

NUCLEAR MONITOR

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U.S. UTILITY GETS GREEN LIGHT FOR WEAPONS WORK

The U.S. Nuclear Regulatory Commission (NRC) has approved production of tritium for nuclear weapons at the Watts Bar-1 and Sequoyah-1 and 2 reactors operated by Tennessee Valley Authority (TVA). This news comes as environmental assessments are underway for factories to convert old weapons plutonium into MOX fuel, and to produce new plutonium pits for nuclear weapons.

(574.5440) WISE Amsterdam – TVA signed a contract with the Department of Energy (DOE) to produce the tritium on 8 December 1999 (see *WISE News Communiqué* 523.5127, “U.S.: TVA signs contract to produce tritium”).

Instead of using military facilities to produce tritium, the idea is to replace “burnable absorber” rods in the core of reactors at nuclear power stations with special lithium-containing rods. These rods absorb neutrons, just like burnable absorber rods, but produce tritium as they do so. After 18 months in the reactor, the rods are removed during refueling and shipped to the DOE’s Savannah River Site where the tritium is extracted.

The process has already been tested with 32 rods at Watts Bar, which were removed in 1999 and tested by the DOE. The NRC’s license amendments allow three reactors (Watts Bar-1 and Sequoyah-1 and 2) each to load up to 2,300 tritium-producing rods. Production is scheduled to begin at Sequoyah-2 and Watts Bar-1 in the fall of 2003, and at Sequoyah-1 in fall 2004.

Tritium is a radioactive gas with a half-life of 12.3 years which is used to boost the power of nuclear weapons. Its production in civil reactors breaks down one of the remaining barriers between commercial and military uses of nuclear energy – a dangerous

development at any time, and particularly so now the world is on the brink of war in the Middle East.

Local residents could also be in danger. The TVA’s own study shows that the calculated tritium dose to the most highly-exposed members of the public would be about 63% of the NRC annual exposure guideline for airborne effluents. This does not leave much room for maneuver – particularly if there are accidents.

Plutonium merry-go-round

The NRC is also currently evaluating the environmental effects of a mixed-oxide (MOX) fuel plant to be built at the Savannah River Site, as part of the U.S.-Russian plan to each dispose of 34 metric tons of ex-weapons plutonium.

Once converted into MOX, the ex-weapons plutonium is intended for use in Duke Energy’s Catawba and McGuire nuclear power stations (see *WISE/NIRS Nuclear Monitor* 570.5416, “Plutonium hits the road despite ‘dirty bomb’ scare”).

MOX fuel, a mixture of mostly uranium oxide with some plutonium oxide, makes reactors harder to control and causes greater radiation releases in the event of an accident. Irradiated MOX is also more dangerous than conventional irradiated fuel.

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Immobilizing the ex-weapons plutonium can reduce these dangers, but the DOE rejected this option in January, leaving just the MOX option (see *WISE/NIRS Nuclear Monitor* 562, "In Brief).

Furthermore, while some weapons plutonium is intended for conversion to MOX, more plutonium is to be turned into new plutonium pits, which form the core of nuclear weapons. The DOE says it will prepare an environmental impact statement on a proposed US\$4.1 billion factory to be built at one of five possible sites.

The front-runner amongst these sites is the Savannah River Site, the same complex proposed for the MOX plant. Indeed, one step of the process – plutonium purification, sometimes known as "polishing" – is common to both MOX fuel and plutonium pit

production. This has given rise to the possibility that the distinction could be blurred between plutonium earmarked for "new" pits and "old" plutonium earmarked for MOX. The NRC have confirmed this possibility in response to questions from Mary Olson (NIRS Southeast) at public meetings.

NIRS NIX MOX Campaign believes that the tritium and MOX production plans "violate every non-proliferation principle advanced by the U.S. government for decades." A recent editorial in the *Wall Street Journal* described the commercial use of plutonium in MOX as "a gift to the world's terrorists and rogue states".

Sources: NRC News, 24 September 2002; KnoxNews, 2 October 2002; NRC Docket No. 50-390, 23 August 2002; NIRS NIX MOX campaign (www.nirs.org/mox/moxtrit.htm);

TEST ASSEMBLIES

The Belgian government has once more postponed a decision on the fabrication of lead test assemblies (LTAs) using ex-weapons plutonium in the Belgian MOX plant in Dessel. Prime Minister Guy Verhofstadt has come under pressure from the green parties (Agalev and Ecolo) in the government coalition over the issue. A group of over 100 NGOs including NIRS and several WISE offices sent a letter to Verhofstadt in August, urging him to reject the plan.

E-mail from For Mother Earth, 3 October 2002; www.nti.org

NIRS Southeast; *Wall Street Journal*, 2 October 2002

Contact: NIRS Southeast (note new telephone number: +1 828 675 1792)

JAPAN: NUCLEAR SCANDAL WIDENS AND DEEPENS

The scandal affecting the Japanese nuclear industry has widened to include utilities Chubu Electric, Tokohu Electric and Japan Atomic Power Co., which have also failed to report faults in their reactors. Meanwhile, for Tepco, the utility originally affected, the scandal has grown deeper, with allegations that a 1992 test of the leak rate of a reactor containment vessel was faked.

