planning grounds to refuse this application. I am of the opinion that the proposal would not prejudice such rights and that there is sufficient justification for interference with these rights.

7.18 **Conclusions and summary reasons for grant of planning permission and relevant development plan policies and proposals**

This application is for the construction of a building to house Intermediate Level Waste (ILW) until a national repository or disposal facility becomes available. The ILW store has a design life of 150 years. This store will only house ILW that is already within the Berkeley Nuclear Licensed Site, and there will be no importation of waste material from outside the Berkeley site. The main issues would appear to be the potential for pollution, the possible impact on the Severn Estuary, the visual impact of this building and the impact of construction traffic. There have been no objections from any of the statutory consultees or members of the public. The applicant has justified both the provision of an on-site facility and the exact location within the overall Berkeley site. I consider that overall this facility will reduce the risk of pollution and, with appropriate mitigation measures, will not give rise to a significant visual or ecological impact. Therefore I consider that this application is acceptable and accords with the relevant development plan policies, particularly Policies 16, 23, 37 and 40 of the Gloucestershire Waste Local Plan. This application has been determined in accordance with the Town and Country Planning Acts, and in the context of the Government's current planning policy guidance and the relevant circulars, together with the relevant Development Plan policies, including the following:

Gloucestershire Structure Plan Second Review – Policies WM.1, WM.6, NHE.2 and NHE.7

Gloucestershire Structure Plan Third Alteration Deposit Draft and Proposed Modifications - Policies SD.21, MR.4, MR.8 and MR.9.

Gloucestershire Waste Local Plan (adopted October 2004) – Policies 1, 2, 3, 16, 23, 33, 37, 38, 40 and 42.

Stroud District Council Local Plan adopted 2006– Policies NE1, GE2, TR.1, BE12, NE10 and NE13 .

The Council is of the opinion that the proposed development gives rise to no material harm, is in accordance with the development plan and that there are no material considerations that indicate that the decision should be refused.

## **8.0 RECOMMENDATION**

That planning permission is granted for the reasons set out in this report and summarised in paragraph 7.18, and subject to the following conditions:

### **Commencement**

1. The development to which this permission relates shall be begun not later than the expiration of 3 years beginning with the date of this permission. Written notification of the date of commencement shall be sent to the Waste Planning Authority within 7 days of such commencement.

**Reason:** To accord with the provisions of section 91(1) of the Town and Country Planning Act 1990, as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.

### **Duration**

2. The Intermediate Level Waste store hereby permitted, together with all the waste stored therein, shall be removed from the site within 3 years, or such longer period as may be agreed in writing with the Waste Planning Authority, of a national facility for the long term management of Intermediate Level Waste, or alternative means of off-site storage or disposal, becoming available. Written notification of the date of such facility or alternative means of off-site storage or disposal shall be sent to the Waste Planning Authority within 7 days of such facility, storage or disposal becoming available.

**Reason:** To comply with the requirements of Section 72(5) and paragraph 1 of part 1 of Schedule 5 to the Town and Country Planning Act 1990.

### **Definition of Permission**

3. This permission relates to the land outlined in red (“the site” ) on drawing number BRK/PA/20 Version D, dated March 2007.

**Reason:** To define the planning permission so that the development is carried out in accordance with the planning submission.

### **Working Programme, Phasing and Direction of Working**

4. Unless otherwise agreed in writing by the Waste Planning Authority, or varied by other conditions of this consent, the construction and operation of the building and the restoration and aftercare of the site shall be carried out in accordance with the submitted application forms, environmental statement and other supporting information for this application and drawings reference BRK/PA/40 version E dated March 2007, BRK/PA/50 version E dated March 2007, BRK/PA/60 version D dated March 2007 and BRK/PA/90 version A dated March 2007.

**Reason:** To adequately control the development and minimise its impact on the amenity of the local area in accordance with Policies 16, 23, 37, 40 and 42 of the Gloucestershire Waste Local Plan.

5. Prior to the commencement of development, a scheme detailing both the construction and removal of the proposed soil and subsoil storage mounds as illustrated on Plan BRK/PA/40 Version E dated March 2007, and specifying appropriate noise and visual mitigation for the Severn Estuary Special Protection Area during construction operations, shall be submitted to and approved in writing by the Waste Planning Authority. Thereafter the approved scheme shall be implemented within the approved timescales.

