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**Response to  
Safeguard International's  
Environmental Statement  
on the  
Culham Radioactive  
Waste Transfer Station**

**Report prepared for**

**Local parish council's ad hoc consortium**

November, 1995

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# **Response to Safeguard International's Environmental Statement on the Culham Radioactive Waste Transfer Station - EXECUTIVE SUMMARY**

## **Introduction**

This report has been produced on behalf of an ad hoc consortium of local parish council and local residents, including the parishes of Culham, Clifton Hampden, Dorchester, Kennington, Long Wittenham, Nuneham Courtenay, Radley and Sutton Courtenay. It also has been produced on behalf of the CPRE. The report is in response to the environmental statement submitted by Safeguard International in support of their planning application for a radioactive waste transfer station on the Culham Laboratory site.

As well as drawing on the information presented in the environmental statement, I have drawn on information submitted by Safeguard International to South Oxfordshire District Council and other regulatory bodies in order to produce this report.

## **Review of the environmental statement**

**It is my opinion that the statement as it currently stands does not conform to the requirements for an environmental statement** - rather it represents the form often used in license applications under the Radioactive Substances Act. **As a general appraisal, it is difficult to see exactly how the requirements set out in the environmental assessment regulations are met - for example, there is no consideration of alternative processes and sites.**

**As it stands, the non-technical summary is not an adequate explanation of the content of the environmental statement.** For example, there are insufficient details of the various assessments of radioactive discharges to air and water. No attempt has been made to summarise or interpret the additional information on the hazardous substances or the operational procedures discussed in the main statement. Also there were no location maps given in the summary - this is a major failure on the part of those preparing the statement since a location plan and design/building illustration must form a key part of any summary.

With reference to the 'development proposals' section of the statement, I must make observations on the accuracy of the conclusions drawn on the 'site and surroundings'. Primarily, **there is no evidence that the existing building is suitable - no building survey has been produced to show that the structure is capable of performing under the loads/stresses of the materials stored within it.** It is noted that the building, 'was formerly a vehicle workshop', however no age is put on the building. This is important in relation to the structural integrity of the development.

Much of the 'process description' section provides background information on the operation of the facility. My main concern here is that the figures for the throughput of waste do not balance. From the figures within the document it is stated that 80m<sup>3</sup>/yr of waste *could* be sent for incineration, **if** all the letters of intent furnished by the various incinerator operators are honoured, what happens to the other waste accepted for storage is not clear from the

description given.

I must also dispute the phrase, 'high temperature incineration', in many parts of the document. The environmental statement states, '*...plants that will provide high temperature incineration for the safe destruction of clinical low-level radioactive waste*'. This, to the average member of the public, would indicate that the radioactive part of the waste is destroyed. This is not true - **it is impossible to destroy radioactive materials by any chemical or combustion process. The radioactivity is merely distributed to other environmental media by incineration or landfill.**

Much of the information in the 'operation procedures' section is background, relating more to operational and licensing issues rather than land use planning or environmental impact.

Within Table 4 it is interesting to note that there is no proposal for environmental monitoring around the facility to check and track the background radiation levels over time. This is important in the case of accidents (to assess the possible level of release), or to track 'fugitive leaks' in the site drains, and the active air extraction system. Checking within the walls of the facility only will not give a meaningful picture of what's happening outside. I also see problems with the reliable operation of the high-efficiency air filters because of problems relating to leak or puncture detection.

With regard to the 'recycling' of radioactive waste, no waste 'recycling' routes have been identified within the environmental statement, or any of the documentation produced by Safeguard International since submitting the planning application in 1994. Given that all radioactive substances decay, it is difficult to see how useful isotopes could be economically extracted from the majority of radioactive waste or spent radioactive sources.

Finally - fire. Section 3.9.2 is entitled, '*probability of fire at the proposed facility*'. However, in the text there is no discussion of relative probabilities or risk. The word, 'unlikely', is actually meaningless in this context. Merely removing ignition sources within the facility will not prevent fire. It might be possible, where chemical/solvent mixtures are not fully known, to get an exothermic chemical reaction which could initiate a fire. Some materials under certain conditions may spontaneously combust. We must also consider the 'human' element - smoking may be banned within the facility, but unless the measures normally adopted within the explosives industry are adopted to prevent the build-up of static electricity or sparks (e.g., from a dropped hammer), it is very difficult to remove accidental sources of ignition.

Although there has been much consideration of the radiological effects of airborne discharges within the 'atmospheric emissions' section - which you would expect as the environmental statement has been prepared by a health physics department - there is little detail on the exact method by which discharges have been modelled, and what assumptions have been used in this modelling. In terms of the modelling of the stack releases, it is difficult to interpret exactly how the data was collated - in particular what assumptions were made in the process. For example:

- The meteorological conditions selected for dispersion modelling are '*representative of weather conditions for a non-coastal southern England site*'. This is a rather haphazard assumption since it does not take account of topography, and more importantly local obstructions. I would assume that some metrological data must be available for this site. If not, then the appropriate data does exist for RAF Benson;
- Some of the modelling assumes flat open countryside over which fumes/smoke will

disperse. There is a narrow corridor extending southwest (towards Culham station) but every other aspect on the site is either tree covered (to varying densities) or presents physical obstructions (the JET building, or the smaller hangars/offices build around that part of the site);

- The use of some of the modelling algorithms, as outlined in the environmental statement, is slightly suspect given that there appears to have been little correction for the effect of buildings and trees close to the discharge;
- The assessment of the effects of fire at the facility is, I believe, ill-considered. The effect of a fire is to provide 'thermal buoyancy', which will lift much of the plume upwards, before the effect of wind produced lateral movement. The modelling assumptions made in the environmental statement do not appear to take account of this;
- The fire assessment also appears to assume a Gaussian distribution of smoke particles. It does not appear to consider the effect of 'smuts' - particles of carbonised matter which are transported within the buoyant fire plume, and which can cause significant contamination near to the source of the fire as they settle out. Unlike the dispersed smoke, these could be made up of predominantly contaminated material, and therefore represent a much greater risk if inhaled or ingested than the purely gaseous products of the fire;
- It is also interesting to compare the statement on page 32 that '*a comprehensive risk assessment*' had been carried out to the statement on page 47 that, '*no attempt has been made to evaluate the equally relevant probabilities based on the fact that every reasonable measure will be taken to ensure that the likelihood of such an event is as low as possible*'. **What is the truth? - has a probabilistic risk assessment of some sort been carried out on this facility, the results of which are available for study, or does the substance of the environmental statement rely wholly on the words of the fire officer who inspected the building?**

Put simply, given the lack of information on the exact methods and assumptions used in assessing airborne releases, and the selection of highly questionable modelling parameters, I do not see how any confidence can be put in the data presented in the environmental statement.