(574.5441) WISE Amsterdam – After it was revealed that Tepco had falsified inspection reports at three of its nuclear power plants for years (see *NIRS/WISE Nuclear Monitor* 573.5436, "Japan: whistleblowing turns into tornado"), other utilities began to investigate if they too had failed to mention defects in reports.

Soon, two utilities, Chubu Electric and Tokohu Electric, reported that they too had left out details of faults in their inspection records.

Chubu

Chubu is Japan's third largest power company, and halted all its reactors after admitting it had failed to report signs of cracking in water pipes of reactors 1 and 3 at its Hamaoka plant to the authorities. The largest of these, in Hamaoka-3, was 60 millimeters long and 3 millimeters deep, in a pipe around 40 millimeters thick.

The failure of Chubu to notify the authorities of the crack indications in water pipes is all the more worrying because of recent incidents involving pipes at Hamaoka. Last year, a water pipe at Hamaoka-1 exploded,

releasing radioactive steam into the containment building (see *WISE News Communique* 558.5339, "Japan: a 'grave situation' at Hamaoka BWR"). This year, sixteen workers were irradiated after a water pipe leak at Hamaoka-2 (see *WISE/NIRS Nuclear Monitor* 569.5411, "Japan: More problems at Hamaoka").

In addition, inspections at another Hamaoka reactor revealed a 45-centimeter crack in the core shroud – a steel cylinder surrounding the reactor core of a boiling water reactor (BWR). The core shroud is the same location where cracks were found in Tepco reactors and covered-up – sometimes literally, with vinyl sheets (!) – in the past.

Cracks in core shrouds could lead to a catastrophic scenario in the case of

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an earthquake (see *WISE News Communique* 483/4.4802, "Nuclear power and earthquakes"). When an earthquake shakes the reactor, it can dislodge steam bubbles that are forming on fuel rods. Their place is then taken by extra cooling water, which acts as a moderator, slowing down neutrons so that they can cause fission of additional uranium-235 atoms. This leads to a power surge, which normally can be stopped by a "scram" (automatic insertion of control rods into the reactor). However, if a core shroud is cracked, the earthquake could cause it to break and prevent the control rods inserting properly, leading potentially to a meltdown.

Citizens' groups are pushing for the closure of Hamaoka, which lies at the center of the seismic source area of the anticipated Tokai Earthquake. The recent revelations of core shroud cracking make this situation even more urgent, and will lead to pressure on Chubu not to restart any of the four Hamaoka reactors.

Tohoku

Tohoku Electric, Japan's fourth largest power company, announced on 20 September that they had failed to report cracks found in recirculation piping at Onagawa 1 back in 1988. Not only that, but during the reactor's refueling and maintenance outage beginning 8 September, twelve cracks were found in the core shroud, the longest of which is 14 centimeters long.

Onagawa-1 suffered a power surge in a 1993 earthquake (see *WISE News Communique* 483/4.4802, "Nuclear power and earthquakes"). In 1993, the scram was successful, with the control rods inserting when the resulting power surge reached 118%. However, if a similar event occurred with cracking present in the core shroud, the results could have been disastrous.

JAPC

Japan Atomic Power Co. (JAPC) acknowledged that cracks in the core shroud of Tsuruga-1 had been

covered up, following inspections carried out by General Electric in 1994, 1996 and 1998. Tsuruga was the scene of an accident in 1999 where 50 tons of primary coolant leaked from reactor 2, and radiation levels inside the reactor building reached 11,500 times permitted levels (see *WISE News Communique* 515.5057, "Tsuruga-2: Large leak of primary coolant water").

Tepco scandal deepens

While cover-up scandals have broadened to include other Japanese utilities, the allegations against Tepco, the original utility affected, have become more and more serious. They affect all 10 BWRs at Fukushima, plus some of the 7 at Kashiwazaki-Kariwa.

Cracks were covered up not just in core shrouds – the original focus of the investigation – but also in a whole variety of other reactor components. These include steam dryers (which dry the steam before it leaves the reactor), access hole covers, and components associated with the jet pumps, which circulate cooling water inside the reactor. In these cases, the inspections had been carried out by General Electric International Inc.

Later, they revealed that there were also flaws in recirculation pumps – primary cooling water pumps located outside the reactor – and their piping. In these cases, the inspections whose results had been covered up were carried out not by General Electric, but by Hitachi and Toshiba.

More serious than this – indeed, potentially criminal in some cases – were the secret repairs carried out of various components, such as the core shrouds. Nevertheless, Tepco might avoid criminal prosecution since they have since replaced the shrouds with new ones, and the Ministry of Economy, Trade and Industry (METI) did not recommend prosecution.

Another clandestine repair involved a core spray sparger (spray head) at

Fukushima I-1. This forms part of the emergency core cooling system, and its correct functioning is important for the safe shutdown of the reactor in an emergency. Here again, METI has recommended against criminal prosecution.

Faked pressure test

Yet in the most serious case of all, Tepco officials are alleged to have faked a pressure test designed to test the integrity of the containment building. The test involves pumping nitrogen gas into the building to increase the pressure to about three times atmospheric pressure, then taking pressure readings to measure the leak rate.

