

Nuclear Free Local Authorities **new nuclear monitor**



Number 21, May 2010

UK Government consultations on the finance arrangements for radioactive waste management and nuclear reactor decommissioning

1. Introduction

The UK Government launched two consultations on 25th March 2010 looking at the possible financing arrangements for radioactive waste management and decommissioning. This is a part of its series of 'facilitative actions' for new nuclear reactor construction. The first one looks at the methodology for determining how a fixed unit price for disposal of nuclear waste will be set, and the second one looks at regulations clarifying requirements set out in the Energy Act 2008 in relation to Funded Decommissioning Programmes.

(1) Consultation on a methodology for determining a Fixed Unit Price for waste disposal and updated cost estimates for nuclear decommissioning, waste management and waste disposal can be downloaded from the following link:

http://www.decc.gov.uk/en/content/cms/consultations/nuc_waste_cost/nuc_waste_cost.aspx

(2) Consultation on the financing arrangements for nuclear decommissioning and waste handling regulations can be downloaded from the following link:

http://www.decc.gov.uk/en/content/cms/consultations/nuc_dec_fin/nuc_dec_fin.aspx

The closing date for both consultations is **18th June 2010**.

NFLA member authorities are encouraged to send in their own submission supporting the NFLA Secretariat's response and including any relevant local information they may wish to add.

Responses should be e-mailed to:

decomguidance@decc.gsi.gov.uk

or posted to:

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- 2.1 The Government's 2008 White Paper on Nuclear Power pledged that "*operators of new nuclear power stations must set aside funds over the operating life of the power station to cover the full costs of decommissioning and their full share of waste costs*". (1) Government Ministers have frequently said there will be no subsidy for new reactors.
- 2.2 The 'no subsidy' pledge is now more nuanced. The Government will set a "fixed unit price" for waste 'disposal' when approval is given for a new reactor. ***This effectively caps the cost to the operator of nuclear waste disposal and transfers the risk of cost overruns to the taxpayer.*** (2)
- 2.3 The consultation on determining a Fixed Unit Price follows the publication of three pre-consultation discussion papers. (3) Now the 109 page consultation document sets out changes made as a result of feedback during the pre-consultation process; the methodology to be used to determine the fixed unit price and updated estimates of the costs of waste management, decommissioning and waste disposal.
- 2.4 The first proposed change is that operators will be allowed to defer the setting of their Fixed Unit Price (FUP), and prospective investors will instead be offered an "expected Fixed Unit Price" (eFUP). The reason for the deferral is because the FUP set at the end of the deferral period can be expected to be much more accurate. The eFUP provided by the Government is likely to include a smaller risk premium and therefore be lower than a Fixed Unit Price offered at that time.
- 2.5 The second change being proposed is that the Government should take title to nuclear waste and spent fuel earlier, so that it is aligned with the operators decommissioning timetable rather than waiting for the Geological Disposal Facility (GDF) to be available. If the Government were to wait until the GDF is available this would mean the operator would be responsible for the onsite interim storage of waste and spent fuel for several decades after revenues from the nuclear power station had ceased, and potentially for many years after it has been otherwise decommissioned. The Government insists, however, that "*operators will meet their full share of waste management costs. The Government would therefore need to be compensated for the waste management costs that it would incur from Early Transfer.*"
- 2.6 The Government will provide the operator with an "Assumed Disposal Date" (in addition to the Transfer Date) so that the operator knows the expected time period over which the Government will be responsible for maintaining their waste in interim storage prior to disposal.
3. **FUP Methodology – "double the number you first thought of".**
 - 3.1 The methodology to determine a Fixed Unit Price will use estimates of waste disposal costs derived from the Nuclear Decommissioning Authority's (NDA) cost model. The NDA, at the request of DECC, has developed a range of scenarios for geological disposal and these have been used in the model. These estimates will need to be adjusted to take account of various risks and uncertainties. An operator's contribution toward the fixed costs of building a GDF will be estimated on the assumption that legacy and new build waste will be co-disposed. However, this can be revised if, at a later date, there is considered to be a significant risk that a second GDF might be needed in order to accommodate all the waste from new nuclear power stations. The Government is proposing to set the FUP for Intermediate Level Waste (ILW) based on its volume, but for spent fuel the FUP will be based on a cost per kWh generated.
 - 3.2 For a generic PWR reactor with a capacity of 1.35GW, operating for 40 years, decommissioning and waste management costs were estimated to be £636m in the 2007 Nuclear Consultation. This has now risen to £800 – £1800m (up to more than double the original estimate). The increase is because the 2007 estimate is now

considered to have excluded important categories of waste management costs that will need to be met from an operator's independent Fund.

