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The Atomic Bizarre: *Nuclear security and proliferation – key issues of concern*

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Nuclear security, nuclear weapons and nuclear new build – key issues for consideration by the NFLA

Nuclear Free Local Authorities (NFLA) Annual Policy Seminar

Friday 6th December 2013, Committee Room 4, County Hall,

Atlantic Wharf, Cardiff, CF10 4UW 1.30am – 3.30pm

Twenty one years ago this month, a Conservative minister said in a written reply to a Labour MP:

“It is my understanding from the limited information available that Iraq ceased to participate in the activities of the Baghdad pact nuclear training centre when it was transferred to Tehran following the revolution in Iraq in 1959.”

HC Deb 14 December 1992 vol 216 cc23-4W

This reveals that a British government was responsible for supplying both Iraq and Iran with basis for their nuclear programmes. And therein lies a long-standing problem

The minister was Michael Heseltine; the MP, Paul Flynn

This goes to show that Parliament has a long history in overseeing nuclear activities- and nuclear activities, including British exports, go back a very long way

A year ago the *Independent* newspaper reported:

"Britain today issued a renewed appeal for countries to come together and combat the threat of a nuclear terrorist attack. Foreign Office minister Alistair Burt said the number of incidents involving the loss or theft of nuclear materials around the world was growing and nations needed to show the "utmost vigilance...."Nuclear terrorism is a real and global threat. A successful attack, no matter where in the world it came, would be catastrophic.....Catastrophic for the immediate devastation and terrible loss of life, and for the far-reaching consequences - psychological, economic, political and environmental. Such an attack was unthinkable just a generation ago. But it is now a possibility we need to confront with the utmost vigilance."

Independent, 1 November 2012

Britain urges countries to join forces in combating nuclear threat

[<http://www.independent.co.uk/news/uk/home-news/britain-urges-countries-to-join-forces-in-combating-nuclear-threat-8273634.html>]

Grounds for concern

In March 1962 a 10-year-old boy discovered a cobalt-60 industrial radiography source, which not in its shielded container. The boy carried the source in a pocket for several days, then it was placed in a kitchen cabinet in his home. Four family members died of resulting radiation sickness: the boy died 29 April (day 38), his mother on 19 July, his 2-year-old sister on 18 August, and his grandmother on 15 October. Radiation exposure was not identified as the cause of the deaths until July-August. The father survived with lesser symptoms. Five other individuals also received significant overdoses of radiation.

(<http://www.johnstonsarchive.net/nuclear/radevents/1962MEX1.html>)

A similar incident happened occurred on 13 September 1987, at Goiânia, in the Brazilian state of Goiás (Gojas), after an old radiotherapy source was stolen from an abandoned hospital site in the city. It was subsequently handled by many people, resulting in four deaths. About 112,000 people were examined for radioactive

contamination and 249 were found to have significant levels of radioactive material in or on their body

Back in Mexico, sometime in November, 1983, Sotelo and Ricardo Hernandez removed a Picker C-3000 teletherapy unit from a hospital warehouse in Juarez, near Mexico's border with US, and loaded it onto their pickup. For one reason or another, the source capsule was perforated and approximately 1,000 pellets of Cobalt⁻⁶⁰ fell into the bed of the truck. They then took the teletherapy unit to a local scrapyard and sold it for \$10.

At the scrapyard, many of the cobalt pellets that had remained in the source capsule were scattered around when the teletherapy unit was dropped by a magnetic crane. The rest of the pellets stuck to the magnet and became mixed with steel leaving the scrapyard. Most of the latter went to two local foundries. One foundry melted down the steel to produce the pedestal-style table legs used in fast food restaurants. The other produced steel rods (re-bar) for reinforcing concrete.

The problem was discovered when a truck carrying the reinforcing rods made a wrong turn – ironically at the Los Alamos nuclear weapons complex in New Mexico- and set off a radiation alarm. Within three days the two foundries had been identified as the source of the contaminated table legs and re-bar, and the scrapyard and contaminated pick-up truck had been located.