Regulations state that the leak rate must be less than 0.45% per day. However, at Fukushima I-1 in 1992, the company conducted its own tests before the government inspectors turned up, and discovered that the building might not pass the test. One source quoted in the *Daily Yomiuri* said that leak rates fluctuated from 0.3% to 2.5% per day.

Documents found at Hitachi by Tepco's own investigative team describe a method to fake the test by secretly pumping in extra air from the main steam isolation valve. At the time, Hitachi had a contract to check Tepco equipment.

It is alleged that Tepco officials followed this procedure when the government inspectors were checking the leak rate.

High containment leak rates have been an issue in France, where the containment vessels of 1300MW and 1450MW PWRs lack the steel liners usually found in other countries (see *WISE News Communique* 487.4832, "Generic problems at EDF NPP?").

IAEA criticism

Things have got so serious in Japan that IAEA officials have expressed concerns. Even the IAEA's Director-General, Mohamed ElBaradei, has been quoted as suggesting that on-going probes by the Japanese

authorities might not be enough to provide reassurance.

The IAEA's criticism of Japan contrasts notably with its positive-sounding review of Bulgaria's Kozloduy 3 and 4 in July – reactors previously described by a former U.S. Nuclear Regulatory Commission official as amongst the most dangerous in the world (see *NIRS Nuclear Monitor*, June 1999, "A Visit to the Most Dangerous Reactors in the World").

However, Japan's relationship with the IAEA has been a bit frosty in recent years. The last time the IAEA sent an Operational Safety and Review Team (OSART) to Japan was in 1995. According to *Nucleonics Week*, visiting experts who took part in the OSART missions said that utility executives at Tepco and Chubu strongly resisted the recommendations voiced by IAEA experts.

According to one IAEA official, the message the IAEA received from Japanese utilities was: "We want your technical information and we want to hear about good practices, but Japan is different and so we don't want you to tell us to make changes in organization."

Even the Tokai-Mura criticality accident in 1999, which left two

workers dead and a number of people injured, did not stop the Japanese nuclear industry's attempts to present an image of perfection to the world.

Nuclear experts from other countries have sometimes expressed their doubts about the claims of the Japanese nuclear industry. Representatives from other countries were surprised when Japan told parties to the International Nuclear Safety Convention last April that in the 14 plant safety reviews done in Japan during the last 3 years, no significant corrective actions were recommended.

The image of the Japanese nuclear industry now lies in tatters amid all the stories of cover-up and falsification. Yet in a sense, the real surprise is perhaps that the Japanese nuclear industry has for so long been seen as an exception to the reputation for cover-up that is common to nuclear industries in many other countries.

Indeed, it is ironic that the story has broken just as MOX fuel falsified by BNFL has returned to Britain to an uncertain future. Now first Japan's MOX program, then the future of Japan's nuclear industry itself have been thrown into question by its own, home-grown nuclear falsification scandal.

MOX NIXED FOR NOW

The Japanese cover-up scandal has nixed Japan's MOX program, at least for the time being (see box "Cracks and MOX" in *WISE/NIRS Nuclear Monitor* 572.5431, "Japan: Tokaimura Hibakusha group files a lawsuit").

On 26 September 2002, the Fukushima governor formally rescinded prior approval for the Pluthermal (MOX) program in Fukushima. He stated, "On this occasion, we should rethink [Japan's] nuclear power policy itself, taking it back to the starting point."

The Asahi news web site reported on 26 September that it is now certain that there will be a push for reconsideration of the nuclear fuel cycle in Japan.

E-mail from Aileen Mioko Smith, Green Action

Sources: Dow Jones Tokyo, 20 September 2002; *Mainichi Daily*, 9 September 2002; *Nucleonics Week*, 26 September 2002; *Daily Yomiuri*, 26 September 2002; *Asahi Shimbun*, 30 September 2002; AFP, 17 September 2002

Contact: WISE Japan

EURATOM AND THE EU "NUCLEAR PACKAGE"

While Friends of the Earth Europe held a conference in Brussels on 12 September on the future of Euratom, the pro-nuclear European Commissioner Loyola de Palacio held a press briefing for selected journalists on the forthcoming launch of new legislation known as the "nuclear package".

(574.5442) WISE Amsterdam – Within the European Union, Euratom is an oddity – a virtually unreformed treaty which dates back to the 1950's when nuclear power was promoted as the world's future energy source. It was intended to "contribute to the raising of the standard of living" by "creating the conditions necessary for the speedy establishment and growth of nuclear

industries", as Article 1 of the Euratom Treaty puts it.

U.S. origins

Its origins can be traced to U.S. President Eisenhower's "Atoms for Peace" speech of December 1953. The U.S. wanted to secure a market for U.S. reactors and U.S. enriched uranium while preventing proliferation of nuclear weapons. By

giving regional organizations such as Euratom better deals than individual countries, the U.S. hoped to cultivate a "United States of Europe" which could stand up to the Warsaw Pact.

Democracy, however, was not and is not a feature of the Euratom Treaty. When the treaty was signed in 1957, "control by democratically elected Parliaments was not exactly a

significant feature of the nuclear sector”, as one European Parliament working paper put it.

Largely unreformed

When the other treaties that form the basis of the European Union were reformed to give more power to the elected European Parliament and less to the unelected European Commission, and prevent one-sided subsidies of particular industries, Euratom was left largely unchanged.