The main problem with the traffic movement data (the little that there is) is that it does seem to over estimate the transport requirements to serve this site. The exact levels of waste coming in and going out are not made clear in the environmental statement. If we take the two categories of waste - solid (which is stored for three years) and liquid (which is stored for one year) - and consider various proportions of each entering/leaving the site, the through-put of waste in any one year varies. For example, if two thirds of the waste were solid, and one third liquid, the annual through-put (once the 250m<sup>3</sup> had been reached) would be around 150m<sup>3</sup> per year. However, if the solid were the majority, say 120m<sup>3</sup> per year, and the liquid were a small fraction, say 10m<sup>3</sup> per year, then the annual throughput would be around 130m<sup>3</sup> per year. Considering the transport impacts of this, it is difficult to see why Safeguard International have chosen to use such a high figure for waste vehicle movements. Two movements per day, over a six day week, would give 624 movements per year. Assuming that waste were evenly distributed over all these movements going in and out, this would mean that less than 0.5m<sup>3</sup> of waste was loaded on each movement. If you then consider the bulk movement of material going for incineration, the vehicles coming in will be carrying very little.

**The major problem with the 'water' section is that it puts most attention on the discharge of radioactive materials to the River Thames, and not to the effects of pollution on site. Section 7.2 entitled 'surface and groundwater', only in fact relates to**

**surface water.** The National Rivers Authority's, '*Code of Practice for the Protection of Groundwater*', contains a 'groundwater vulnerability map'. This shows clearly that the Culham site is in the highest vulnerability category. This makes the groundwater beneath the site highly vulnerable to pollution. **In terms of this development, the highest risk will be from any duct or drain which penetrates the ground. Any leaks are difficult to spot, and will not be spotted unless the leak emerges at the surface, or until a significant drop in through-put of the pipeline is noted.**

**At no point is the integrity of the sewer pipe between the site and Culham sewage works is discussed.** Given that the pipe will carry water contaminated with radioactive materials and chemicals, it is important that the pipe be leak free and, over the lifetime of the development, regularly maintained and inspected. Also, in terms of surface water discharge and leakage into the ground, **the failure to produce an engineering survey means that there is no guarantee that the floor/hardstanding of the facility will bear the loads applied to it, particularly in the building where the waste is stored, without breaking.** Painting the floor will seal the concrete to prevent the ingress of contamination. However, any small stress cracks that develop will 'suck' liquid through by capillary action, and larger cracks will allow liquid to flow through the fissure.

I find the 'ecological considerations' parts woefully inadequate. I find it incredible that Safeguard International considers the only ecological consideration is the presence of 'designated sites' such as SSSIs. In terms of the environmental assessment directive/regulations, ecological considerations does not mean just the nearest nature reserves - it means the whole ecology. As it stands, the environmental statement fails to meet the spirit of the regulations.

**The environmental statement completely failed to outline any of the relevant land-use planning issues which must be considered in any appraisal of development on this site.** For this reason I have carried out a brief assessment of the issues involved.

In terms of the general use of the land, we should consider the primary use of the site as it stands at the moment. **The Culham Laboratory site is within the Oxford greenbelt. As such it should be an area within which restraint on development is practised rather than allowing 'business as usual'.**

**Within environmental assessment, it is common practice to consider a number of alternative sites to ensure that the site chosen is the most appropriate. That was not done here.** In this case, I strongly suspect that the site chosen had more to do with cost considerations than finding a suitable location to operate a waste transfer station. If we compare the Harwell Laboratory site to the Culham site, then it is clear that the Harwell Laboratory site is a better location. This is because...

- The Harwell Laboratory site is better served by roads - the A34 is the local primary route;
- There is an established radioactive waste handling facility on the site which handles 'intermediate level' waste (ILW) as well as LLW and VLLW;
- There are a number of similar buildings on the Harwell Laboratory site, and a number of these are already 'active' due to past radioactive uses. This is preferable to taking a non-active building and making it radioactive by use;
- It is proposed as part of the operation of this facility to move materials to the Harwell Laboratory for 'recycling'. Locating all these operations on the same site reduces the risk of

incidents during transport;

- Both the companies involved in Safeguard International - Amersham International and the Atomic Energy Authority - already operate on the Harwell Laboratory site;
- Harwell Laboratory is not in the greenbelt.

Taking this analysis, it is difficult to understand why Safeguard International did not choose to locate on the Harwell Laboratory site. Given that the applicant had already employed a planning agent to help with the application I find it difficult to understand why a more wide ranging study of the planning issues involved was not produced.

## **Conclusions and recommendations**

The environmental statement produced by Safeguard International to accompany the planning application for their proposed radioactive waste transfer station, whilst being 'weighty', does not fully consider the issues required to be included in an environmental statement, and some issues have been ignored altogether - for example alternative sites, and groundwater pollution.

As it stands, the environmental statement cannot be considered satisfactory since it also ignores key issues such as site selection and the comparison with alternative sites, and there is no meaningful consideration of land-use planning policy to justify the case for permitting development. **The most damning aspect of this application is that for such a safety critical land-use, there has been no apparent attempts to carry out a detailed structural engineering survey of the building to ensure that it is capable of withstanding the demands placed upon it over the unspecified lifetime of the development**, and this failure leads to a consequential failure to produce proper assessments of failure/accident risk or probability, and that particularly applies in relation to fire or explosion.

**I recommend that, for the sake of 'reasonability', that South Oxfordshire District Council request Safeguard International to...**

- Have a survey carried out of the buildings' structure, with particular reference to the loads it is anticipated will be applied to floors and walls under normal and abnormal operating conditions, to ensure that the buildings structure will not fail over the (albeit unstated) lifetime of the development;**
- Prepare a comparative site selection study to determine if the Culham site, which is within the green belt, presents any greater advantages over other sites which are outside the green belt;**
- Respond to the concerns raised in this report relating to insufficient detail, potential errors or claims which have no clear basis, should be re-examined;**
- Produce a reasoned case as to the justification in terms of local and national planning policy for allowing this development in the form proposed. Part of this case should include an argument as to why the reuse of an old building is preferable over the construction of a purpose built facility, with the consequential reduction in risk such an option would bring.**

**Having received all of the above information - or not as the case may be - the planning authority must determine the case for allowing this development within the green belt, when other suitable sites, which partners in this company already have significant**

**interest in, exist nearby, and outside of the green belt. The fate of the Culham site itself is still not clear given that it lies within the green belt, and that the JET project must, under the terms of its planning permission, be completely cleared from the site. Then, and only then, should the other issues relating to the remaining land-use issues, risk and safety be assessed.**

**At this moment, given the information produced by the applicant prior to the submission of the environmental statement, and the statement itself, I can see no sound case for advocating the granting of planning permission, even with conditions. The green belt issue is a matter in its own right, but in terms of the evidence presented there is no case for allowing this development. In fact, applying the precautionary principle, I must advocate refusal on the ground that the environmental and safety case for this development is not proven given the lack of information within the planning application and the environmental statement.**

# 1. Introduction

This report has been produced on behalf of an ad hoc consortium of local parish council and local residents, including the parishes of Culham, Clifton Hampden, Dorchester, Kennington, Long Wittenham, Nuneham Courtenay, Radley and Sutton Courtenay. It also has been produced on behalf of the CPRE. The report is in response to the environmental statement submitted by Safeguard International<sup>[1]</sup> in support of their planning application<sup>[2]</sup> for a radioactive waste transfer station on the Culham Laboratory site.

First and foremost, **from my experience with other environmental statements, the document produced by Safeguard International does not represent a proper, informative environmental statement.** It resembles more the format of an safety audit report, or a license application under the Radioactive Substances Act 1993. It is my opinion that the documents as it currently stands does not meet the full requirement of the Town and Country Planning (Assessment of Environmental Effects) Regulations 1988.

The following report considers the evidence presented in the document, and the lack of information, in the following order...