- 3.3 Waste disposal costs for a generic PWR, on the basis of setting an eFUP, on the Assumed Disposal Date is estimated to be £597m, compared with an estimate of £276m given in the 2007 Nuclear Consultation – again the figure has virtually doubled. The increase is because “important assumptions have been revised”.
- 3.4 From past experience of the accuracy of nuclear cost estimates, and indeed judging by the cost escalations just since 2007, the proposed system could prove costly to taxpayers more than 100 years into the future when this waste is actually being disposed of. Both Gordon Mackerron, former chair of the independent Committee on Radioactive Waste Management (CoRWM), and Stephen Thomas, Professor of Energy Policy and Greenwich University, have attacked the government assurances that the owners of new reactors would meet the full cost of waste management, because, whilst ministers have agreed to cap reactor operators' liability, there is only a vague idea of what a nuclear waste repository will cost. (4)

4. Fixed Unit Price (FuP) Consultation Questions.

4.1 Deferring the setting of the FuP

Consultation Question 1:

Do you agree or disagree that prospective operators of new nuclear power stations should be given the option to defer the setting of their Fixed Unit Price? If so, do you agree that this deferral should be limited to 10 years after the nuclear power station has commenced operation? Do you have any comments on the way the Government proposes to determine an expected Fixed Unit Price as the basis for an operator's interim provision in the event that they choose to defer the setting of their Fixed Unit Price?

NFLA response: No – operators should not be given the option of deferring the setting of their Fixed Unit Price. Our view is backed up by the following points below.

- 4.1.1 In the 2008 consultation on the Funded Decommissioning Programme Guidance, the Government stated that:

“Energy companies have indicated that they would be prepared to pay a significant risk premium over and above the expected costs of disposing of waste and spent fuel, in return for having the certainty of a fixed upper price”. (5)

- 4.1.2 Clearly nuclear operators have decided that uncertainties are so high that the risk premium will be too expensive. The nuclear industry should be required to pay the full commercial rate for waste disposal costs. If this proves to be far too expensive, diminishing the prospects of any new reactors, (6) then utilities will need to generate electricity by other, less risky means, or implement efficiency measures. There are plenty of opportunities to do this without requiring the tax payer to accept the risk for such uncertain outcomes. (7) The further the Government allows the industry to move away from a fully commercial arrangement, the greater the risk that costs will fall onto the taxpayer.

- 4.1.3 There can be little confidence in calculations of FUPs and eFUPs. These calculations could be described as “Voodoo Economics”¹ designed to reduce the amount of money

¹ Voodoo economics, according to the Wise website is the derogatory term used by George Bush Senior in his fight against Ronald Reagan for the Republican nomination in 1980. It was used to describe Reagan's economic policies. The unintended consequence of voodoo economics was a large increase in

nuclear operators have to set aside now and leaving the taxpayer with maximum risk. The FUP, with or without the risk premium is dependent on the huge uncertainties in waste disposal costs.

- 4.1.4 One example of uncertainty is, for example, the variation given in the length of time it is expected to take to place all legacy waste in the GDF. The Government says all legacy wastes may not be emplaced until 2130 – 90 years after the GDF is expected to be available. (8) CoRWM recorded the Nirex view that it would take around 65 years after a repository opened to emplace the legacy backlog. (9) So, it has already increased by 25 years. New build wastes could not *start* to be disposed for more than 100 years after new reactors start to come on stream around 2020 - if all goes well. Spent Fuel might require 100 years of cooling in any case. (10) Consequently some new build waste would be in storage for 160 years after the reactors open. If wastes have to remain in storage for 100 years and more, there will be some risk that re-packaging prior to final disposal may be required. It will be difficult for operators to know what kind of packaging to use until they know the characteristics of the GDF.
- 4.1.5 Setting the FUP will also be dependent on guessing on the future performance of the stock market, since funds set aside at the start of reactor operation will need to be invested. The nuclear economist, Ian Jackson, told an audience at Sellafield the commercial price for nuclear waste disposal for each new reactor would be around £1bn - £1.4bn. ***But this would not be payable for 100 years.*** The nuclear utility would make fixed pay-as-you-go payments into a pension-type fund. Assuming a 1% rate of return the utility would pay £16m per year over the reactors 40 year life, but after 100 years this would have accrued £795m in interest. This means only around 3 – 4% is added to the cost of electricity. So the availability of the required funds in 100 years time will depend on the performance of the stock market over the next century – which is almost totally unpredictable. Up to 83% of the cash required is expected to come from interest payments. (11)
- 4.1.6 As soon as a nuclear power station is turned on there is a risk that decommissioning costs will become due at any time as a result of an accident which makes the further generation of electricity impossible. The industry should be required to pay a commercial rate for waste disposal and to set aside sufficient funds for decommissioning as soon as the reactor is switched on. How many credit crunches or stock market crashes can the UK expect between now and the day the decommissioning fund is expected to pay out?