The nuclear lobby clearly wants it to remain so, since they like the one-sided subsidies that their industry receives and don't seem to mind the lack of democracy in Euratom.

Also, the Euratom treaty is of unlimited duration, unlike the other European treaty governing specific industries (the European Coal and Steel Community) which expires this year.

In short, the Euratom treaty is an outdated treaty for an outdated industry. By saying that is OK as it stands, the nuclear lobby implicitly admits their loss of influence, since they have more or less given up all hope that Euratom can be reformed to their benefit.

While speakers at the conference generally agreed that it would be difficult to reform Euratom, it seems there may a small window of opportunity.

The Convention on the Future of Europe is examining the European structures in connection with the enlargement of the EU. Enlargement means that countries in Central and Eastern Europe, some of which operate dangerous Soviet-designed reactors, will become part of the EU. Yet the Euratom Treaty as it stands has no article governing nuclear safety – only an article governing protection against ionizing radiation. This by itself should be reason enough to reform Euratom.

However, rather than using the Convention on the Future of Europe

as an opportunity for Euratom reform, it seems the European Commission are trying to give additional powers to Euratom without reforming it or addressing its “democratic deficit”.

Nuclear package

While staff from both NIRS and WISE attended the conference, European Commissioner Loyola de Palacio held a press briefing for selected journalists on the forthcoming launch of new legislation known as the “nuclear package” (see box).

The press briefing for selected journalists seems to be a “news management” trick: by taking this unusual step, the European Commission is hoping to reduce interest in the issue if the proposals are finally adopted by the Commission later this year.

Patricia Lorenz of Friends of the Earth Europe commented: “Before any new power can be given to the dinosaur Euratom there must be reform, at the very least the removal of its promotional function and the introduction of joint decision making with the European Parliament”.

Ironically, the inadequacy of the unreformed Euratom Treaty as it stands could cause legal problems for some of the proposed new directives.

Articles 30 and 31 of the Euratom treaty govern maximum permissible radiation doses, contamination levels and the principles governing the health surveillance of workers. Using these to determine nuclear safety standards is a bit shaky, since nuclear safety includes far more than just radiation protection.

Worse still, using Articles 30 and 31 to determine “financial mechanisms for securing long term disposal of radioactive waste and the decommissioning of nuclear facilities” involves a very dubious legal argument. The European Commission says that if decommissioning funds are inadequate, the standard of

NUCLEAR PACKAGE

The proposed EU nuclear package consists of four components:

- A “framework directive” to establish nuclear safety standards in the EU
- A directive on the management and disposal of radioactive waste
- A directive governing the financial mechanisms for decommissioning and long term disposal of radioactive waste
- A mandate to negotiate increases in the levels of imported nuclear fuel in the EU.

decommissioning will be lower. Yet, even if there is plenty of money, nuclear contractors may still try to cut corners on safety or on health checks for workers, as has happened in the case of the “nuclear nomads” (see *WISE News Communiqué* 542.5239, “Inadequate health checks for French ‘nuclear nomads’”).

The European Commission has said that they expect a final version of the “nuclear package” will be published beginning/mid November. This could be delayed, especially because of the legal problems mentioned above.

Euratom loans

The other slight possibility for Euratom reform lies in stopping the extension of the Euratom loan ceiling. Although originally intended for building new nuclear power stations in EU member countries, Euratom loans are now usually proposed for Eastern European projects. These include the notorious K2/R4 in Ukraine, which is still listed as a Euratom loan project even after Ukraine withdrew its loan application (see *WISE News Communiqué* 559.5345, “Ukraine withdraws EBRD loan application for K2/R4”).

After the K2/R4 loan, most of the Euratom loan facility will be used up, so the European Commission is

proposing a 2-billion-euro (US\$1.95 billion) extension to this facility. This proposal needs to be approved by consensus of the finance ministers of all EU countries.

However, the only Euratom loan under active consideration is the loan for Cernavoda-2 in Romania (see *WISE/NIRS Nuclear Monitor* 571.5424, "Romania: new financiers, new problems for Cernavoda-2").

Ministers from Denmark and Ireland have stated that Euratom loans should not be used to expand the

nuclear industry, as is the case with Cernavoda-2 where (unlike K2/R4) there is no requirement to close a nuclear reactor of similar size.

The victory of the Red-Green coalition in the recent German elections could be the final blow for Euratom loan extension.

By blocking the proposed Euratom loan extension, the finance ministers of EU member states would give a signal to the European Commission that Euratom is outdated and reform is needed.

Sources: WISE Amsterdam; reports from conference on Euratom, 12 September 2002; *The European Parliament and the Euratom Treaty: past, present and future*, European Parliament working paper ENER 114, May 2002; *The Launch of the European Commission's Nuclear Package*, Antony Froggatt, 17 September 2002; Friends of the Earth Europe press release, 13 September 2002

Contact: WISE Amsterdam or Diane D'Arrigo at NIRS.

NETHERLANDS: SERIOUS FAILURE IN PETTEN HFR

A Dutch TV documentary on the High Flux Reactor (HFR) in Petten, owned by the European Commission's Joint Research Center, revealed a serious failure within the cooling system.