- A review of the environmental statement, section by section (part 2);
- A review of the planning policy implications (part 3).

In the preparation of this report, the environmental statement, the planning application and background information submitted by Safeguard International, and all relevant local, county and national planning policy statements have been used. A full reference list is given at the end.

## 2. Review of the environmental statement

This sections of the report deals primarily with the information contained in the environmental statement. **As a general appraisal, it is difficult to see exactly how the requirements set out in the regulations<sup>[3]</sup>, and accompanying policy guidance<sup>[4]</sup>, have been considered and met.** For example, there is no consideration of alternatives processes and sites.

**It is my opinion that the statement as it currently stands does not conform to the requirements for an environmental statement** - rather it represents the form often used in license applications under the Radioactive Substances Act, or safety cases prepared for the Health and Safety Executive (HSE).

I must also question the production of the statement by a consultant clinical scientist at Hallamshire Hospital. Where an environmental statement for a safety-critical development such as a waste site is produced, a key part of the statement must make reference to construction engineering issues. It is not clear if matters outside the purely health physics realm were passed to other bodies for consideration, but there is an absence of any meaningful information on the fabric of the building, and its suitability for the proposed use.

It must also be noted that although the environmental statement was requested partly as a result of the storage/treatment of 'special wastes', the primary consideration in the

environmental statement is of radiological impacts. The non-radiological impacts of the materials stored and discharges are not properly assessed.

Reviewing the document section by section...

## **a. Non-technical summary**

**As it stands, the non-technical summary is not an adequate explanation of the content of the environmental statement.** For example, there are insufficient details of the various assessments of radioactive discharges to air and water. No attempt has been made to summarise or interpret the additional information on the hazardous substances or the operational procedures discussed in the main statement.

Purely on a reading of the non-technical summary, a member of the public would understand little about the actual environmental impact of the proposals. While normally you assume that the non-technical summary could be read with the statement, in this case copies of the summary were being distributed free of charge, while a charge was being made for the statement. As such, it is highly likely that members of the public will only obtain free copies of the summary, since copies of the statement were prohibitively expensive for many people.

Also there were no location maps given in the summary - this is a major failure on the part of those preparing the statement since a location plan and design/building illustration must form a key part of any summary. As maps/plans were included in the main report, I can see no reasonable excuse for the failure to include them in the non-technical summary.

On the other hand, when considering traffic, the non-technical *summary* actually gives information not contained in the actual report. If you read the 'traffic impacts' section of the summary it notes that there will be two waste vehicles per day going to the site (excepting Sundays). This figure is not actually given in the main report.

## **b. Development proposals**

With reference to part 1.2, I must make observations on the accuracy of the conclusions drawn on the 'site and surroundings':

- **There is no evidence that the existing building is suitable - no building survey has been produced to show that the structure is capable of performing under the loads/stresses of the materials stored within it;**
- It is stated that the proposed facility is consistent with its neighbours. This would be correct only insofar as there is a company manufacturing radioactive waste transport packaging (Croft Associates) next door. The nearest site is a scaffolding depot (H&H Scaffolding). After Croft Associates, the next nearest site is an engineering company (Griffin Welding), and then a warehouse distribution site (Ultraline). I am not aware of any commercial radioactive waste handling and storage facilities elsewhere on the site. Finally, if it is assumed that this development is 'consistent' with the JET project, this is not an accurate comparison since that facility is due for closure, and planning conditions prevent the reuse of the site (see section 3 of this report - 'planning policy review' - for further detail on this.);
- It is stated that there are no 'residential properties' nearby. This statement fails to

acknowledge that there are other commercial operations nearby which are not part of the Safeguard International/Atomic Energy Authority site operations - the vehicle hire/storage site for example. Also, little mention is made of the European School.

The following paragraph notes that there are, "*a group of buildings which are believed to be owned by the Department of the Environment*". This statement creates the immediate question - is the ownership of these buildings (which are for the most part derelict WWII airfield buildings) in doubt? If ownership is in doubt then the operations which this site has or may be put to is a material consideration. There are also buildings to the north of the site owned by the Home Office, and the nearby Tropical Products Institute has also been used as a 'rave' venue.

**In part 1.3 it is noted that the building, 'was formerly a vehicle workshop'. However, no age is put on the building. This is important in relation to the structural integrity of the development.**

Part 1.4 relates to the 'planning context'. From the minimal amount of information provided in this section it would appear that the author of the statement has concentrated completely on the 'radiological' aspects of the development which require licensing, and not the relevant matters relating to the Town and Country Planning system<sup>[5]</sup>. All the matters referred to in this section, while being relevant background information as part of the environmental statement, are not relevant to the consideration of a planning application. If this section is intended to describe the relevant 'planning' matters, in terms of the planning permission, it is worthless.

Part 1.5 describes the purpose of the proposed facility. In this case we must ask what this facility provides, and whether the operation of the facility will provide any additional benefits to the environment. In terms of 'small users' who currently hold radioactive materials, they must have consents to hold such materials under Radioactive Substances Act 1993, issued by Her Majesty's Inspectorate of Pollution (HMIP). Part of this procedure ensures that materials are disposed of in accordance with either the consent, or other discharge consents issued by HMIP.

Currently there are three main fates for radioactive materials...

- discharge to the environment (to air or water/sewer);
- tipping on a landfill site;
- incineration.

**It must be made clear that incineration does not destroy the radioactive content of the materials. Combustion will destroy the chemical 'fabric' of the material, but the radioactive elements of the waste will remain unchanged. These will either be released to air, or they will be trapped in the pollution abatement system, and eventually will be landfilled along with the fly ash.**

As such then, the argument that this facility will improve the current situation regarding 'small user' radioactive waste management is not valid. In practice it 'defers' the point at which the materials will enter the environment.

Also, on the point that this facility will, '*secure a comprehensive range of disposal routes which may not individually have been available to the waste producers*', I find this idea difficult to interpret. Many radioactive sources have a condition that they must be returned to

their producer - the main producer in the UK being Amersham International, who are part of the 'Safeguard' joint venture with the Atomic Energy Authority. Otherwise materials are dumped in landfill, incinerated, or disposed to sewer. In practice the only benefit of this system will be to allow Amersham International to streamline its 'back-end' waste operations, and so save money. The other possibility is that HMIP will tighten up on the disposal of radioactive materials, forcing small users to pay the (inevitably) higher prices that Safeguard International will demand for the transport, storage and disposal of the material.

The rest of part 1.5 is not really relevant to the consideration of the planning application since it involves matters which are the responsibility of other authorities. In terms of the ICRP principles, this is a matter for the Health and Safety Executive (HSE)/HMIP.

The information on the 'justification' for the process is a matter for HMIP as a part of the licensing process. In the case *R v Secretary of State ex parte Greenpeace and Lancashire County Council* (1994), Justice Potts stated that there was no requirement for justification of the discharge within the Radioactive substances Act 1960/1993, but that the Euratom Directive Articles 6(a) and 13 did require it. For this reason UK law must be considered silent, and the terms of the Directive must be met - this point had been established in a number of previous cases. Therefore, even though the 'justification' requirement is not in UK law, there exists a need to justify radioactive discharges under the 'direct effects' doctrine of European law.