4.2 Taxpayer Liability to Start Early?

Consultation Question 2:

Do you agree or disagree with the proposal that the Schedule for the Government to take title to and liability for an operator's waste should be set in relation to the predicted end of the decommissioning of the nuclear power station? Do you have any comments on the way the Government proposes to recoup the additional costs it will incur in this case?

NFLA Response: No. The Government should not be planning to take title to, and liability for, an operator's waste, as the following comments outline.

the national debt, and the loss of vital social programs as government-funded programs had to be cut in response to the tax cuts. Branding the system as "voodoo" was an attempt by Bush to suggest that Reagan's economic theories were based on magic and imagination, rather than realistic expectations made from solid theory. <http://www.wisegeek.com/what-is-voodoo-economics.htm>

- 4.2.1 The experience of dealing with the problems of the former state nuclear utility company British Energy should have left the Government feeling very nervous about the taxpayer being lumbered with nuclear liabilities. British Energy (BE) became virtually bankrupt in 2002. Under the restructuring plan drawn up to save the company, the government agreed to indemnify the company against any shortfall in its nuclear liabilities fund. The National Audit Office criticised the Government for placing “a significant risk in the hands of the taxpayer.” (12) The Energy Act 2004 already gives the Government the power to give the Nuclear Decommissioning Authority (NDA), with the consent of the company concerned, responsibility for securing the decommissioning and cleaning up of sites operated by companies in the private sector. (13)
- 4.2.2 Obviously the financial health of companies, which today are solvent nuclear utilities, is difficult to predict in 160 years time, or even whether the companies will exist. Rather than regulate to make sure that sufficient financial provision is made by companies applying to build new reactors to cover all eventualities and all uncertainties, the Government seems to prefer to guess what waste management and decommissioning will cost, and then to charge the utilities to take over their responsibilities for them. It is gambling with taxpayers’ money.
- 4.2.3 The Government says because of the very long timescales it considers itself better placed than an operator to manage cost risks, so it will take title and liability earlier in line with the operator’s decommissioning timetable, rather than in line with the estimated availability of a GDF. ***The Government is once again placing “a significant risk in the hands of the taxpayer.”***
- 4.2.4 The Government says it will want to be compensated for, amongst other things, the cost of encapsulating spent fuel for disposal - in line with the assumption that encapsulation of spent fuel takes place immediately prior to ‘disposal’. But in a footnote the Government says:
- “It should be noted that this does not imply that the Government would commit to the provision of encapsulation facilities for the spent fuel from new nuclear power stations. The Government’s view remains that the operator should be responsible for ensuring the encapsulation of its spent fuel and would expect the operator in its FDP to demonstrate credible plans for the encapsulation of its spent fuel and prudent provision for the costs. If Early Transfer means that the Government is ultimately responsible for carrying out encapsulation, the operator’s plans and financial provision would transfer to the Government alongside the spent fuel.”* (14)
- 4.2.5 The NFLA see this as a somewhat muddled argument. It implies that the Government might take title to spent fuel in, say 2080, and be responsible for its storage for 50 years until 2130. But, just prior to the waste being sent to the GDF, the nuclear operator, if it still exists, is asked to come back on to the site it has abandoned, using money it still has in a decommissioning fund, build an encapsulation plant and then encapsulate the spent fuel *before* the Government transports it to the GDF.
- 4.2.6 The reason for the muddle is because, according to the Government there is considerable uncertainty around the costs of encapsulation, and hence the additional risk premium would be large if this were to be incorporated into the FUP. Therefore it does not propose to extend the scope of the FUP beyond the cost of the GDF.
- 4.2.7 The operator is required in its Funded Decommissioning Programme (FDP) to estimate waste management costs. These estimates must be independently verified, periodically reviewed and agreed by the Secretary of State. So the operator will continue to be required in its FDP to make provision for all costs in the independent Fund up to the point that waste is delivered to a GDF for final disposal. Thus, the Government is still in control of the amount of money set aside by the operator. The difference is that, with the