(<http://www.ornl.gov/ptp/collection/accidents/juarez.htm>)

The issue of radioactively-contaminated recycled metals is something I know the NFLAs has rightly taken up.

Earlier this week, another worrying radiological incident took place, once again in Mexico. Reuters reported:

“Thieves have made off with a truck in Mexico carrying a dangerous radioactive source used in medical treatments, a material that could also provide an ingredient for a so-called "dirty bomb".

The U.N. nuclear agency said it had been informed by Mexican authorities that the truck, which was taking cobalt-60 from a hospital in the northern city of Tijuana to a radioactive waste-storage centre, was stolen near Mexico City on Monday.”

Truck with "dangerous" radioactive material stolen in Mexico

Reuters, 2 December 2013

(<http://uk.reuters.com/article/2013/12/04/uk-mexico-nuclear-iaea-idUKBRE9B30FF20131204>)

Nuclear Security arrangements in the UK

Paul Flynn was told by the energy minister in a written Parliamentary answer in October three years ago:

“Under the Nuclear Industries Security Regulations 2003, the civil nuclear industry is required to have in place a range of security measures to protect nuclear sites, materials, transports and information. The cost of these security measures and the costs of their regulation by the Office of Civil Nuclear Security are met by the civil nuclear industry in accordance with the Nuclear Industries Security (Fees) Regulations 2005 and the Energy Act 2004”

The minister added:

“In addition to this, my Department has provided some capital funding to the Civil Nuclear Police Authority (CNPA) for the procurement of large items of equipment to enable the Civil Nuclear Constabulary to operate effectively. The CNPA then recovers the cost of these items from the civil nuclear industry. In 2009-10, £2.7million was provided to the CNPA by the Department.”

(Hansard, 18 October 2010: Column 481W)

Hinkley Point C's new security issues

In October this year, Paul wondered about the changed security arrangements that might now exist as the French companies, EDF Energy and Areva, plus Chinese companies China General Nuclear Corporation and China National Nuclear Corporation plan to collaborate on the planned new nuclear power plant at Hinkley Point C; in particular, would the top executives of these foreign companies require to be security vetted?

Energy minister Michael Fallon told him:

“In the UK, all employees in the civil nuclear industry and contractors must be vetted to a level of clearance commensurate with their access to nuclear material and/or sensitive nuclear information or technology in accordance with the Nuclear Industries Security Regulations 2003. Agreed standards and processes are applied in accordance with the UK's national security vetting policies and all vetting costs are recoverable from industry.”

(Hansard, 28 October 2013: Column 368W)

Nuclear Security under-regulation

So how is our official nuclear security regulator, the Office for Nuclear Regulation, getting on in making more robust the security of our nuclear facilities and nuclear materials, such as the 111,000 kilogrammes of plutonium, stored at Sellafield?

The most striking thing to note is that on 30 August this year, the official nuclear security and safety regulator, the Office for Nuclear Regulation explained in an introduction to its new *Nuclear Research Needs 2013-14* report:

“In 2012, ONR undertook to publish an integrated statement of Nuclear Research Needs (NRN) to identify the requirements for nuclear related research across the whole of ONR's regulatory remit. This was partly in response to a review and report on nuclear research and development capabilities produced in 2011 by the House of Lords Select Committee on Science and Technology, which questioned the limited scope of the NRI.

ONR committed to reviewing the NRN and expanding it to cover our entire regulatory remit: this is the first integrated NRN published to fulfil that commitment.”

It goes on to say:

“This NRN describes the current ONR view on the need for research related to issues that might undermine safe and/or secure operation of UK nuclear facilities if not properly managed.”