**Regarding the 'justification' of this facility in terms of the responsibilities of the local planning authority, what must be demonstrated is the conformity with local and national planning policies, and in a wider context that the development is 'sustainable', and applies the 'precautionary principle' as part of its assessment criteria. It is my view that this has not been done.**

Part 1.5.3 relates to the 'optimisation' of waste handling activities within the facility. It is worth noting here that the information submitted with the original application<sup>[6]</sup> indicated that some materials - primarily it appears sealed sources - would be sent to AEA Harwell for "recycling". This same proposal is not given within this section in terms of the function of the facility. Additionally, I do not see how a radioactive source can be 'recycled' since once degraded the radio-isotopes within it cannot be regenerated in a conventional manner, and with reference to this I am not aware of any facilities existing on the Harwell Laboratory site for undertaking this work.

Part 1.5.4 is not relevant to the determination of the planning application.

Part 1.5.5 deals with the building design. **This section represents perhaps one of the greatest flaws in the statement in that there is no evidence on the structural integrity of the building for this safety critical usage. Without a detailed engineering survey of the building, it will not be possible for Safeguard International to give any guarantees about the structural integrity of the building,** or even that the facility will be 'safe' under abnormal condition such as fire, explosion or lower level incidents such as stacked drums of waste falling against an internal/external wall.

**Unless a structural survey is undertaken I cannot see how the risk this facility presents can be quantified and minimised<sup>[7]</sup>.**

Part 1.6 relates to traffic matters - these are considered in detail later in this report.

Finally, relating to part 1.7, I really must question whether the generation of 5 jobs represents a significant benefit to the local economy, given that this same 'bad neighbour' development could deter other businesses from locating in the area.

### c. Process description

Much of this section provides background information on the operation of the facility. My main concern here is that the figures for the throughput of waste do not balance.

From the figures within the document it is stated that 80m<sup>3</sup>/yr of waste *could* be sent for incineration, if all the letters of intent furnished by the various incinerator operators are honoured. What happens to other parts of the waste accepted is not clear from the description given in part 2.

For a clearer explanation of what happens to the accepted waste, the best source of information is the Radioactive Substances Act application made to HMIP by Safeguard International<sup>[8]</sup>. For convenience, I have compiled the information given in the application into a table (see following page).

It is also noted that in the application it is proposed to store 1160 GBq of radioactive waste, with a maximum volume of 250m<sup>3</sup>. Also, much of the information in the environmental statement relating to the effect of radioactive discharges from the site was originally part of the Radioactive Substances Act application.

<b>Disposal route</b>	<b>Activity GBq/month</b>	<b>Volume (m<sup>3</sup>)</b>
<b>Rechem International Ltd</b> (Incinerator at Southampton)	100.750	20.00
<b>Leigh Environmental Ltd</b> (Incinerator at Dudley)	0.800	20.00
<b>White Rose Environmental Ltd</b> (Incinerator at Leeds)	7.250	20.00
<b>Sheffield City Council</b> (Incinerator in Sheffield)	0.832	20.00
<b>Public Sewer</b> (Culham Sewage Works)	0.001	50.00
<b>To air</b>	0.600	-----

There are also some interesting discrepancies between the environmental statement, and the Radioactive Substances Act application:

- The application notes that the nearest residence is 2km away, but the environmental statement (part 1.2) states that the nearest dwelling is 1.2km away;
- The application states that the nearest point to which the public have access is 50 metres away, but the environmental statement states that access to the site is via the perimeter road which, *'is not a public highway'*. This leads to the obvious point about exactly which parts of the site are/are not open to the public;
- The application notes that the nearest 'openable windows' is only 25 metres, as opposed to the measure of the 'nearest building' taken in the environmental statement at 50 metres distance.

At 2.5 it notes that, *'Safeguard International has negotiated in principle for disposal to a range of incinerators... Safeguard will apply to HMIP for authorisation to dispose of waste via - UKAEA, BNFL Drigg'*. This statement, in my interpretation, presents the question, have they actually secured all the disposal routes necessary to operate the facility?. This in itself is not a relevant planning matter, since it is the responsibility of another authority, but it does raise concern about the approach of Safeguard International in planning this facility.

I must dispute the wording in the 'high temperature incineration' section. It refers to, *'...plants that will provide high temperature incineration for the safe destruction of clinical low-level radioactive waste'*. This, to the average member of the public, would indicate that the radioactive part of the waste is destroyed. As noted earlier, this is not true - the radioactivity is merely distributed to other environmental media.

**I must also dispute the claim that high temperature incineration is the only safe option for clinical waste.** There is a growing trend to non-combustion treatment processes for clinical waste, ranging from microwave autoclaving to chemical degradation in strong oxidising agents. These methods also have the advantage that they do not, unlike incineration, involve the uncontrollable spread of radioactive materials to air, or create fly ash which is radioactive, as well as containing a wide range of chemical toxins. There is no case for presenting incineration as the *'best practicable environmental option'* for clinical wastes.

The information on BNF waste management also needs further qualification. BNF have now ceased to accept radioactive waste below certain activity levels. This being the case only the more active materials, or active materials with a long half-life, will be able to be sent to Drigg. Much of the 'very-low-level' waste (VLLW) will go to landfill/incineration, and the 'low-level' waste (LLW) with shorter half-lives will have to be stored until such time as it can be disposed of as VLLW.

This last point is important because it means that the material that is stored for the least amount of time within the facility will be VLLW, or LLW with a very short half-life. This means that over time there will be larger quantities of LLW with longer half-lives being stored on the site.

#### **d. Operational procedures**

Much of the information in this section is 'background', relating more to operational and licensing issues rather than land use planning or environmental impact.

**Within Table 4 it is interesting to note that there is no proposal for environmental monitoring around the facility to check and track the background radiation levels over time. This is important in the case of accidents (to assess the possible level of release), or to track 'fugitive leaks' in the site drains or the active air extraction system.** Checking within the walls of the facility only will not give a meaningful picture of what is happening outside.

In the case of failure of the active extract system (see section 3.4 - waste processing) it is not clear how any gases generated from the waste processing activities will be removed. If the air filter fails during processing the extraction of air must continue to prevent contamination of the workers within the building. Otherwise the building would have to be evacuated, and possibly thoroughly cleaned to removed any surface contamination due to the failure of the extraction system. In terms of worker safety, and ease of operation, it would be more effective to stop processing but leave the extract system running with a failed air filter.

I also question the process through which failure of the filters will be detected. Using normal radiation detectors it would require a large release of radioactivity within the building - more than may be feasible with the types of waste it is proposed to handle, before the failure of or drop in efficiency within the air filter is detected. The filters are only changed every six months. The presence of a large hole in the filter - the main fault which would show up in the weekly check of the pressure drop across the filter - would allow sizeable particles of material to escape through the stack.

The atmospheric emissions discussed elsewhere in the environmental statement assume normal operation. From my analysis of the information within the environmental statement it is difficult to see how an efficiency drop in the filter, holes in the filter, or a complete failure of the filter would be detected. At most, the extract system could run for a whole week before problems were noted.

The only alternative would be to take air from the 'outside' side of the filter through some sort of high volume air sampler, and then take regular radiation readings from the sampler filter.

With regard to 3.5.1, as noted above, no waste 'recycling' routes have been identified within the environmental statement, or any of the documentation produced by Safeguard International since submitting the planning application in 1994. Given that all radioactive substances decay, it is difficult to see how useful isotopes could be economically extracted from the majority of radioactive waste or spent radioactive sources.