costs associated with the GDF, the Government is proposing to take on the risks, whereas with encapsulation and interim storage the risks are being left with the operator.

- 4.2.8 The case for the Government and taxpayer taking on any risk has not been made. GDF costs are likely to be associated with even more uncertainties than encapsulation costs. The risks should continue to reside with the operator and the Government should regulate to ensure that sufficient funds are set aside.

4.3 FuP Methodology

Consultation Question 3:

Do you agree or disagree that the proposed methodology to determine a Fixed Unit Price strikes the right balance in protecting the taxpayer, by taking a prudent and conservative approach to cost estimation, while facilitating new nuclear build by providing certainty to operators? What are your reasons?

Consultation Question 4:

Do you agree or disagree with the proposed approach to determining an operator's contribution to the fixed costs of constructing a Geological Disposal Facility? What are your reasons?

The NFLA response to both questions is outlined through the following points.

- 4.3.1 The NDA's current best estimate within the range of potential costs for a GDF was given as £12.2 billion undiscounted in the first Pre-Consultation Document. (15) This figure covers both the fixed costs of a GDF and the variable costs of the disposal of legacy waste, which is all known waste that currently exists and waste arising from current facilities. It does not include any provision for new build waste or a number of other potential wastes.
- 4.3.2 The exact cost of a GDF will be influenced by many different factors, including the inventory of waste, the geology of the site in question and the design of a GDF. So the NDA has developed a model – known as the Parametric Cost Model - to allow it to generate a series of cost estimates for geological disposal under different circumstances by varying key parameters that impact on the construction and operating costs.
- 4.3.3 Almost none, if any, of the UK's nuclear facilities was completed on budget. And this is not a problem restricted to Britain's past. India's most recent 10 reactors have averaged at least 300% over budget. (16) The Finnish Olkiluoto reactor– the first to be built in Western Europe since Chernobyl – is already three years late and 75% over budget. (17) It is quite possible to imagine costs of the GDF escalating far beyond those allowed for in the risk premium charged as part of the FUP. Perhaps more likely is the possibility that a GDF fails to make an acceptable safety case or find a suitable volunteer community. What the Government is trying to do in attempting to predict the cost of waste disposal in 2130 is akin to predicting the weather in 2130.
- 4.3.4 The methodology for calculating the FUP will be based on the assumption that new build spent fuel can be co-disposed of with legacy waste. However, if this turns out to be the wrong assumption then subsequent reactors will be charged an FUP which covers building a second GDF. Those operators who have deferred the setting of their FUP may find themselves paying a higher rate. In other words, operators can gamble against there being a 100% escalation in costs if they want to, but the taxpayer must gamble whether they want to or not.
- 4.3.5 The idea of the taxpayer "facilitating new nuclear build" by accepting the risk that cost estimates made now about something which will not be happening until 2130, in order

to provide “certainty to operators” is completely reckless. If utilities are not prepared to accept the risks and the uncertainties associated with waste management costs they should opt for other forms of low carbon generation or efficiency measures with lower risks.

4.4 FuP – pence per kWh

Consultation Question 5:

Do you agree or disagree with the proposal that the units to be used for the Fixed Unit Price are pence per kWh for spent fuel and cubic metres of packaged volume for intermediate level waste? What are your reasons?

The NFLA response to this question is outlined through the following points.

