Submission to the UK Plutonium Consultation

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INTRODUCTION

The UK's stockpile of plutonium located at Sellafield arises as a direct result of successive government policy mistakes over decades. Decisions to proceed with commercial reprocessing operations made originally in the 1970's, have been sustained through the intervening decades by governments that continually restated that reprocessing was of direct benefit to the UK economy. This of course has proven utterly wrong, with the result that the UK has the largest stockpile of commercial, reactor-grade plutonium of any nation. Rather than being of economic benefit, operations at Sellafield have led to increased radioactive waste discharges into the marine environment of the North-east Atlantic and the atmosphere, the production of large volumes of highly radioactive liquid waste, and the creation of a security and proliferation threat in the form of over 112,000 kilograms of plutonium. As little as 5 kilograms of this material would be capable of being used to manufacture a nuclear weapon – either of a crude design or advanced.

The mistaken policy of reprocessing was compounded when permission was given in the mid-1990's for the construction of the Sellafield MOX Plant, SMP. Despite evidence to the UK government that the plant would be an economic failure, and that the technology would be incapable of producing reliable high quality fuel, the SMP was finally given authorization by the Blair administration in 2001. In the following ten years rather than producing over 1200 tons of MOX fuel, which would have contained approximately 60 tons of plutonium, the SMP has produced 13 tons of MOX, containing around 650kg of plutonium.

When the UK government finally admitted that the SMP had been an utter failure, the response from the nuclear industry, in particular the unions at Sellafield, was to claim that this presented an opportunity for a new MOX plant to be built at the site. This call, has been echoed by the NDA, individual politicians, and industry related bodies, such as the Smith School.

It appears that as with the decades long failure to confront reality at Sellafield, historical mistakes are about to be repeated with a decision to approve the construction of a new MOX plant.

The following analysis summarises the utterly superficial approach adopted by the NDA and consultants when considering such issues as security, non-proliferation, MOX production, and key international developments. The conclusion reached by these authors is that so long as this flawed approach to major policy decisions is the basis for decisions, then history will continue to repeat itself. The consequences

for the environment, public health, nuclear non-proliferation and security will be wholly negative. The stated objective of the NDA of securing a long-term safe and secure storage and disposal for the UK's stockpile of fissile material will remain unrealised.

FAILURE OF U.S. MOX LTA

As the NDA reports, the United States and Russia have chosen to declare excess to military requirements a stockpile of plutonium. Here we focus on the U.S. Plan, which includes the construction of a new MOX plant, designed, and to be built and operated by Shaw AREVA MOX Services, and the attempt to fast-track the program by testing AREVA manufactured MOX fuel in a U.S. Reactor. Similarly much could be written about the Russian program, its failures to make any substantial progress over the last 13 years, and why its adoption of the Fast Breeder Reactor, FBR, route will increase the security, safety and proliferation risks from its plutonium stocks.

In January 2009 the NDA mistakingly characterised the U.S, plutonium program as, ***"Lead test assemblies of MOX fuel are undergoing irradiation tests in a Duke Energy PWR and construction has been started on a MOX fuel manufacturing plant in South Carolina."***

In fact the U.S, LTA program has hit a wall, and before the NDA January 2009 report. The MOX test, scheduled to run for four-and-a-half years to demonstrate the safety of MOX fuel in Duke Energy's Catawba nuclear reactor, had to be aborted after only three years. The fuel assemblies, produced by the French state-owned company AREVA, grew abnormally long in the reactor. This excessive growth is a safety hazard, because it can deform and damage the MOX fuel. Duke Energy informed the Nuclear Regulatory Commission (NRC) about the aborted test in a June 10 2008 report.