**Reason:** In the interest of the amenity of the area and in order to minimise the risk of disturbance to bird populations in accordance with Policies 16 and 23 of the Gloucestershire Waste Local Plan, Policy NHE.2 of the Gloucestershire Structure Plan Second Review and Policy NE1 of the Stroud District Local Plan.

### **Buildings and Plant**

6. Notwithstanding the provisions of part 17 of schedule 2 of the Town and Country Planning (General Permitted Development) Order, 1995 (or any order amending, replacing or re-enacting that order), no fixed plant or machinery, buildings, floodlighting or structures shall be erected, extended, installed or replaced on any part of the site without the prior written approval of the Waste Planning Authority.

**Reason:** To protect the amenity of the local environment, and in accordance with Policies 37 and 42 of the Gloucestershire Waste Local Plan.

### **Hours of Working**

7. Except in emergencies where operations are required to protect life, limb or property, or unless otherwise agreed in advance and in writing with the Waste Planning Authority, construction operations (including the manoeuvring, loading or unloading of vehicles) shall only take place between the hours of:

07:30 - 18:00 hours Monday to Friday

07:30 - 18:00 hours Saturdays

07:30 - 14:00 hours Sundays and Bank Holidays

**Reason:** To protect the amenity of the local environment, and in accordance with Policy 38 of the Gloucestershire Waste Local Plan.

### **Importation of Waste Material**

8. The Intermediate Level Waste store hereby permitted shall only be used for the storage of Intermediate Level Waste materials arising from the Berkeley Nuclear Licensed Site, and there shall be no importation of any waste materials to the Berkeley Nuclear Licensed Site at any time.

**Reason:** To define the scope of this consent and to protect the amenity of the local environment, and in accordance with Policies 33 and 37 of the Gloucestershire Waste Local Plan and Policy GE2 of the Stroud District Local Plan.

### **Access, Traffic and Protection of the Highway**

9. No vehicles leaving the site shall enter the public highway unless their wheels and chassis are clean, to prevent materials being deposited on the highway.

**Reason:** In the interests of highway safety and to accord with Policies 39 and 40 of the Gloucestershire Waste Local Plan.

10. No site works shall commence until, such time as a temporary car parking area for site operatives and construction traffic has been laid out and constructed within the site in accordance with details to be submitted to and agreed in writing with the Waste Planning Authority and that area shall be retained available for that purpose for the duration of building operations.

**Reason:** To ensure that the access roads in the vicinity of the site are kept free from construction traffic in the interests of highway safety and to accord with Gloucestershire Waste Local Plan Policies 39 and 40.

11. Prior to the commencement of any site construction works, vehicle wheel cleaning facilities shall be provided on site in accordance with details to be submitted to and approved in writing by the Waste Planning Authority, and thereafter be maintained for the duration of the site works.

**Reason:** To ensure that mud and earth deposits are not brought onto the public highway in the interests of highway safety and to accord with Policies 39 and 40 of the Gloucestershire Waste Local Plan.

12. Prior to the commencement of construction works a signing and routing schedule detailing advisory construction/works and accessing arrangements, shall be submitted to and agreed in writing by, the Waste Planning Authority. The signing and routing shall be erected and maintained as such thereafter for the duration of these works.

**Reason:** In the interests of highway safety in accordance with Policy 40 of the Gloucestershire Waste Local Plan.

### **Environmental Protection**

13. No development approved by this permission shall be commenced until a scheme for the prevention of pollution during construction has been approved in writing by the Waste Planning Authority. The scheme should include details of; (a) site pollution security; (b) fuel and oil storage, bunding, delivery and use; (c) an emergency plan for dealing with minor and major spillage; (d) disposal of contaminated drainage, including water pumped from excavations. Thereafter, the approved scheme shall be implemented.

**Reason:** To ensure that construction of the proposed development will not cause pollution of controlled waters in accordance with Policy 33 of the Gloucestershire Waste Local Plan and Policy GE2 of the Stroud District Local Plan.

14. All reasonable steps shall be taken to minimise noise from vehicles and machinery, and in particular (but without prejudice to the generality of the foregoing) efficient silencers shall be fitted to and used by all vehicles and machinery on the site.