(574.5443) Laka Foundation - At the beginning of this year the 45MW research reactor was closed temporarily for safety inspections, because of little cracks in the reactor vessel (see *WISE/NIRS Nuclear Monitor* 563.5377, "Petten HFR to be closed temporarily"). This safety problem was highlighted by whistleblower Paul Schaap, an operator at the HFR.

As a consequence of this, researchers from the TV program KRO Reporter examined the safety measurements and revealed an undisclosed file, the so-called "Veldman scenario". Paul Schaap didn't name this scenario earlier this year and doesn't want to talk about it, because of his ongoing lawsuit against his dismissal.

The "Veldman scenario" is a discovery made in 1985 by operator Theo Veldman who was working at the HFR from 1964 until 1995. He revealed a serious failure inside the cooling system: in the case of a crack at the lowest spot the water will discharge very quickly, causing a meltdown.

A retired co-worker remembers that the response of the board was laconic and dismissive. Until 26 November

1987 all co-workers of the HFR kept silent about the Veldman scenario.

This changed when an explosion took place during the night of 26 / 27 November: a capsule exploded very close to the reactor vessel. Former co-worker F. Besanger, currently living in Australia, says he was indignant and angry that the reactor was already restarted just after 11 minutes: "a highly irresponsible decision. Everything had to be inspected first." While everybody was shocked about the explosion, the board members remained laconic.

After four days the European Commission, the owner of the HFR, was informed and a majority of the Commission voted to keep the reactor open. Independent nuclear physicist Cees Andriess called this highly irresponsible. According to him the costs of improving the system are relatively low.

Afterwards it appeared that the explosion was not mentioned to the Dutch Nuclear Physics Authority (KFD), because of fears that the license could be withdrawn. The KFD confirmed in writing that they weren't informed. According to a former operator, the Veldman

scenario could turn into reality if the explosion had taken place within the core.

In 1992 a labor dispute arose, because of financial cutbacks. Critical articles on safety appeared in the newspapers. Operator H. Slieker went into a discussion with the then director Mr Van den Kroonenberg. He was shocked about his story of the Veldman scenario and decided to investigate the findings of Veldman.

When the internal report appeared on 30 November 1992 it concluded that if the Veldman scenario occurs, the core would be uncovered in only 90 seconds.

Right up until today, the design fault has not been repaired, because of the board's opinion that the chance of the Veldman scenario occurring is very small. Paul Schaap regrets that he and his colleague operators didn't stand firm to demand safety inspections after the 1992 internal report.

By fall 1994, things were getting worse after some light earthquakes in the area of Petten, which were apparently caused by natural gas extraction in the area. According to

Slieker the cooling system was thrown a few centimeters off its balance. "Already in '86 the KFD reported a subsidence of the ventilation building. This was later followed by a new subsidence of the foundations of the reactor building."

Andriess emphasizes that the possible consequences of the Veldman scenario are much worse than was calculated by Veldman. He says he is quite sure that such a scenario would end in a nuclear explosion, a disaster with the magnitude of the Hiroshima nuclear bomb.

The board of Petten HFR, the Nuclear Research Group (NRG) regrets the negative news coverage. It emphasizes that the safety of the HFR is evaluated constantly and is OK: "This is confirmed by the authorities. The conclusions of

BORSSELE

A Dutch Court on Administrative Law ruled on 25 September that the Borssele nuclear reactor does not have to close as of 31 December 2003. The Dutch government had started the court case as it claimed that it had reached agreement in 1994 with owner EPZ to close the plant by that date (see WISE News Communiqué 551.5190: "Netherlands: court case on closure date Borssele NPP"). The judge recognized that a deal was made but that it had not been laid down in a legal contract. So, Borssele can stay open after 2003. In reaction to the judgement, anti-nuclear activists in Groningen occupied for a short time Essent's office in Groningen (Essent is presently owner of Borssele). WISE has intensified its campaign against Essent and has sought close cooperation with green electricity supplier Echte Energie. Both will organize a "national switch-over day" on 22 November. On that day, customers of Essent will change to supplier Echte Energie in protest against Essent's nuclear activities.

www.indymedia.nl , 25 September 2002; WISE Nieuwsbrief Atoomstroom, September 2002

recent inspections by the KFD and the IAEA show no safety risks."

Sources: KRO Reporter, 26 September; NRG press release, 25 September 2002

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AUSTRALIA: DIRTY DEEDS DONE DIRT CHEAP AT MARALINGA

"What was done at Maralinga was a cheap and nasty solution that wouldn't be adopted on whitefellas land". So said nuclear engineer and Maralinga whistle-blower Alan Parkinson on the Australian Broadcasting Corporation's Radio National on 5 August.

(574.5444) Jim Green – Parkinson was intimately involved in the latest "clean-up" of the Maralinga nuclear weapons test site in South Australia, contaminated by a series of British nuclear tests from 1956-63.

He was the federal government's senior representative on the project from 1993 until January 1998, at which time he was removed from the project after criticising mismanagement and cost cutting. For the next two years, Parkinson advised the traditional owners, the Maralinga Tjarutja, and since then he has adopted the role of a public whistle-blower.

The media has recently taken an interest in the problematic "clean-up" of Maralinga, and a resolution was passed in the federal Senate on 21 August which "urges the Government to exhume the debris at

Maralinga, sort it and use a safer, more long-lasting method of storing this material."