As one of the principal organisations stated at the time, ***"The failure of the plutonium fuel experiment is another major setback for the MOX program, and will further increase the already considerable cost overruns, delays and risks,"*** said Tom Clements, FOE's Southeastern Nuclear Campaign coordinator, who is based in Columbia, South Carolina. ***"Congress needs to pull the plug before even more taxpayer money is wasted."*** [1]

AREVA told the NRC in April 2009 that it has not as yet determined the cause of the problem, although it may be related to an experimental alloy known as "M5" AREVA uses in the "guide tubes" where the control rods that shut down the reactor are inserted. Whatever the cause, the problem indicates that the NRC's licensing process for new fuels is inadequate.

WITHDRAWAL OF ONLY U.S. UTILITY

The failure of the LTA tests in the U.S, has set back the program by years. Duke Energy having failed the MOX test has now abandoned plans to continue the

1 http://www.ucsusa.org/news/press_release/nuclear-fuel-test-failure-0140.html

program. In its annual filing with the Securities and Exchange Commission (SEC) on February 27, 2009, Duke revealed that the contract to use MOX had ***"automatically terminated on December 1, 2008"*** after a failed attempt to renegotiate the contract with Shaw AREVA MOX Services (MOX Services), contracted by DOE to carry out the MOX program.[2]

As of May 1st 2011, no other utility has agreed to take up the MOX test program. In discussions with the TVA utility, the DOE has opened the possibility that the much troubled MOX plant at the Savannah River Site in South Carolina will have to be redesigned to include a Boiling Water Reactor MOX fuel assembly line. This was not in the original design parameters. If this proceeds, further costs and years more delay will be inevitable. *"Redesign of the MOX plant at SRS in order to provide a wider variety of reactors to use the controversial MOX fuel is presented as a step forward but actually confirms that no progress in this troubled program has been made,"*[3]

The failure of the NDA authors to acknowledge that the only nation in recent years to embark on a new large scale plutonium MOX program has suffered a serious setback, that will delay by years and potentially end the MOX option, raises questions as to the robustness of the NDA analysis.

Why for example is this failure not even acknowledged by citing the report of Duke Energy to the U.S. Nuclear Regulatory Commission?[4] submitted 7 months before the publication of the NDA report.

U.S. GENERAL ACCOUNTING OFFICE ON U.S. MOX PLANT

"we have reported on significant problems with NNSA's and EM's ability to manage major projects within cost and schedule targets" U.S. GAO, March 2009, including reference to SRP/SRS MOX Fuel Facility.

The GAO's assessment could equally be said to apply to the disastrous economic performance and financial mismanagement of the UK's nuclear program, including plutonium operations at the Sellafield site. Nothing in the NDA documentation we have reviewed, as well as the AREVA influenced report from David King and the Smith School, suggests any acknowledgement or understanding of past failures. In fact exactly the opposite seems to be the default position. It appears that history does not exist when it comes to the Sellafield site and its utter commercial failure at great public expense, financially, in environmental and public health terms, and in terms of broader security and nuclear non-prolifertation implications.

The U.S. General Accounting Office report we believe has serious lessons for the UK. Unfortunately we have little confidence that they will even be acknowledged let alone understood.

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2 Duke Energy Corporation "Form 10-K" annual report filed with the SEC, Feb. 27, 2009

3 Tom Clements, the Southeast nuclear campaign coordinator for Friends of the Earth, April 2011.

4 For Duke's June 10, 2008 report to the NRC, go to the NRC's ADAMS digital library. Search for "ML081650181" at www.nrc.gov/reading-rm/adams/web-based.html.