- 4.4.1 It would be far fairer to the taxpayer if a commercial arrangement were made between the GDF operator (or better still a nuclear waste management agency charged with managing waste according to strict environmental principles) and the nuclear operator. If this were the case it appears that building new reactors would probably be too expensive and the energy system would have to follow a more sustainable pathway. But this should not be a reason for paying this hidden subsidy to nuclear operators, which is what the FUP would amount to, since there are far more sustainable alternatives to building new reactors.
- 4.4.2 The consultation document, however, does highlight the huge uncertainties involved in setting the FUP. The NDA’s Parametric Cost Model assumes the KBS-3 copper canister disposal concept - the method being considered in Finland and Sweden - and estimates costs on a per canister basis. The consultation however points out that “*it has not been confirmed that this will be the disposal route finally adopted for a GDF*”. (18) Recent research suggests corrosion of the copper canisters may prove to be more of a problem than previously expected.

“According to a current concept, copper canisters of thickness 0.05 m will be safe for nuclear waste containment for 100,000 years. We show that more than 1m copper thickness might be required for 100,000 years durability.” (19)

Clearly, if such thicknesses of copper were required to ensure safe long term isolation of canisters, the cost and availability issues alone would render the entire disposal concept unviable.

4.5 Cost Estimates

Consultation Question 6:

Do the updated cost estimates represent a credible range of estimates of the likely costs for decommissioning, waste management and waste disposal for a new nuclear power station?

The NFLA response is outlined through the following points.

- 4.5.1 The consultation document is particularly confusing here. Sometimes it talks about decommissioning costs and sometimes decommissioning and waste management costs. Sometimes it discusses costs for a 1.35GW PWR Reactor and sometimes a 1.59GW reactor. Decommissioning and Waste Costs in the 2007 Nuclear Consultation were given as £636m for a 1.59GW reactor, which is equivalent to £540m for a 1.35GW reactor.
- 4.5.2 The NFLA notes that, unsurprisingly, estimates have escalated since 2007:

“The scope of the costs covered by the 2007 estimate did not include all the aspects of waste management currently anticipated for new nuclear power stations in the UK. In particular the source data on which it was based will not have taken account of the requirement for an extended period of interim storage for spent fuel and ILW prior to disposal in a GDF, nor the costs of encapsulation of spent fuel for disposal.”(20)

- 4.5.3 For a generic PWR reactor with a capacity of 1.35GW, decommissioning and waste management costs are now estimated to be in the range £800 – £1800m. This is up to 330% of the estimate given in the 2007 consultation document. ENDS Journal notes:-

“These estimates equate to up to half the construction cost of EDF’s new reactor in Flamanville, Normandy, and suggest back-end costs for EDF and RWE Eon’s proposed 12.4GWe plants in the UK would reach at least £7bn and potentially over £16bn.”(21).

- 4.5.4 The consultation itself highlights how this cost escalation in three years *“has reinforced the extent to which there is uncertainty over the likely costs of decommissioning a new nuclear power station, and that caution is needed in making a generic cost estimate”*. This surely underlines the reckless nature of the Government’s proposal to set the FUP soon and accept some of the risk that prices may escalate more quickly than predicted. There are far too many uncertainties to be able to say that the *“updated cost estimates represent a credible range of estimates of the likely costs for decommissioning, waste management and waste disposal for a new nuclear power station”*.

5. Funded Decommissioning Programme.

- 5.1 Draft Guidance on how decommissioning and waste costs should be paid for was published for consultation in February 2008. (22) The Government responded to consultation responses in September 2008. (23) Companies must produce a detailed funded decommissioning programme (FDP) before new reactors are approved, which includes a commitment to pay into a secure and independently managed fund to cover decommissioning, clean up and waste costs. The FDP should also contain:

- (1) a Decommissioning and Waste Management Plan (DWMP) which must set out the steps the operator will take to treat, store, manage and dispose of any hazardous material during the operation of the station;
- (2) the steps to decommission the installation and clean up the site, including the steps to manage and dispose of the waste (including spent fuel) produced through its subsequent decommissioning and the estimated costs of taking these steps;
- (3) a Funding Arrangement Plan (FAP) which must set out how the operator intends to meet the costs of the designated technical matters and the details of the financial security to be put in place to meet the costs identified.

- 5.2 The Energy Act 2008 established the Nuclear Liabilities Financing Assurance Board (NLFAB) to monitor the funds and provide advice to the Government on all aspects of the financial arrangements operators plan to put in place. The NLFAB is chaired by Lady Balfour of Burleigh. The Members of the Board were announced on March 31 2009. (24)

- 5.3 The Consultation on the financing arrangements for nuclear decommissioning and waste handling regulations, is simply seeking views on whether or not the proposals in the document are explained clearly enough for both new nuclear operators and the public to understand. It is intended that the draft guidance will be published in its final form later in 2010 and that it will take account of comments received as part of this consultation and the Fixed Unit Price Consultation.