**Reason:** To protect the amenity of the local environment in accordance with Policies 16 and 37 of the Gloucestershire Waste Local Plan.

15. Prior to the commencement of development the details of any construction-related floodlighting to be erected on the site shall be submitted to, and approved in writing by, the Waste Planning Authority. Thereafter only the approved details shall be implemented.

**Reason:** To protect the amenity of the local environment and minimise disturbance to bird populations in accordance with Policies 23 and 37 of the Gloucestershire Waste Local Plan.

16. Within 6 months of the date of this consent, samples of all external materials for the roof and walls of the building shall be submitted to, and approved in writing by, the Waste Planning Authority. Thereafter only the approved materials shall be used.

**Reason:** To protect the amenity of the local environment in accordance with Policy 37 of the Gloucestershire Waste Local Plan.

17. Within 6 months of the date of this consent, a scheme depicting all external lighting shall be submitted to, and approved in writing by, the Waste Planning Authority. Thereafter the approved scheme shall be implemented.

**Reason:** To protect the amenity of the local environment and minimise disturbance to bird populations in accordance with Policies 23 and 37 of the Gloucestershire Waste Local Plan, and Policy NE1 of the Stroud District Local Plan.

18. Any above ground storage tanks should be sited on an impervious base and surrounded by a suitable liquid tight bunded compound. No drainage outlet should be provided. The bunded area should be capable of containing 110% of the volume of the largest tank and all pipes, draw pipes and sight gauges should be enclosed within its curtilage. The vent pipe should be directed downwards into the bund.

**Reason:** To prevent pollution of the water environment in accordance with Policies 33 and 37 of the Gloucestershire Waste Local Plan.

#### **Landscaping and aftercare**

19. The landscaping scheme as depicted on plan BRK/PA90 Version A dated March 2007 shall be implemented within the first available planting season following the commencement of development. Within five years of planting, any trees, shrubs, or other plants that die or become diseased, are removed or damaged, shall be replaced in the first available planting season with others of a similar size and species in accordance with the details of the approved scheme.

**Reason:** In the interests of visual amenity in accordance with Policies 37 and 43 of the Gloucestershire Waste Local Plan and Policies NE 10 and NE13 of the Stroud District Local Plan.

20. An aftercare scheme, to include details for the long-term maintenance of the proposed landscaping and the treatment of the land following the removal of the temporary storage mounds, shall be submitted for the

written approval of the Waste Planning Authority not later than two years from the date of this consent. The scheme shall be implemented as approved unless any variation is agreed in writing with the Waste Planning Authority.

**Reason:** In the interests of the amenity of the local area and to ensure that the landscaping and restoration is successful in accordance with Policies 42 and 43 of the Gloucestershire Waste Local Plan and Policies NE 10 and NE 13 of the Stroud District Local Plan.

**Notes to applicant**

The Highway Authority will seek to recover extraordinary highway maintenance payments in accordance with the provisions of Section 59 of the Highways Act 1980.

The neighbouring farm is organic and therefore the applicant is advised that inorganic fertilisers, herbicides or pesticides should not be used in association with the landscaping and its aftercare.

**BACKGROUND PAPERS:**

Application form, plans and supporting information. Consultation responses.

**CONTACT OFFICER:**

Gavin Jones, Principal Planning Officer, 01452 426884  
Gillian Parkinson, Team Manager Environmental Services 01452 425212

<b>Consultee</b>	<b>Time taken (weeks)</b>
Government Office for the South West	1 week 1 day
Stroud District Council	1 week 6 days
Forest of Dean District Council	13 weeks 5 days
Berkeley Town Council	1 week 6 days
Ham and Stone Parish Council	2 weeks
Lydney Town Council	3 weeks 1 day
Environment Agency	11 weeks 1 day
Health and Safety Executive (NII)	8 weeks 6 days
Landscape consultants	1 week 3 days
Health Protection Agency	No reply
Natural England	7 weeks 5 days
Harbour Trustees	3 weeks
County Archaeology	5 weeks 1 day
County Ecology	2 weeks 5 days
County Highways	2 weeks 6 days
<b>Time taken</b>	<b>15 weeks 4 days</b>