On March 4th, 2009, the Government Accountability Office (GAO) released a report entitled Department of Energy: Contract and Project Management Concerns at the National Nuclear Security Administration and Office of Environmental Management which underscores potential problems in reliably delivering MOX fuel to a utility.[5] Concerning the MOX plant at SRS, GAO stated that ***"the project's schedule, in addition to other problems, does not adhere to a key practice that is fundamental to having a sufficiently reliable schedule—specifically, MFFF project staff have not conducted a risk analysis on their current schedule using statistical techniques. … Consequently, NNSA cannot adequately state its level of confidence in meeting the MFFF project's completion date, and NNSA's schedule for the project therefore may not be reliable."***

We make no apologies for citing substantial extracts from the GAO report as it may well be the only way the NDA actually takes account of important developments directly relevant to the current UK decision making process. The GAO,

"has identified nine practices associated with effective schedule estimating: (1) capturing key activities, (2) sequencing key activities, (3) establishing the duration of key activities, (4) assigning resources to key activities, (5) integrating key activities horizontally and vertically, (6) establishing the critical path for key activities, (7) identifying "float time" between key activities, (8) performing a schedule risk analysis, and (9) distributing reserves to high-risk activities. Most of these practices are also identified by DOE in a recent guidance document on establishing performance baselines.[6]

Although the MFFF project's schedule was developed using many of these practices, the schedule, in addition to other problems, does not employ a key practice that is fundamental to having a sufficiently reliable schedule—specifically, MFFF project staff have not conducted a risk analysis on their current schedule using statistical techniques. Consequently, NNSA cannot adequately state its level of confidence in meeting the MFFF project's completion date of October 2016, and NNSA's schedule for the project therefore may not be reliable. In addition, we found that the schedule does not fully employ other key practices that are also fundamental to having a sufficiently reliable schedule. For example, another key scheduling practice—the proper sequencing of key activities—requires that project officials logically schedule key activities in the order that they are to be carried out to establish a basis for guiding work and measuring progress. However, based on the preliminary results of our analysis, the MFFF project only partially satisfied this practice. Specifically, we found that almost 1,500 of the over 24,000 activities listed in the MFFF project's schedule were not sequenced in a logical manner. As a result, we have reduced confidence in

5 See, http://www.gao.gov/products/GAO-09-406T

6 See, U.S. Department of Energy, Performance Baseline Guide, G 413.3-5 (Washington, D.C.: September 12, 2008

the ability of the MFFF project's schedule to accurately reflect how the MFFF project will be executed.

This was both predicted by those such as the authors, and groups and individuals in the U.S, who opposed the original decision to proceed with a U.S. MOX route for plutonium disposition in the 1990's.

AREVA U.S. MOX PLANT COST OVERUNS

The new AREVA MOX plant plant under construction at the SRS was originally estimated at $1.6 billion in 2004.[7] In March 2007 the GAO reviewed DOE's major construction projects and found that the AREVA MOX plant at SRP/SRS had incurred more than a $3.2 billion cost increase over the initial cost estimate and a schedule delay in excess of 11 years more than initially estimated.

As recently as December 2008, the MFFF project's earned value management system developed by the contractors, including AREVA, indicated that the project was meeting its cost and schedule goals. However, correcting weaknesses in the MFFF project's schedule is important because the project is currently spending approximately $25 million a month and plans to spend an additional $3.6 billion before the project is completed in 2016. The total cost will almost certainly be in excess of $5 billion.

Again none of this was even referred to in NDA documents. Given that the principal designer of the U.S. MOX plant is AREVA and that the same company is currently part operator of the existing Sellafield MOX Plant, and would almost certainly be the designer and contractor for any new MOX plant at Sellafield, this reveals either a poor understanding of current global nuclear developments, or a conscious and deliberate attempt to mislead decision makers as to the reality of plutonium MOX programs.

SAFETY VIOLATIONS

Only on May 5th 2011 further details emerged of serious safety problems at the AREVA MOX plant construction site at SRS.[8] Two of the NRC safety reviewers for the project have revealed that the NRC has taken shortcuts on safety to avoid delaying the construction. Work on the facility was allowed to begin, they say, before some of the most essential questions were fully answered. They have been particularly concerned about the danger of chemical explosions, the adequacy of the ventilation and radioactive waste disposal systems and the way the plutonium will be tracked as it is processed.