And further states:

“This document covers the nuclear research needs of ONR’s six operational programmes, namely:

- Civil Nuclear Security - regulates security at civil licensed nuclear sites, and all other locations where sensitive nuclear information is held; and the movement by road and rail within the UK, and globally within UK flagged vessels of nuclear and other radioactive material.”
- Radioactive Materials Transport - regulates safety during the transport of radioactive material by road and rail in Great Britain, and advises on its transport by air and sea within the UK territorial waters. v
- Civil Nuclear Reactor Programme/New Build - regulates the safety of operating and defueling nuclear power stations and licensing and permissioning of proposed new build nuclear power stations. v
- Sellafield Programme - regulates the safety of Sellafield and Windscale nuclear licensed sites in Cumbria.
- Decommissioning, Fuel and Waste Programme - regulates safety on a variety of nuclear fuel sites, including fuel cycle, nuclear research, waste management and decommissioning sites.
- Defence Programme - regulates safety at defence sector nuclear sites, including submarine and atomic weapons facilities, working closely with the Defence Nuclear Safety Regulator (DNSR).

[<http://www.hse.gov.uk/nuclear/research/2013/documents/nrn-2013-part-2.pdf>.]

All of which is encouraging, until you read on page 2 of the full 165 page document:

“... not all of the above technical areas have detailed research project requirements, therefore: Nuclear Fuel Research, *Civil Nuclear Security* and the Environment Agencies *have not included any research projects* within this detailed research needs document.”
(My emphasis)

When I read this, I had a double take. It could not really assert that, could it? But actually, it does.

With a prospective new -build power reactor programme, a possible export of plutonium in MOX fuel, a possible plutonium burner-reactor and a certain decommissioning programme involving huge quantities of radioactively contaminated materials being transported nationwide for many years by road, rail - and probably ships too - from protected licensed nuclear sites, in a climate of unresolved security concerns and

terrorists threats, it is incomprehensible that the UK's national nuclear security regulator would have no need to do any research on security issues.

If nothing else, the complexities of how vetting of the huge number of people who will be crossing the thresholds of licensed nuclear installations during transport missions, and others who have access to the huge increase in technical documentation, will be carried out. How will the vetters be trained, and by whom?

Nuclear's insecurity has been the "elephant in the room" for the nuclear industry from the start of commercialisation of the technology in the early 1950s. Today ministers routinely drop into speeches that safety and security are their number one priority when they sanction any nuclear go-ahead decision.

They will almost certainly genuflect towards Fukushima when addressing safety, but its security failure equivalent, The terrorist attacks on New York City and Washington DC in on 11 September 2001, is never similarly name checked.

Post 9/11 2001, at a minimum, it is difficult to argue that there is any country with major nuclear facilities where an attack by a small group of well-armed, well-trained terrorists, using at least a lorry/truck bomb and having the assistance of one insider, is not a plausible threat against which security systems should be prepared to defend. National standards and regulations should include regular, realistic, independent testing of the performance of security systems in defeating intelligent, well-trained insider and outsider efforts to overcome them.

I will close with a barely believable tale of the Atomic Bazaar

Among the reasons the Geneva talks on Iran's nuclear programme had to be reconvened last month was that France objected to the deal being closed off earlier.

The French objections were over Tehran's contested plutonium production plant at Arak, but whatever doubts they might have over Arak, they seem to be sanguine about Iran's involvement in uranium enrichment.

Indeed, they are in industrial partnership with the Iranians in this technology and have been for four decades since the agreement was initiated by the Shah in 1975.

Oddly, this deal never gets reported in the context of the Iran nuclear negotiations. Is there any good reason why not?

The origins of the deal illustrate the dangers of international nuclear collaboration. A joint-stock uranium enrichment Eurodif (European gaseous diffusion uranium enrichment) consortium was formed in 1973, with France, Belgium, Spain and Sweden the original shareholders. In 1975 Sweden's 10 per cent share in Eurodif was sold to Iran.

The French government subsidiary company Cogema (now Areva) and the then Iranian government established the spin-out Sofidif (Société Franco-Iranienne pour l'enrichissement de l'uranium par diffusion gazeuse) with 60 per cent and 40 per cent shares, respectively.

In turn, Sofidif acquired a 25 per cent share in Eurodif, which gave Iran its 10 per cent share of Eurodif.

The former Shah of Iran, Mohammad Reza Pahlavi, lent \$1 billion (and another \$180 million in 1977) for the construction of the Eurodif factory to have the right to buy 10 per cent of the site's production.