The first phase of the "clean-up" involved collecting a large volume of contaminated soil and burying it. During this phase of the project, dust suppression was inadequate, as is clearly evident in photographs and in the government's video record.

Malcolm Farrow, a federal government bureaucrat, told a Senate hearing on 3 May 2000, that "some grams" of contaminated dust blew away. Billions of grams in fact – many thousands of tonnes.

On several occasions, work had to be suspended because thick dust clouds inhibited visibility. On at least one occasion, the dust was so thick that the forward-area facilities – over a kilometre from the work site – were evacuated by health physicists.

Vitrification of contaminated debris

In the later stages of the soil collection and burial phase of the project, dust suppression was markedly improved. But far bigger problems were looming. The second phase of the "clean-up" involved plutonium-contaminated debris dumped in and around pits during previous "clean-ups".

Of particular concern was debris resulting from 15 Vixen B trials carried out from 1961-63 at a site at Maralinga called Taranaki. In these "minor" trials, bombs were detonated in a manner which would not allow them to explode as atomic bombs. Instead, the tests simply melted the plutonium and uranium, shooting it into the air and allowing it to spread far and wide.

Ironically, these "minor" trials created greater local contamination

than the seven atomic blasts in 1956-57, whose yield ranged from 1-27 kilotons.

One of the legacies of the Vixen B trials was many tonnes of contaminated debris such as steel joists, cables, lead bricks, and concrete firing pads.

The government decided to treat the debris using a process called in-situ vitrification (ISV), a thermal treatment process which uses electricity to turn the soil and pit contents into a hard glass-like rock which contains and immobilises the plutonium for many thousands of years. All of the 21 debris pits at Taranaki were to be treated by ISV, and a contract for this work was signed with the U.S.-based company Geosafe. ISV began in May 1998.

Cost cutting

Before ISV began, it was discovered that a greater volume of debris was contained in and around the pits than was initially estimated and consequently ISV would cost more. In September 1998, the federal government announced its decision to continue with ISV for some of the Taranaki pits, but to exhume and sort the contents of other pits and to treat some of the contents by ISV and to simply bury the rest in another trench.

According to Parkinson: "Amazingly, the sorting was done on the basis of size, not by the level of radioactivity; the larger pieces were to be treated by vitrification and the smaller items and soil buried. The most radioactive thing I saw at Maralinga sent the monitors off scale from a couple of metres distance. It was a sphere about a millimetre in diameter."

In 1999, ISV was terminated altogether in favour of shallow burial of contaminated debris. Claims that this decision was motivated by cost-cutting continue to provoke fierce responses. During a 3 May 2000, Senate hearing, former science minister Nick Minchin refuted the "scurrilous suggestion which I see

floating around in the media that suggests that this decision was made on cost grounds."

Current science minister Peter McGauran said in a 19 August letter in *the Australian Financial Review* that "claims that the Government cut corners at Maralinga and abandoned the in situ vitrification process because of cost concerns are completely wrong." But cost-cutting was clearly and demonstrably the motivation for the decision to terminate ISV – a point made in letters published in the AFR the following day (along with a cartoon depicting the science minister with an extended Pinocchio nose from telling lies about Maralinga). Undaunted, McGauran asserted in an AFR letter on August 22 that: "It is outrageous to suggest that the in-situ vitrification was dropped due to cost considerations ..."

...debris from the pits that had not been treated was placed in a shallow trench and covered with just a few meters of soil.

That the decision to terminate ISV was made largely or solely on cost grounds is repeatedly spelt out in the Maralinga project documentation. To give a few examples:

* an October 1998 paper by the government's advisory committee, the Maralinga Rehabilitation Technical Advisory Committee (MARTAC), said: "The recent consideration of alternative treatments for ISV for these outer pits has arisen as a result of the revised estimate for ISV being considerably above the project budget."

* a 17 July 1998 paper written by the chair of MARTAC gives the following criteria for considering options for the Taranaki pits: time savings; cost savings; nature of waste form; potential for exposure of waste; and

efficiency of operation. Cost savings rated highly, whereas worker safety and the long-term risks posed by the radioactivity do not rate a mention.

* at a 13 April 1999 meeting, Garth Chamberlain from GHD, the construction company which was appointed as project manager (despite having little knowledge about ISV and no experience with the technology), said it was a much easier, quicker and cheaper option to exhume and bury debris rather than using ISV.

The government came up with various spurious reasons to justify terminating ISV, including alleged safety concerns. On March 21, 1999, as ISV treatment of one Taranaki pit was nearing completion, there was an explosion. According to Parkinson, writing in the February 2002 edition of the IPPNW's journal *Medicine and Global Survival*, "The Department used this incident as an excuse to cancel the ISV contract... This decision was taken long before the investigation of the incident was complete. The Department claimed that it could not be sure that the cause of the accident was not due to the process, but both the report of the investigation and the audit of that report agreed that the cause was something in the pit, not the process."

The government falsely claimed that Geosafe was not prepared to continue with ISV after the explosion. The government falsely claimed that vitrification was abandoned because the Taranaki pits were not as highly contaminated with plutonium as originally expected; all credible estimates were between 1-5 kilograms of plutonium. The government falsely claimed that the Maralinga Tjarutja agreed with the government's decision to terminate ISV.