Alex Murray, the lead chemical process engineer on the NRC review team, has said that he was removed from the project in 2007, after he repeatedly warned that safety plans to

7 Augusta Chronicle April 15, 2011.

8 Safety Reviewers Raise Questions about Construction of New Nuclear Fuel Plant MOX Fuel Fabrication Facility on November 19, 2007 (National Nuclear Security Administration) Donna Deedy, special to ProPublica with Michael Grabell, ProPublica May 5, 2011.

prevent a chemical explosion risk specific to this type of plant were inadequate and could lead to a significant release of radioactive material.

After Murray was reassigned, the NRC hired a chemical engineering professor from the Georgia Institute of Technology who had participated in technical reviews for the Department of Energy since 1979. Tedder said he resigned less than a year later because he believed that the plant's chemical engineering plans were incomplete and felt that his concerns were brushed aside.

The NRC set up a two-step licensing process for the Savannah River MOX plant. Construction would be authorized after it was determined that Shaw Areva's design and safety plans provided reasonable protection against natural disasters and catastrophic accidents. The NRC would then verify that the plant was properly built before issuing an operating license.

But the NRC was under pressure from some lawmakers and the industry to streamline the regulatory process. It decided to defer some of the safety decision until the operating phase.

The same flawed approach to assessing the best options to managing the Uk's even greater civil plutonium stockpile is evident from the documentation provided for public comment by the NDA. These recent important developments have emerged since the original consultation documents were published by the NDA. However, it is obvious from even a cursory review of the status and reports on the U.S. MOX program that plans are not proceeding in a timely manner. Far from it. The NDA has chosen it seems to avoid any mention of these substantial economic and safety issues. Instead it provides superficial reference to the progress being made in the U.S. MOX program.

How is it possible for a UK government body, attempting to address the problem of one of the most hazardous materials on the planet, and which as a result of successive government decisions finds itself with the world's largest single stockpile, that such important information is excluded from public consideration ? Equally how is it possible for the UK public and international community, to have any confidence that the decision making process is valid, and that the end result will be effective ?

POOR MOX QUALITY CONTROL

The issue of the production standards of MOX fuel is not addressed by the NDA. There appears to no concern that the production of MOX fuel and the quality control and assurance applied has fundamental implications – for the safety of the fuel, the reactors that it is used in, and the ability of MOX production plants to perform as stated.

The fact that a new MOX plant is being proposed is in large part due to the utter failure of the SMP. Prior to the SMP opening, the UK government, in particular the Nuclear Installation Inspectorate, NII, was provided analysis by these authors that the production standards of MOX fuel at Sellafield were the underlying reason for the falsification scandal of 1999. This analysis, which we include as an attachment, made the case that the producer could not meet specification and that was the reason for deliberate, management sanctioned falsification. In the aftermath of the falsification scandal, we were able to obtain information on MOX fuel production

standards as applied by Belgonucleaire and Cogema/AREVA.[9] Our conclusion was the the production standards applied by these two companies was actually inferior to that of BNFL. Nothing has changed in production standards in the intervening period to show us that the fuel producer are producing a high quality product, without major safety implications. We attach documentation that provides details on MOX fuel production. As we also confirmed in meetings with French nuclear safety regulators, there is no regulatory oversight of the nuclear fuel industry. They do not inspect production, but rely on the assurances for the customer that they are meeting the specification agreed with the producer. This is a wholly unacceptable position. The failure of the NDA to discuss the background the to the failures of the SMP, and its link to the MDF falsification scandal is profoundly worrying, if not surprising. It is from this period the failure of the SMP, and the multi-year delay in Japan's program, that we arrive at today. Of the three MOX deliveries made to Japan between 1999-2001, one batch was returned to the UK and sits in Sellafield; one batch was loaded into a reactor after 10 years of storage and six months later Fukushima-daiichi unit 3 exploded, and is currently undergoing partial fuel melt down. The third batch remains in storage at the Kashiwazaki-kariwa reactor site, likely to remain so indefinitely. All other MOX loadings that have occurred since, are now under threat.