Although Iran's active involvement in Eurodif was halted following the 1979 Iranian revolution, Iran has retained its active involvement in Sofidif, headquartered in Rue La Fayette in Paris, to the present day.

Its current annual report is audited by KPMG. Dr Ali Daei of the Atomic Energy Organisation of Iran was appointed Iran's new permanent representative to Sofidif as recently as September 25 last year. Iran's stake in Eurodif was exposed in a report written by Paris-based German nuclear expert Mycle Schneider for the Greens and the European Free Alliance in the European Parliament.

Four years ago, on 1st October 2009, an earlier preliminary atomic agreement with Iran

was reached involving the UN nuclear watchdog body, the International Atomic Energy Agency (IAEA), under which it was agreed to transfer three quarters of Iran's low-enriched uranium abroad.

In return, the West agreed to supply Iran with fuel for the Tehran Research Reactor, which came online in 1967 and which produces medical isotopes for tests for around one million patients in Iran. But when Argentina, which had previously supplied the fuel for the Tehran Research Reactor, indicated it was unwilling to do so again, it prompted Iran to ask the IAEA for help.

It turned out that France was to play a critical role in resolving the impasse over enriched uranium fuel for the reactor.

Although in principle Iran's Natanz uranium enrichment plant - officially declared to the IAEA in February 2003 - could have enriched the low-enriched uranium to the level needed for the reactor to operate, the main "uranium yellowcake" feedstock for enrichment, the uranium conversion facility in Esfahan, had been contaminated.

France had both the know-how and willingness to help clean up the contaminated fuel. Fast forward to November 2013. France, as a nuclear technology supplier to Iran, ganging up on its customer client with the other self-appointed five permanent members of the UN security council plus Germany, is guilty of breathtaking hypocrisy. It would be funny if it wasn't so serious.

The French links with Iran's nuclear project

Morning Star 29 November 2013

<http://www.morningstaronline.co.uk/a-8340-The-French-links-with-Irans-nuclear-project>

Curious as to why the extraordinary continued role of Sofidif had barely made a mark in the political debate over Iran's atomic ambitions, Paul posed a question earlier this week to the Foreign Office, asking what discussions he had had with the Iranian and French delegation during the most recent P5+1 meeting with Iran in Geneva about the joint Iranian-French involvement in the uranium enrichment consortium Sofidif.

New junior foreign minister, Hugh Robertson, responded:

“Neither Sofidif nor Eurodif were discussed with either the French or Iranian delegations at the recent nuclear negotiations in Geneva. Discussions focussed solely on securing a first stage agreement between the E3+3 and Iran which addresses our most important concerns about the Iranian nuclear programme.)

(Hansard, 2 December 2013: Column 569W)

How convenient!

Atomic salesman Cameron opens Pandora’s Box

In classical Greek mythology, Pandora was the first woman on Earth. Zeus ordered Hephaestus, the god of craftsmanship, to create her, so he did—using water and earth. When Prometheus - mythologically a Titan and trickster- stole fire from heaven, Zeus took vengeance by presenting Pandora to Epimetheus, Prometheus' brother. With her, Pandora was given a beautiful jar – with instructions not to open it under any circumstance. Impelled by her curiosity (given to her by the gods), Pandora opened it, and all evil contained therein escaped and spread over the earth. She hastened to close the container, but the whole contents had escaped....

It is clear from David Cameron’s trade promotion mission to China earlier this week, that he is hawking British nuclear expertise in exchange for inward investment from China’s State Investment bank.

The BBC reported on Wednesday:

“David Cameron has promised to create a "partnership for growth and reform" as he visits China on a trade mission with more than 100 UK business leaders. The PM, who met Chinese Premier Li Keqiang on Monday, also pledged to put his "full political weight" behind a proposed EU-China trade agreement

On Monday, Premier Li Keqiang said the pair had agreed in their talks to "push for breakthroughs.. on nuclear power..."

This could indeed open Pandora’s Box.