Shallow burial

Once vitrification had been abandoned, debris from the pits that had not been treated was placed in a shallow trench and covered with just

a few meters of soil. Worse still, the trench was unlined and the geology totally unsuitable - limestone and dolomite with many cracks and fissures.

ISV had been described as "world's best practice", but since 1999 history has been rewritten and the government now considers shallow burial of plutonium-contaminated debris to be world's best practice. But far from being world's best practice, shallow burial of long-lived radioactive waste is a clear breach of the government's own guidelines, which state that long-lived waste should be disposed of in a deep geological facility. Nor would shallow burial of plutonium-contaminated waste be acceptable in countries such as the UK or the USA.

Another ploy by the government has been to pretend that the debris has

been subject to deep burial even though it is under only a few meters of soil. The burial is not "deep", no matter how loose the definition. Another ploy was to invent a mongrel category of "deep" near-surface burial.

Remediation

The large volume of debris in shallow burial at Taranaki certainly needs to be remediated, either by ISV treatment or possibly by encasement in concrete. There may be scope for further remediation at Maralinga; for example, in areas where collection of contaminated soil was problematic. An inquiry needs to be instigated to determine an appropriate course of action.

However, the federal government persists with the mantra that the "clean-up" was world's best practice. To do otherwise would necessitate

another clean-up. The back-down, and the clean-up, would jeopardize the government's next nuclear assault on South Australia - a national radioactive waste dump. Further delays with the dump project could in turn jeopardize one of the government's pet projects - a new nuclear 'research' reactor in the southern Sydney suburb of Lucas Heights (see *WISE/NIRS Nuclear Monitor* 571.5427, "Sydney's reactor rumbles").

[More information on Maralinga, including a collection of articles by Alan Parkinson, is at the web site www.geocities.com/jimgreen3.]

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URANIUM MINING VICTORY AGAINST COGEMA

A Canadian church group has won a court case against a uranium tailings dump, forcing work to stop at all uranium mines in northern Saskatchewan connected to the dump. This is another victory against the French nuclear multinational Cogema, which is the subject of criticism of a new report by the Safe Energy Communication Council.

(574.5445) WISE Amsterdam - The Inter-Church Uranium Committee Educational Cooperative won its court case against the Atomic Energy Control Board (AECB - now called the Nuclear Safety Commission) and Cogema Resources.

Federal court Judge Campbell ruled that a Judicial Review was necessary for the AECB decision to grant an operating license for the JEB Uranium Tailings Facility without a full environmental assessment.

The decision means that as of 24 September 2002, the operating license for the JEB nuclear waste facility has been quashed. In effect, all uranium mine operations in northern Saskatchewan connected to the JEB pit will have to cease, as there is nowhere to put their waste.

This includes the McClean Lake and Cigar Lake mines.

Cogema Resources - part of the French nuclear multinational Cogema - is taking immediate steps to request the Federal Court of Appeal to have the decision to quash the license stayed while an appeal is heard.

Cogema under fire

Cogema's environmental and safety record is the subject of *The COGEMA File*, a new report from the Safe Energy Communication Council.

The COGEMA File is a compilation of known environmental, health and safety violations by Cogema from 16 different instances, including three that were described in an earlier joint report, *COGEMA: Above the Law?*

and released by SECC and the Institute for Energy and Environmental Research in May 2002.

COGEMA Inc. is set to process surplus weapons plutonium into mixed-oxide (MOX) fuel at the Savannah River Site in South Carolina (see "U.S. utility gets green light for weapons work" in this *WISE/NIRS Nuclear Monitor*). Yet the NRC has publicly stated that Cogema's record "good, bad or indifferent" will not affect the agency's decision-making in regard to COGEMA Inc.'s work in the U.S.

"The incidents we researched consistently demonstrated Cogema's cover-ups, corporate secrecy, disregard for international law, illegal importing and dumping,

contamination, leaks, toxic discharges, and cavalier approach to issues of human health," said Linda Gunter, SECC's communications director who researched and authored the new items in the report.

The report covers incidents at Cogema's reprocessing plant at La Hague, France, which is notorious for releasing a cocktail of toxic and radiological chemicals into the surrounding air and water. It also

includes details of leaks, spills and fines at Cogema's North American uranium mining operations.

Scott Denman, SECC's Executive Director, commented: "This is not the kind of company the American public want to invite into their backyard, particularly to handle something as lethal and toxic as weapons plutonium."

The report can be accessed on SECC's web site at www.safeenergy.org.

Hard copies can be ordered directly from SECC.

Source: WISE Uranium; SECC press release, 1 October 2002

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REFERENDUM REJECTS SWISS NUCLEAR WASTE DUMP

In a referendum in the Swiss canton of Nidwalden on 22 September with a 71% turnout, 57.5% voted against a repository of low and intermediate-level nuclear waste in nearby Wellenberg.

(574.5446) Herman Damveld - Afterwards, the government announced an end to the repository plans. This is a hard blow for the nuclear industry, which had already spent 80 million Swiss francs (US\$47 million) on research and attempts to persuade the local population to accept the dump.