The NDA does not even acknowledge any of the this as having taken place. It therefore is incapable of explaining the reality of plutonium MOX fuel to the wider public and policy and decision makers. It is therefore no surprise the mistakes of the past continue to be repeated.

MOX REACTOR SAFETY

We find that in the NDA approach to assessing the implications of MOX fuel use in UK reactors, the issue of safety is poorly analysed. Because MOX cores have greater quantities of plutonium and other actinides than LEU cores throughout the operating cycle, the source term for radiological releases caused by severe reactor accidents will be greater for MOX-fuelled PWRs.

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9 *Currently, quality control issues are a factor in the uncompleted AREVA MOX plant at SRS. Three structural components were procured and installed by the prime contractor at Savannah River during construction of the MOX Facility that did not meet the technical specifications for items relied on for safety. These substandard items necessitated costly and time consuming remedial action to, among other things, ensure that nonconforming materials and equipment would function within safety For example, as of October 2008, the MOX Facility had incurred costs of more than $680,000 due to problems associated with the procurement of $11 million of nonconforming safety-class reinforcing steel. In general, the internal control weaknesses we discovered could have permitted, without detection, the procurement and installation of safety critical components that did not meet quality assurance standards. In a worst case scenario, undetected, nonconforming components could fail and injure workers or the public. The Department's Office of Environmental Management (EM) supported the conclusions and the recommendations reached and told us that it had identified similar quality weaknesses at Savannah River. While the NRC stated that these were of the lowest level of severity, the Auditor General concluded, "however, we do not agree that the problems were of low significance.Unless and until the Department resolves the internal control weaknesses that permitted the failures NRC identified at MOX, it is possible that non-conforming parts or components that do not meet safety standards could continue to be procured and installed in critical nuclear facilities."*

This failure to address fundamental safety issues was a mistake before the events of 2011, but with the Fukushima-daiichi nuclear accident that began on March 11th, it is obvious that the implications for all nuclear power plants, operating and planned have to be fully investigated. This will take several years. The additional hazard of a plutonium MOX fuelled reactor requires that the UK government suspend all further consideration of the MOX route for 'managing' its plutonium stockpile.

Prior to the Fukushima-daiichi accident, the nuclear industry claimed that a Chernobyl-type accident cannot happen in the West because Western reactors have robust containment structures, and the particular accident sequence that occurred was specific to Chernobyl- type (RBMK) reactors. However, while the presence of a containment dome at Western reactors reduces the risk of such accidents, it does not eliminate it entirely. Analysts have identified hypothetical accident sequences at U.S. LWRs which can lead to energetic mechanical dispersal of the fuel, catastrophic failure or bypass of the containment and significant releases of low-volatile core fragments in the form of aerosols.

Fukushima has proven that this was indeed the case. The fact that reactor unit 3 at Fukushima-daiichi was loaded with around 5% MOX fuel - supplied by a French/Belgian consortium, including AREVA's Cogema, highlights that MOX reactors pose additional hazards to uranium fuelled plants. One of the leading critics of MOX fuel use, Dr Edwin Lyman, has prepared numerous analysis on the safety implications of MOX use.[10] These have consistently concluded that the consequences of severe accidents at MOX-fuelled LWRs will be greater than those at LEU-fuelled LWRs, as a result of the larger inventories of plutonium and other actinides in MOX cores.