Considering 3.6, relating to odour, **I am concerned as to the options chosen for providing emergency power supplied to the freezer cabinets. It should be made clear if back-up supplied are available within the site as a whole, since to provide a generator within the facility (which is already cramped for space) could create noise and/or odour problems.** The options for back-up supplies should have been identified, if only so that their reliability could be considered with a risk assessment (for example, with automated generator systems there is a small percentage failure, either on start-up or during run-time).

Finally - fire. Section 3.9.2 is entitled, '*probability of fire at the proposed facility*'. However, in the text there is no discussion of relative probabilities or risk. The word, 'unlikely', is actually meaningless in this context.

**Merely removing ignition sources within the facility will not prevent fire.** It might be possible, where chemical/solvent mixture are not fully known, to get an exothermic chemical reaction which could initiate a fire. Some materials under certain conditions may spontaneously combust. We must also consider the 'human' element - smoking may be banned within the facility, but unless the measures normally adopted within the explosives industry are adopted to prevent the build-up of static electricity or sparks (e.g., from a dropped hammer), it is very difficult to remove accidental sources of ignition.

**The text notes that fire has been considered as part of a '*comprehensive risk assessment*'.** If this is so, where is the data? **I see no evidence of such an assessment having taken place.** If we were to be considering fire risk assessment we would have to include matters such as the ability of the walls to resist fire, and prevent the spread of fire. As (apparently) no proper engineering survey has taken place this data would not be available. If a comprehensive risk assessment has been carried out, it would have to include considerations on the integrity of the building. The question therefore arises as to why none of this data has been included in the environmental statement.

## **e. Atmospheric emissions**

Although there has been much consideration of the radiological effects of airborne discharges within the section - which you would expect as the environmental statement has been prepared by a health physics department, there is little detail on the exact method by which discharges have been modelled, and what assumptions have been used in this modelling.

For example, section 4.1 discusses vapour emissions from the solvent storage area. Reading this, one would assume that this vapour will just mingle and get sucked out of the building - either through the air extraction system or by convection/circulation through the air bricks. In practice this may not be the case. The vapour of volatile solvents can be heavier than air, leading to 'ponding' of vapour on the floor. In such instances you may get vapour concentrations at floor level near to the explosive limit.

**In terms of the modelling of the stack releases, it is difficult to interpret exactly how the data was collated - in particular what assumptions were made in the process.** For example:

- The meteorological conditions selected for dispersion modelling are '*representative of weather conditions for a non-coastal southern England site*'. This is a rather haphazard assumption since it does not take account of topography, and more importantly local obstructions. I would assume that some meteorological data must be available for this site. If not, then the appropriate data does exist for RAF Benson, and has been used in the past by AEA Harwell when assessing discharges on the Harwell Laboratory site;
- If you look at section 4.6.3.3 on page 50 it noted that '*a roughness length of 0.1m was selected, typical of the open terrain in the vicinity of this facility*'. I find this statement inconsistent with the current layout of the site. There is a narrow corridor extending southwest (towards Culham station) but every other aspect on the site is either tree covered

(to varying densities) or physical obstructions (the JET building, or the smaller hangars/offices build around that part of the site). To use an essentially open-countryside designation for modelling will therefore underestimate air concentrations, and deposition rates, and overestimate the downwind spread of contamination;

- Within section 4.5.4, the models discussed are widely used for the modelling or emissions at distances of 200m to 10km downwind of a discharge. Close in to the discharge, the modelling will not produce accurate results because of the effects of 'plume downwash' cause by buildings near to the stack, or at a distance emissions can be in error because of changes in wind direction, topography, surface roughness and atmospheric turbulence/stability conditions. In this case the fundamental missing information is that relating to plume downwash, and more critically, the effects of nearby objects such as tall trees, on the dispersion of the plume. Under such conditions the plume could hit the ground within a very short distance, or under extreme conditions it could break up and flow randomly around nearby buildings and trees;
- The general assessment of radionuclide discharges uses standard assessment methods. However, the effects of discharges from other parts of the site - the JET project for example, has not been assessed. This is particularly significant for radionuclides such as tritium;
- The assessment of the effects of fire at the facility is, I believe, ill-considered. The use of Pasquill category F to model dispersion favours a stable atmosphere, and is not consistent with considering the effects to the public at 50 metres from the site. The effect of a fire is to provide 'thermal buoyancy', which will lift much of the plume upwards, before the effect of wind produces lateral movement. As such only gusty wind conditions, or the extreme atmospheric mixing produced under Pasquill categories A or B will cause plume grounding in the near-field. More significantly, category F is really only applicable to stable or night-time atmospheric conditions. The predominant stability category is D - which occurs for up to 60% of the time;
- The fire assessment also appears to assume a Gaussian distribution of smoke particles. It does not appear to consider the effect of 'smuts' - particles of carbonised matter which are transported within the buoyant fire plume, and which can cause significant contamination near to the source of the fire as they settle out. Unlike the dispersed smoke, these could be made up of predominantly contaminated material, and therefore represent a much greater risk if inhaled or ingested than the purely gaseous products of the fire;
- It is also interesting to compare the statement on page 32 that '*a comprehensive risk assessment*' had been carried out to the statement on page 47 that the, '*no attempt has been made to evaluate the equally relevant probabilities based on the fact that every reasonable measure will be taken to ensure that the likelihood of such an event is as low as possible*'. What is the truth? - has a probabilistic risk assessment of some sort been carried out on this facility, the results of which are available for study, or does the substance of the environmental statement rely wholly on the words of the fire officer who inspected the building?

Put simply, given the lack of information on the exact methods and assumptions used in assessing airborne releases, and the selection of highly questionable modelling parameters, I do not see how any confidence can be put in the data presented in the environmental statement. Even under 'normal' conditions, Gaussian models will vary in accuracy between  $\pm 25\%$  and  $\pm 200\%$ . In the near-field, where the effect of buildings and trees is most pronounced, and with the use of 'average' southern England data rather than site specific data, I do not see how any claim can be made by Safeguard International that the data - as presented - represents an accurate assessment of *potential* environmental impacts.

Finally, with reference to section 4.8 of the environmental statement, Safeguard International have made a fundamental error in their assessment of ecological impacts. This is discussed in detail in section (f) below.

## **f. Noise**

The impact of noise from the facility will mainly be on adjacent premises. Given the level of tree covers, and the presence of so many hard surfaces and buildings, noise will be readily attenuated away from the site.

It would have helped to have had some detail on existing background noise levels. In practice at any significant distance the noise from the site would not be distinguishable from the noise of nearby roads, and perhaps more significantly Didcot 'A' power station.

## **g. Traffic**

The traffic assessment, as it stands, is not a realistic appraisal of the effects this development will have on local roads. However, given the low usage compared to the existing site, it is not that significant an oversight.

As noted earlier, the main problem with the traffic movement data - that which there is - is that it does seem to over estimate the transport requirements to serve this site.