- 5.4 The Secretary of State can use a third party assessment of the FDP to gain additional assurance as to the accuracy of the operator's estimates of the costs of the designated technical matters and to provide an independent assessment of the level of prudence made for the financing of the designated technical matters.

If new reactors are built then the NFLA would want to see a Segregated Decommissioning Fund established by the nuclear operator. It is right that the adequacy of this fund is checked by the Government and that it should be able to recover its costs for verifying the adequacy of the fund.

Where a third party assessment of the FDP is used, the NFLA believe this should be an independent third party appointed by the Secretary of State, not by the nuclear operator.

6. References

(1) Meeting the Energy Challenge: A White Paper on Nuclear Power, BERR January 2008

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(2) Pagnamenta, R. Key adviser says that the UK's new nuclear policy is flawed, Times January 28, 2008.

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(3) Pre-consultation discussion paper No.1 on a methodology to determine how the fixed costs of building a geological disposal facility should be apportioned to and shared between operators of new nuclear power stations. Office for Nuclear Development, October 2008.

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(4) Eaglesham, J. 'Subsidy' for nuclear power attacked, Financial Times, June 11, 2008

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(5) Consultation on Funded Decommissioning Programme Guidance for New Nuclear Power Station, BERR, February 2008, para 2.9

<http://www.berr.gov.uk/files/file44486.pdf>

(6) Jackson, I, Buried Costs, Nuclear Engineering International, 27th March 2008

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(7) Just one current example of the potential is given in a letter from 30 academics in the Independent on 4th May 2010. <http://www.independent.co.uk/opinion/letters/letters-nuclear-power-1961532.html> It concludes:

"The fact is, we are approaching an energy future of rich and bewildering choice, where a variety of radically different options present technically and economically viable alternatives – a future where the nuclear option is the dearest and riskiest of gambles".

(8) para 3.2.24 FUP Consultation Document.

(9) Mackerron, G. Response to 'Consultation on Funded Decommissioning Programme Guidance for New Nuclear Power Stations', BERR February 2008. Sussex Energy Group, University of Sussex, May 2008

http://www.sussex.ac.uk/sussexenergygroup/documents/decom_funding_consultation_gm.pdf

(10) See footnote 20. FUP Consultation Document.

(11) The Economics of New Nuclear Build at Sellafield. Presentation by Ian Jackson.

Slide Share 7th July 2009 <http://www.slideshare.net/jacksonconsult/new-nuclear-reactor-build-at-sellafield>

(12) Guardian, 17th March 2006

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The Restructuring of British Energy, National Audit Office, 17th March 2006

http://www.nao.org.uk/publications/0506/restructuring_of_british_energy.aspx

(13) See para 44 Energy Act (2004) Explanatory Notes.

<http://www.opsi.gov.uk/acts/acts2004/en/04en20-a.htm>

(14) Footnote No.21 page 23.

(15) Pre-consultation discussion paper No.1 on a methodology to determine how the fixed costs of building a geological disposal facility should be apportioned to and shared between operators of new nuclear power stations. Office for Nuclear Development, October 2008.

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(18) para 3.4.6

(19) “*Water Corrodes Copper*” G. Hultquist et al (July 2009) Catal Lett (2009) 132:311–316

http://www.mkg.se/uploads/Water_Corrodes_Copper_-_Catalysis_Letters_Oct_2009_-_Hultquist_Szkalos_et_al.pdf

(20) para 5.3.20

(21) DECC may share £16bn new nuclear waste risk, ENDS Report, April 2010

<http://www.endsreport.com/index.cfm?action=report.article&articleID=22346>

(22) Consultation on Funded Decommissioning Programme Guidance for New Nuclear Power Station, BERR, February 2008

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<http://www.telegraph.co.uk/earth/earthnews/3326437/Nuclear-power-station-costs-to-go-to-power-companies.html>

(23) The Government Response to the Consultation on Funded Decommissioning Programme Guidance for New Nuclear Power Stations, BERR September 2008.

<http://www.berr.gov.uk/files/file47629.pdf>

(24) See DECC website reference -

http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/nuclear/new/waste_costs/nlfab/nlfab.aspx