Nothing we have seen in the NDA documents on UK plutonium options indicates that there has been any serious assessment of the reactor safety implications of MOX fuel use. It is worth highlighting that nuclear safety issues, including MOX fuel use have been a major issue at Fukushima-daiichi over many years. Both authors of this report have worked in Japan, including providing testimony against plans by Tokyo Electric Power to load large volumes of MOX fuel manufactured by AREVA. If it had not been for the sustained opposition of Fukushima Prefecture citizens, together with NGO's such as Green Action, CNIC, Greenpeace and TEPCO shareholder members, and the then Prefectural Governor of Fukushima, TEPCO would have undertaken an extensive MOX fuel program during the last 10 years. As such, MOX fuel

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10 See, Public Health Risks of Substituting Mixed-Oxide For Uranium Fuel in Pressurized- Water Reactors
Edwin S. Lyman, Science and Global Security, Volume 9, 2000.

delivered on the British flagged vessel, Pacific Teal, in September 1999, was unable to be loaded into Fukushima-daiichi unit 3 until September 2010. The safety and radiological consequences of the original plans of TEPCO and AREVA if they had been realized would of course have made the present accident at Fukushima-daiichi even more serious, including the presence of many more tons of plutonium, both in the cores of reactors and in the spent fuel areas.

These issues are of course never acknowledged, never mind analysed in the NDA documentation.

The implications for Japan's MOX fuel program of the Fukushima accident are still evolving. Almost certainly, TECO will not proceed with MOX fuel use in any of its remaining reactors for many, years if ever. MOX fuel delivered in 2001 on board the British freighter the Pacific Teal remains in the storage pool at Kashiwazaki-kariwa. Chubu Electric, the sole Japanese utility with an actual contract to receive MOX fuel from the SMP, has just agreed to shut down its three nuclear reactors at Hamaoka. Prior to the accident, Chubu along with other utilities were planning to receive a shipment of AREVA MOX fuel that would have departed Cherbourg, France in the week beginning April 4th. As a result of public disclosure of the shipment following the Fukushima accident, Chubu announced that they would be delaying the transport until 2013. That was before their reactors at Hamaoka were ordered closed by Prime Minister Kan. Given the seismic hazards at this site, the prospects are that they will never restart, or of they do it will be many years hence. In contrast to the NDA assessment that assures the reader that MOX fuel use is well underway in Japan, the program is now even more sensitive an issue than before, and is highly vulnerable to many years of delay.

Given the safety implications for the reactor designs being proposed to be built in the UK and which would in theory be loaded with MOX fuel, the option to recommend the domestic MOX option for managing the UK's plutonium stockpile should be rejected as a result of this consultation.

NUCLEAR PROLIFERATION

The authors have over 80 years of experience in considering and analysing the proliferation implications of plutonium. In all that time, we have found UK government analysis almost without exception to be of an inferior level to that of other nations, in particular the United States. Perhaps as a result of the effectiveness of the UK nuclear industry lobby, in particular that part of the industry associated with Sellafield, analysis has tended to be superficial and far from comprehensive. Given the seriousness of the subject this is nothing short of a disgrace that has not served the interests of UK citizens and the wider international public well. It is this approach that has directly led to the UK's acquisition of over 112,000 kilograms of plutonium, 5kg of which would be capable of producing an advanced or crude nuclear weapons – depending on the level of sophistication of the weapons designer.

The NDA states repeatedly that the MOX route will reduce the proliferation risks from separated plutonium. This is in direct contradiction to the most authoritative experts on these issues – who are not unfortunately consulted by the UK government. The literature on this subject is considerable. If the NDA wished to have addressed the subject in a comprehensive manner it would have indicated that it had consulted and reviewed this literature. We see no indication in their documentation that they have done so. Similarly, the contribution of David King and his AREVA sponsored report on the matter, is even less credible when addressing proliferation implications. Given the role of AREVA in both supplying the NDA with information, lobbying for approval for a new plant that it would it most certainly design and construct, this is hardly surprising. If there is one company and nation in western Europe that has a worse track record in non-proliferation it is AREVA (and its component parts) and the French state. AREVA's engineering designer, SGN, provided both the design of the Dimona reprocessing plant to Israel and the research reactor to Iraq. Both facilities central to each countries nuclear weapons program.