**The exact levels of waste coming in and going out are not made clear in the environmental statement - only the storage volume is given.** If we take the two categories of waste - solid (which is stored for three years) and liquid (which is stored for one year) - and consider various proportions of each entering/leaving the site, the through-put of waste in any one year varies. For example, if two thirds of the waste were solid, and one third liquid, the annual through-put (once the 250m<sup>3</sup> had been reached) would be around 150m<sup>3</sup> per year. However, if the solid were the majority, say 120m<sup>3</sup> per year, and the liquid were a small fraction, say 10m<sup>3</sup> per year, then the annual throughput would be around 130m<sup>3</sup> per year.

**Considering the transport impacts of this, it is difficult to see why Safeguard International have chosen to use such a high figure for waste vehicle movements.** Two movements per day, over a six day week, would give 624 movements per year. Assuming that waste were evenly distributed over all these movements going in and out, this would mean that, on average, less than 0.5m<sup>3</sup> of waste was loaded on each movement. If you then consider the bulk movement of material going for incineration, the vehicles coming in will be carrying very little.

Assuming an average of 2m<sup>3</sup> of waste were loaded into each incoming/outgoing vehicle (this is a representative low-capacity volume for the types of vehicles indicated in the report) then only 140 movements per year would be necessary.

If the figures are accurate, then it means that most of Safeguard International's vehicles will

be running around the country almost empty. This of course has implications in terms of the environmental impact and the transport efficiency of the proposal as a whole. The only possible reason that such a high figure may be quoted would be if it was intended to intensify operations on the site, ie - store more waste, and thus increase traffic movements. Using the same procedure to calculate annual movements as used above, 600 traffic movements, taking at least 2m<sup>3</sup> of waste in or out would enable waste storage in excess of 1,000m<sup>3</sup> to be operated.

## **h. Water**

**The major problem with this section is that it puts most attention on the discharge of radioactive materials to the River Thames, and not to the effects of pollution on site.**

Section 7.2, entitled 'surface and groundwater', only in fact relates to surface water. When considering any waste development, and any development which may impact on water, I would expect the environmental statement to reference two key sets of documents - the National Rivers Authority's, '*Code of Practice for the Protection of Groundwater*'<sup>[9]</sup>, and the local geological survey maps<sup>[10]</sup>.

**The NRA's COP contains a 'groundwater vulnerability map'. This shows clearly that the Culham site is in the highest vulnerability category.** The geological survey maps explain this - the Culham site sits directly on top of the Lower Greensand, with a few beds of gravel in certain parts of the site. This makes the groundwater beneath the site highly vulnerable to pollution since the unconsolidated gravels and the loosely consolidated sands have a high permeability. Given the topography of the area, and the fact that the Culham laboratory sites sits on an 'island' in a bend in the River Thames, pollution of the groundwater could ultimately lead to pollution of the River Thames.

**In terms of this development, the highest risk will be from any duct or drain which penetrates the ground.** Any leaks are difficult to spot, and will not be spotted unless the leak emerges at the surface, or until a significant drop in through-put of the pipeline is noted.

**At no point is the integrity of the sewer pipe between the site and Culham sewage works is discussed. Given that the pipe will carry water contaminated with radioactive materials and chemicals, it is important that the pipe be leak free and, over the lifetime of the development, regularly maintained and inspected.** No consideration is given to this in the environmental statement.

Also, in terms of surface water discharge and leakage into the ground, **the failure to produce an engineering survey means that there is no guarantee that the floors/hardstanding of the facility will bear the loads applied to it, particularly in the building where the waste is stored, without breaking.** Painting the floor will seal the concrete to prevent the ingress of contamination. However, any small stress cracks that develop will 'suck' liquid through by capillary action, and larger cracks will allow liquid to flow through the fissure.

**An issue which has not been dealt with anywhere in the environmental statement is the petrol pump, and presumably the associated underground petrol storage tank, in front of the building.** This in itself presents a risk to groundwater - it also presents a potential fire

risk if it is in continued use. If it is proposed to close the pump permanently, the storage tank should be removed. This is important both to prevent any potential pollution of groundwater, and to ensure that, at a future date, the tank does not corrode, collapse, and present a risk of subsidence.

Finally, relating to this section and the atmospheric emissions section, I find the 'ecological considerations' parts woefully inadequate. I find it incredible that Safeguard International considers the only ecological consideration is the presence of 'designated sites' such as SSSIs. **In terms of the directive, and the regulations, ecological considerations does not mean just the nearest nature reserves - it means the whole ecology of the area.** As it stands, the environmental statement fails to meet the spirit of the regulations.

There are local accounts of herons nesting in the woods near to the site. There are also the woods themselves, and the acid grassland characteristic of the greensand outcrop. All of this represents the local 'ecology', 'flora' and 'fauna', and none of this has been studied within the environmental statement in any way.

## **i. Visual**

The visibility assessment is, compared to other environmental statements, inadequate. The main consideration is what the building looks like, rather than the actual visibility of the building off-site. However, in terms of the western edge of the Culham site, the facility will present much less of an impact than the existing derelict WWII hangers near the railway line.

## **j. Construction**

I find it incredible that Safeguard International can propose carrying out work on a building in order to develop a radioactive waste storage and transfer station, without apparently carrying out an engineering survey to determine the capability of the building's fabric to perform to the standards required of it. Furthermore, to propose a series of building modifications 'blindly', without such a survey, seems irresponsible, especially where such a safety critical land-use is involved.

## **k. Conclusion/appendices**

**I find it difficult to see how the "conclusion" to the document can sensibly go through the 'headings' from schedule 3 of the Environmental Assessment Regulations, when some of the material covered was not even considered in the main report - 'cultural heritage' for example, and much of the rest of the information is tenuously drawn out from the sparse information available in the environmental statement.**

Particularly in relation to the 'cultural heritage', the conclusion talks about 'scheduled ancient monuments', but completely neglects Nuneham Park, or any nearby listed buildings. Also, in

terms of 'material assets', the obvious recreational asset the development will affect will be the River Thames. When considering the term '*detrimentally effect*', the actual harm to the environment must be compared to the public's 'perception' of harm. In the long term it is this that will have the greatest effect. Also, if we consider the European School, how many parents would send their child there knowing it was only a few fields away from a radioactive waste transfer station?

**I find the conclusion to the environmental statement, in terms of a serious and structured approach to how an environmental statement should be carried out, seriously 'questionable'.**

### **3. Planning policy review**

**The environmental statement completely failed to outline any of the relevant land-use planning issues which must be considered in any appraisal of development on this site.** For this reason I present them separately here.

As noted above, there are serious errors in the environmental statement, and much of the data presented is not directly relevant to the consideration of this application since it falls within the responsibility of other regulatory bodies. If we consider the material land-use considerations we could consider, for example...

- planning laws, circulars and policy guidance;
- physical site considerations;
- amenity value of site/surroundings;
- existing land use in the area;
- existence of alternative/better suited sites (given that an environmental statement is involved);
- development plan considerations;
- transport/highways.

**In terms of the general use of the land, we should consider the primary use of the site as it stands at the moment. The Culham Laboratory site is within the Oxford greenbelt. As such it should be an area within which restraint on development is practised rather than allowing 'business as usual'.**

In terms of PPG2 of Greenbelts, there is no exception in this case. If we do consider this as a simple transfer station in the greenbelt then there is an existing and recent case of the proposed transfer station/civic amenity site at Langford Lane in Kidlington. The Inspector's report for the Oxfordshire Minerals and Waste Local Plan inquiry notes<sup>[11]</sup> that the development of the transfer station is only acceptable because of existing industrial uses on the site, but the proposal should still be subject to a search for alternative sites.