Opponents of the repository plans formed the Committee for Nidwalden's Right to Decide about Nuclear Power (MNA). Peter Steiner, spokesperson of the MNA, pointed out that the population had already rejected the plans in a 1995 referendum. The MNA is willing to discuss what should now be done about the repository, but only after a decision to stop the nuclear power program has been taken. The MNA wants to look at the possibility of storing nuclear waste outside Switzerland. According to Steiner, the Alps are too risky because of the possibility of earthquakes. And because of the international nature of nuclear power (uranium also comes from outside Switzerland), Steiner thinks that it is "not absurd" to call for an international approach to the nuclear waste problem.

The decision to reject the repository came after a hard-fought campaign. There were no direct debates

between pro-dump and anti-dump campaigners; they attacked each other via the media. The dump proponents placed many large advertisements in the media, emphasizing the importance of research and making out that it was purely about scientific research. On the other hand, they also stressed the financial advantages: the canton, and especially the village of Wolfenschiessen (at the foot of the Wellenberg mountain) would receive millions of francs per year.

Dump proponents claimed that the opponents were fear-mongers who did not want a professional dialogue. "We don't live any more in the Middle Ages, when people were scared and set fire to researchers; we form our opinions on the basis of facts", announced the dump proponents in their full-page advertisements. By this, they implied that opponents of the dump were only reacting with fear, had no interest in the facts and were old-fashioned, left-wing, Reds, Greens or extremists.

In other advertisements, they portrayed themselves as modern; in one advertisement they suggested that people who wanted to know how MP3 digital music worked would also want to examine the plans for

the Wellenberg repository. The proponents even said that they were responsible for future generations, implying that the opponents were being irresponsible.

This is a common ploy: claiming possession of truth and responsibility and thereby implicitly denouncing everyone who does not agree. This tactic prompted a Nidwalden resident to say: "In the eyes of the nuclear lobby, 71% of the inhabitants of Nidwalden are stupid and anxious. It is unbelievable that that's what they think of us."

The MNA, however, pointed out that the marlstone rock of Wellenberg contains a lot of water and is unstable; an underground repository would require an enormous amount of effort to keep it open and stop the tunnels from distorting or collapsing. Retrieval storage of nuclear waste in the rock is no more than an empty promise. In the end, this argument won the day. After 17 years, the Wellenberg dump plans have now been shelved.

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IN BRIEF

Bigger bailout for BE. The UK government has not just renewed its temporary loan to British Energy (see *WISE/NIRS Nuclear Monitor* 573, "In Brief") – it has increased it to £650 million (US\$1 billion). Belgium has complained to the European Commission that the loan is in breach of European competition rules, and could distort the electricity market.

BBC, 2 October 2002

U.S. waste setbacks. The State of Nebraska has been fined US\$151 million for refusing to issue a license in 1998 for a dump for low-level radioactive waste from five states (Nebraska, Kansas, Oklahoma, Arkansas and Louisiana). The state has already started its appeal against the ruling.

Also, a federal court has struck down a deal that the Energy Department made with Peco (now part of Exelon) to offset part of its contributions to the nuclear

waste fund so as to pay for on-site dry cask storage at Peach Bottom.

Finally, in California, Governor Gray Davis has vetoed a bill that would have put strict limits on the disposal of low-level radioactive waste, but issued a moratorium on waste from decommissioned nuclear sites going to municipal landfills. Sierra Club spokesman Bill Magavern criticized the moratorium because it "still allows for recycling of radioactive waste".

omaha.com, 1 October 2002; Las Vegas Review-Journal, 27 September 2002; AP, 30 September 2002

Bulgaria issues EU ultimatum. Bulgaria has told the European Union that it will delay closure of Kozloduy 3 and 4 unless the EU sends experts to inspect the units' safety and to re-evaluate the demand that the reactors should be closed by the end of 2006. The reactors have no containment and are amongst

the most dangerous of the Soviet-designed pressurized water reactors (VVERs).

AP, 24 September 2002

China: Qinshan-4 critical. The CANDU reactor Qinshan-4 achieved criticality on 22 September, three weeks ahead of schedule. It is due to be connected to the grid in October achieve commercial operation by the end of 2002.

WNA News Briefing, 25 September – 1 October 2002

US: Practice emergency turns real. An emergency drill at the Oak Ridge Y-12 plant turned real after a fire ignited under a uranium hood on 26 September. The fire occurred when depleted uranium metal which was being used in the hood ignited spontaneously. No-one was reported to be injured.

The Oak Ridger, 26 September 2002

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WISE/NIRS NUCLEAR MONITOR

The Nuclear Information & Resource Service was founded in 1978 and is based in Washington, US. The World Information Service on Energy was set up in the same year and houses in Amsterdam, Netherlands. NIRS and WISE Amsterdam joined forces in 2000, creating a worldwide network of information and resource centers for citizens and environmental organizations concerned about nuclear power, radioactive waste, radiation, and sustainable energy issues.

The *WISE/NIRS Nuclear Monitor* publishes international information in English 20 times a year. A Spanish translation of this newsletter is available on the WISE Amsterdam website (www.antenna.nl/wise/esp). A Russian version is published by WISE Russia and a Ukrainian version is published by WISE Ukraine. The *WISE/NIRS Nuclear Monitor* can be obtained both on paper and in an email version (pdf format). Old issues are available through the WISE Amsterdam homepage: www.antenna.nl/wise.

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