AREVA has spent the better part of two decades arguing that reactor-grade plutonium is not capable of being used to manufacture nuclear weapons. This has been a position driven by commercial self interest, not nuclear non-proliferation considerations. The many respected analysts, including former nuclear weapons designers, that have provided evidence that reactor-grade plutonium is a nuclear weapons material is extensive. We would recommend that those in the NDA, wider UK government and perhaps even the Smith School who have yet to understand this aspect of commercial plutonium make themselves aware of the issue.[11]

It is not in AREVA's interest, or the UK government it seems, to explore in depth the multifaceted proliferation implications of a UK decision to sanction the use of plutonium as a commercial reactor fuel running into the middle of this century. Nowhere is it indicated that the NDA gave consideration to signal to other nations operating nuclear programs, and the efforts in recent years to discourage commercial reprocessing and plutonium use. If the UK over decades signals that there are both economic and non-proliferation benefits to the use of MOX fuel the signal to other nations is that it is a legitimate method of nuclear power generation. The UK in its defence of the retention of its nuclear weapons program indefinitely argues that the future is unknown with many new potential threats. While a flawed approach to both disarmament and non-proliferation, the UK already with little credibility on the international stage in such forums as the NPT and Conference on Disarmament will undermine what little it has left by sanctioning a domestic plutonium program.

SECURITY AND TERRORISM

As with non-proliferation issues, there has been a great deal of analysis on the security and in particular terrorist hazards of commercial plutonium, including MOX fuel production, transport and use. Again, the NDA provides bland reassurances that the MOX path, in particular domestic use in a new generation of reactors will reduce the threat from plutonium.

They are of course mistaken.

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11 Reactor-Grade Plutonium Can be Used to Make Powerful and Reliable Nuclear Weapons: Separated plutonium in the fuel cycle must be protected as if it were nuclear weapons. Richard L. Garwin(1) Senior Fellow for Science and Technology Council on Foreign Relations, New York August 26, 1998.

Firstly, there is a contradiction fundamental to what the NDA is both saying and doing. If there is a security problem with plutonium at Sellafield over what time period, then the NDA should not be making the problem worse by sanctioning further reprocessing at the THORP and B205 plants.

Secondly, any production process involving plutonium increases the risks of diversion but third parties. A new MOX plant will extend the time period, diversion pathways and therefore opportunities to remove plutonium from the weak safeguards that are applied.

Once MOX fuel is removed from the site and delivered to the reactor the opportunities for interception, seizure, and use by a third party has been well researched, including as applied to the regular transports of plutonium by AREVA. The level of security in France is no different for plutonium as it is for MOX fuel. The fundamental problem is that France has turned a nuclear weapons material into a commodity. Except plutonium, as even the NDA must surely realize, is not a commodity. We attach several papers that make this point clear.

CONCLUSION

We are not impressed by the level of analysis provided over these past three years on the options for managing the UK stockpile of plutonium. Such a serious subject requires the highest standard of analysis. It also must seek to ensure societal confidence that the process and decision making is being driven by a public body that is seeking the best outcome in terms of safety, security, and the public interest. The NDA utterly fails to do this and demonstrates by its selective history, major omissions and misleading statements that it is being influenced by a commercial interest. The presence of AREVA is not merely a shadow, but a full blown elephant in the room. AREVA, before the Fukushima accident was on a difficult situation with major problems with its EPR projects. Effectively securing indefinite state subsidy to manage the UK's plutonium through the remainder of the 21st century, will not serve the public interests but it will improve the finances of AREVA and the French state. The fact that the NDA has appointed the same economist that drafted the much redacted, and even more discredited Arthur D Little report on the economic benefits of the SMP, to provide a similar analysis on the options for managing UK plutonium reveals much about the culture of decision making in the UK when it comes to nuclear affairs. The process has been a sham and a disgrace, and we have no confidence that a decision will be made that will reduce the threat from Britain's plutonium mountain. In fact the opposite.

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