In this case it is argued within the environmental statement that the proposed use of land conforms to existing uses. In practice I do not see this as the case. The primary occupier on the Culham Laboratory site is the JET project. The planning permission for JET<sup>[12]</sup>, granted in 1976, is time limited. It also has conditions meaning that on completion of the project, all buildings and ancillary facilities must be cleared. Culham was first developed a research centre from the 1960s. By the time the JET's application was received there had been 46

permissions granted on the site. However, the committee report<sup>[13]</sup> noted that any development would be contrary to the structure plan policies, but that the project was perceived as being in the national interest, and it was clear that if the permission was turned down that it would eventually be overturned by the Secretary of State.

Considering this development, there would have to be an argument, like JET, that it fulfils a national need. The draft review of radioactive waste management policy<sup>[14]</sup> produced in 1994 mentioned Safeguard International as a provider of commercial radioactive waste services. However, the final policy document<sup>[15]</sup> did not mention Safeguard International at all. In fact, the policy that now applies is...

*"... that the Government should not direct small users to employ particular disposal routes, but that more guidance should be made available to assist them in selecting appropriate routes".*

A significant change of emphasis as far as Safeguard International is concerned.

At this point it is also worth mentioning the selection of alternative sites, and the justification for the selection of the Culham Laboratory site. As noted within the Inspectors' report on Langford Lane, where a development is proposed within the greenbelt alternative sites should be considered. Also, within environmental assessment, it is common practice to consider a number of alternative sites to ensure that the site chosen is the most appropriate.

In this case, **I strongly suspect that the site chosen had more to do with cost considerations than finding a suitable location to operate a radioactive waste transfer station.** If we compare the Harwell Laboratory site to the Culham site, then it is clear that the Harwell Laboratory site is a better location. This is because...

- The Harwell Laboratory site is better served by roads - the A34 is the local primary route;
- There is an established radioactive waste handling facility on the site which handles 'intermediate level' waste (ILW) as well as LLW and VLLW;
- **There are a number of similar buildings on the Harwell Laboratory site, and a number of these are already 'active' due to past radioactive uses. This is preferable to taking a non-active building and making it radioactive by use;**
- As a licensed nuclear site, Harwell Laboratory has many more facilities, and better security, to enable this operation to be carried out safely;
- It is proposed as part of the operation of this facility to move materials to the Harwell Laboratory for 'recycling'. Locating all these operations on the same site reduces the risk of incidents during transport;
- Both the companies involved in Safeguard International - Amersham International and the Atomic Energy Authority - already operate on the Harwell Laboratory site;
- **Harwell Laboratory is not in the greenbelt;**
- The groundwater beneath the Harwell Laboratory site is already massively contaminated with solvents, making significant contamination due to this development unlikely, and there are relatively few surface watercourses in the area. Also, large scale monitoring of the effect of radioactive emissions on the environment is already an established practice;
- Harwell Laboratory has a more established history of atomic land uses.

**Taking this analysis, it is difficult to understand why Safeguard International did not choose to locate on the Harwell Laboratory site.**

PPG23<sup>[16]</sup> sets out the considerations local planning authorities should address when making a determination on 'polluting' developments. It is clear in paragraph 3.15/3.16 that as part of this development, alternative sites should have been considered. Also, matters such as pollution or risk, whilst primarily a matter for other regulatory bodies, do have relevance to the local planning authority. If we consider the case *Stringer v. Minister for Housing and Local Government* [1971], then the planning authority may consider a range of issues which they consider to be relevant in the local context.

We must also consider paragraph 4 of PPG1. This relates to 'international obligations' which local planning authorities must recognise. One of those obligations is the Rio Declaration, made at the 'Earth Summit' in 1992, and to which the UK Government has signed up. This commits the UK to implement 'sustainable' patterns of development. This commitment was further clarified in the 'UK Sustainable Development Strategy'<sup>[17]</sup>. Principle 15 of the Rio Declaration notes the precautionary principles as part of decision making processes. It states...

***"In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."***

The recent guidance on risk assessment<sup>[7]</sup> gives a detailed explanation of the origins of the precautionary principle in Annex 7, and Chapter 5 looks specifically at the application of the precautionary principle and sustainable development. I urge the local planning authority to study these parts of the publication carefully.

**In practice, it is difficult to see how South Oxfordshire can act responsibly in terms of the precautionary principle, and grant planning permission for this facility on the basis of the environmental statement submitted with the application.**

Further in the subject of sustainable development, 'Agenda 21', the conference programme produced at the Rio Summit, and to which the UK is a signatory, details measures for the management of radioactive wastes in Chapter 22. The key parts of this chapter are:

- The safe and environmentally sound management of radioactive wastes, including their minimization, transportation and disposal, is important, given their characteristics;
- That radioactive waste must be safely managed, transported, stored and disposed of, with a view to protecting human health and the environment, within a wider framework of an interactive and integrated approach to radioactive waste management and safety;
- That systems should promote proper planning, including environmental impact assessment where appropriate, of safe and environmentally sound management of radioactive waste, including emergency procedures, storage, transportation and disposal, prior to and after activities that generate such waste.

It is difficult to see how the Safeguard International proposals fit in with this scheme since, by the location of a single facility, it maximises the transport of radioactive materials, by giving an 'easy' disposal route it discourages waste minimisation and the '*polluter pays principle*', and certainly in regard to the last of the three points the environmental statement presented with this application is totally inadequate.

If we consider the Oxfordshire Structure Plan<sup>[18]</sup>, it contains a number of relevant policies which should be considered in relation to this development:

- Policy EN1 relates to protecting the environment by, '*resisting potentially harmful developments which by their nature, size, location or cumulative effects are damaging or inappropriate to their surroundings*' [my emphasis];
- Policy EN5 relates to the Oxford Greenbelt.

Also, although there may be a case for considering its inclusion premature, the recent consultation draft for the Oxfordshire Structure Plan Review<sup>[19]</sup> has a specific policy relating to sustainable development (OS1) part of which states...

*"Where there is a likelihood of development leading to unsustainable environmental damage the 'precautionary principle' will apply and such development will not be permitted".*

**On the basis of the existing Oxfordshire structure plan, there can be a case made that the structure plan would urge refusal of the application.** I have not considered the current South Oxfordshire Local Plan or its deposit draft, since the primary source of guidance on green belt matters remains the structure plan.

Finally, in terms of the environmental statement itself, it is difficult to see how South Oxfordshire District Council could accept it as a valid document given the lack of information - particularly on issues such as the engineering integrity of the building, the failure to consider alternative sites, and a plain lack of consideration of the wider environmental, social and economic impacts of this development. If the document had been prepared by one of the major environmental consultancies, I do not think that we would have the same approach in terms of providing minimal information on everything, except health physics issues.

It is not possible to refuse permission on the basis of an incomplete environmental statement, unless the local planning authority first requests further submissions from the applicant on matters which have not been resolved within the environmental statement. Should it be decided that the application is unacceptable, even with conditions appended to the planning permission, or if further requests for information are refused, then and only then could this application be refused.

**Given that the applicant had already employed a planning agent to help with the application I find it difficult to understand why a more wide ranging study of the planning issues involved was not undertaken.**

## **4. Conclusions and recommendations**

The environmental statement produced by Safeguard International to accompany the planning application for their proposed radioactive waste transfer station, whilst being 'weighty', does not fully consider the issues required to be included in an environmental statement, and some issues have been ignored altogether - for example alternative sites, and groundwater pollution.

The content of the document is skewed very much towards the health physics issues relating

to this development - much as you would expect in a licensing application to HMIP - which is not surprising given that it was written by a consultant within a 'medical physics' department. If the document had been produced by one of the major multidisciplinary environmental consultancies I believe that its content would have been more balanced.

As it stands, the environmental statement cannot be considered satisfactory since it ignores key issues such as site selection and the comparison with alternative sites, and there is no meaningful consideration of land-use planning policy to justify the case for permitting development. The requirements of Schedule 3 of the Town and Country Planning (Assessment of Environmental Effects) Regulations, 1988, have been considered in a very haphazard way, and the 'conclusion' of the statement is a quite blatant attempt to rectify the shortcomings elsewhere. Even where issues have been noted such as air pollution or ecology, the appraisal is very brief, few if any of the underlying assumptions have been reported, and so the conclusions drawn cannot be considered reliable.

There is a case for not allowing the development on the grounds that it is within the Oxford green belt, and unlike the JET project, Government policy does not single this project out as of national significance. Furthermore, the doubts produced by the analysis given in the environmental statement means that I would advocate the application of the precautionary principle in this case.

Finally, the most damning aspect of this application is that for such a safety critical land-use, there has apparently been no attempts to carry out a detailed structural engineering survey of the building to ensure that it is capable of withstanding the demands placed upon it over the lifetime of the development, and this failure leads to a consequential failure to produce proper assessments of failure/accident risk or probability, and that particularly applies in relation to fire or explosion.

**I recommend that...**

**For the sake of 'reasonability', that South Oxfordshire District Council request Safeguard International to...**

- i. Have a survey carried out of the buildings structure, with particular reference to the loads it is anticipated will be applied to floors and walls under normal and abnormal operating conditions, to ensure that the buildings' structure will not fail over the (albeit unstated) lifetime of the development;**
- ii. Prepare a comparative site selection study to determine if the Culham site, which is within the green belt, presents any greater advantages over other sites which are outside the green belt and are coming up for redevelopment or which are available for development. I would particularly use the examples of Milton Park estate, the Harwell Laboratory site, USAF Upper Heyford, or any other 'brownfield' sites available where past specialised uses may have some comparison to this proposal;**
- iii. Respond to the concerns raised in this report relating to insufficient detail, potential errors or claims which have no clear basis should be re-examined. In particular this relates to the protection of groundwater, ecology, 'material assets', cultural heritage, transport implications, the risks of fire, and the uncertainty about site**

**drainage and the assessment procedures used in modelling airborne pollutant transport;**

**iv. Produce a reasoned case as to the justification in terms of local and national planning policy for allowing this development in the form proposed. Part of this case should include an argument as to why the reuse of an old building is preferable over the construction of a purpose built facility, with the consequential reduction in risk such an option would bring.**

**Having received all of the above information - or not as the case may be - the planning authority must determine the case for allowing this development within the green belt, when other suitable sites, which partners in this company already have significant interest in, exist nearby, and outside of the green belt. The fate of the Culham site itself is still not clear given that it lies within the green belt, and that the JET project must, under the terms of its planning permission, be completely cleared from the site.**

**Then, and only then, should the other issues relating to the remaining land-use issues, risk and safety be assessed.**

**At this moment, given the information produced by the applicant prior to the submission of the environmental statement, and the statement itself, I can see no sound case for advocating the granting of planning permission, even with conditions. The green belt issue is a matter in its own right, but in terms of the evidence presented there is no case for allowing this development. In fact, applying the precautionary principle, I must advocate refusal on the ground that the environmental and safety case for this development is not proven given the lack of information within the planning application and the environmental statement.**

**Paul Mobbs**  
November, 1995

## 5. References

- [1] Safeguard International Ltd., "*Proposed Waste Transfer Facility at North Culham Estate, Abingdon, Oxford*", Environmental Statement, October 1995. Prepared by Mrs. C. Griffiths, Consultant Clinical Scientist, Department of Medical Physics and Clinical Technology, Royal Hallamshire Hospital, Glossop Road, Sheffield S10 2JF.
- [2] Application made to South Oxfordshire District Council - application reference P94/W0432 = "*permission sought for a change of use for building B3 from vehicle workshops to a waste transfer facility (including provision of 1 no. ventilations stack extending 3 metres above the building)*".
- [3] Town and Country Planning (Assessment of Environmental Effects) Regulations, 1988 (SI. 1199/1988).
- [4] Dept. of the Environment Circular 15/88, and the booklet produced to accompany the regulations/circular, "*Environmental Assessment - A guide to the procedures*" (HMSO, 1989).
- [5] Planning Policy Guidance no.1, "*General Policy and Principles*", (Department of the Environment, March 1992), states that the local planning authority cannot make decisions on matters which are the duty of other authorities. In the case of all the licensing matters noted in the environmental statement, these are not relevant matters for consideration as part of the planning application.
- [6] Safeguard International Ltd, "*Proposed Waste Management and Transfer Facility for Safeguard International Ltd at Culham Laboratories, Abingdon, Oxford*". This was submitted with the original planning application by the agents for Safeguard International, Kemp & Kemp (referred to in letter to South Oxfordshire District Council, dated 1st July, 1994).
- [7] In terms of the assessment, quantifying and minimisation of risk, I would direct the local planning authority to the procedures outlined in the Department of the Environment's recent publication, "*A guide to Risk Assessment and Risk Management for Environmental Protection*" (Department of the Environment 1995. Published by HMSO, ISBN 0 11 753091 3 - price £9.95)
- [8] Application (RSA3 application form) to HMIP (Bedford office) for '*authorisation to accumulate and dispose of radioactive waste*' Covering letter was dated 21st October, 1994 (Application was produced/sent by Andrew Burlingham (Safeguard International's Commercial Development Manager).
- [9] "*Policy and Practice for the Protection of Groundwater*", National Rivers Authority, 1992. ISBN 1 873160 37 2. £15.00.
- [10] Two maps cover the area around the site: 1:10,000 sheet 253, 'Abingdon'; and sheet 254, 'Henley on Thames'.
- [11] Oxfordshire County Council, "*Oxfordshire Minerals and Waste Local Plan: Inspector's report on objections to the plan*", David Ward (Inspector), July 1995.
- [12] Oxfordshire County Council permission SO/W/103/76

[13] Oxfordshire County Council Planning Committee report, agenda item 14(a), 23rd September, 1976.

[14] Department of the Environment, "*Review of Radioactive Waste Management Policy Preliminary Conclusions: A consultation document*", August 1994.

[15] "*Review of Radioactive Waste Management Policy*", Cm2919, HMSO 1995.

[16] Department of the Environment, Planning Policy Guidance no.23, "*Planning and Pollution Control*", HMSO, July 1994.

[17] "*Sustainable Development: the UK strategy*", Cm2426, HMSO, January 1994.

[18] Oxfordshire County Council, "*Oxfordshire Structure Plan - written statement*", December 1992.

[19] Oxfordshire County Council, "*Oxfordshire Structure Plan 2011 - consultation draft*", August 1995.

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