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HAPANA KWA MADINI YA URANIUM

('No to uranium mining' in Swahili) On July 2, at a meeting in St Petersburg in the Russian Federation, the Unesco World Heritage Committee unanimously approved Tanzania's request to allow uranium mining in the Selous game reserve. The reserve was designated a World Heritage Site in 1982 and is one of the largest remaining wildernesses in Africa.

(752.4253) WISE Amsterdam - After months of intense lobbying by nuclear industry and government the July 2, decision comes as a great relief to the government, whose plan to alter the boundaries of Selous met strong opposition from environmentalists on the grounds that mining in the World Heritage Site would have disastrous consequences. They argued that mining of uranium had caused devastating environmental and health damage wherever it had been done.

But, at the meeting in St Petersburg from June 24 to 6 July 2012, the committee unanimously approved Tanzania's request to modify the boundary of the game reserve. The decision means that some 19,793 hectares (nearly 200 square kilometers) to the south of the Selous, where uranium deposits are found, will also be excluded. Tanzania applied for permission to alter the boundaries of Selous in January 2011, arguing that extracting uranium in the area was critical for funding development programs and driving the economy.

The Selous was designated a Unesco World Heritage Site in 1982 due to the diversity of its wildlife and undisturbed nature. Within the reserve no permanent human habitation or permanent structures are permitted. All entries and exits are carefully controlled by the Wildlife Division of the Ministry of Natural Resources and Tourism. The five million-hectare game reserve is home to the largest population of elephants on the continent and also has large numbers of black rhinos, cheetahs, giraffes, hippos

and crocodiles -along with grasslands and miombo forests. Its diverse landscape retains undisturbed biological and ecological processes.

The project will be carried out by an Australian uranium mining firm called Mantra Resources at a cost of US\$400million. Some environmentalists and politicians, including a handful of MPs, have consistently voiced strong criticism to the mining plan. They maintain that the project will have devastating consequences on the economic and social fronts and deal a major blow to the ecology.

According to IUCN more than a quarter of natural World Heritage sites are under pressure by existing or future mineral extraction. For this reason, IUCN is calling on the private sector, state-run companies and governments themselves to adopt and enforce the "no go" principle, meaning that no mining and/or mineral and oil exploration and production can be carried out in World Heritage sites.

Sources: The Citizen (Tanzania), 3 July 2012 / Tanzania Daily News, 5 July 2012 / UICN website, visited 10 July 2012

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NAIIC REPORT: FUKUSHIMA MANMADE; MINOR LOCA DUE TO EARTHQUAKE

Early July the National Diet of Japan published the official report of the Fukushima Nuclear Accident Independent Investigation Commission (NAIIC). The report states that although triggered by the earthquake and tsunami, the March 11, 2011 accident at the Fukushima Daiichi nuclear power plant cannot be regarded as a natural disaster but a "profoundly manmade disaster". Evidence that the reactors were severely damaged before the tsunami hit the coast is mounting.

(752.4254) WISE Amsterdam - "The earthquake and tsunami of March 11, 2011 were natural disasters of a magnitude that shocked the entire world. Although triggered by these cataclysmic events, the subsequent accident at the Fukushima Daiichi Nuclear Power Plant cannot be regarded as a natural disaster. It was a profoundly manmade disaster – that could and should have been foreseen and prevented. And its effects could have been mitigated by a more effective human response."

These are the first lines of the 'Message of the Chairman' in the official report of the Fukushima Nuclear Accident Independent Investigation Commission (NAIIC). On October 30, 2011, the NAIIC Act (officially, the Act regarding Fukushima Nuclear Accident Independent Investigation Commission) was enacted, creating an independent commission to investigate the Fukushima accident with the authority to request documents and request the legislative branch to use its investigative powers to obtain any necessary documents or evidence required. This was the first independent commission created in the history of Japan's constitutional government.

The report (published early July by National Diet of Japan) reveals several chronic issues and contradicts reports by the Japanese government and Tepco. But as always it was cherry-picking for different players. While the general public opinion said the accidents was 'handmade', the nuclear industry PR did not hesitate to show that it was a 'Japanese accident': Japanese culture was the main culprit, implying the causes of the accident were solely Japanese and nuclear power as such has nothing to do with it. In the July 5, *World Nuclear News* report on the NAIIC-report, is not once mentioned that the earthquake was an important factor in how the accident started: "Japanese culture itself" was the culprit.

And indeed the collusion between the Japanese government and Tepco is an important factor why the plant was so vulnerable. But that is only partly to blame on 'Japanese culture'. But, as the UK daily *The Guardian* points out (July 6) by claiming the disaster was 'made in Japan', the official report reinforces, yet does not explain, unhelpful stereotypes. Bringing out the "made in Japan" argument is not helpful. It panders to the uniqueness idea and does not explain, but rather reinforces, existing stereotypes. Moreover, the supposedly Japanese qualities that the report outlines, such as obedience, reluctance to question

and enhancing 'standards of safety for protection of health and minimization of danger to life and property'. But even important: it is obvious that nuclear power thrives in countries with exactly that same 'culture': a centralised society, with the tendency to criticize alternative views, suppress dissent, and maintain 'reflexive obedience'; and a government bodies relying too much on assurances and complacency than true oversight.

LOCA result of earthquake

Another finding, not frequently mentioned in headlines, and contrary to all previous statements by Tepco and the

Japanese government is the fact that the Fukushima-reactors were already severely damaged after the earthquake and before the tsunami hit the Japanese east-coast. A Loss-Of-Coolant-Accident (LOCA) was in progress.

The Nuclear Monitor published about it several times (for the first time in the May 27, 2011 issue), but now the official report confirms this. What is important to realise (and what the NAIIC-report –or at least the executive English summary- fails to mention) is that although the earthquake was 9.0 magnitude, the epicentre was 110 miles (172 km) out at sea.

Record radiation detected at Fukushima reactor.

Tepco said record amounts of radiation had been detected in the basement of reactor number 1 on June 28, further hampering clean-up operations. Tepco took samples from the basement after lowering a camera and surveying instruments through a drain hole in the basement ceiling. Radiation levels above radioactive water in the basement reached up to 10,300 millisievert an hour, a dose that will kill humans within a short time after making them sick within minutes. The annual allowed dose for workers at the stricken site is reached in only 20 seconds.

AFP, 28 June 2012

authority, "sticking with the program" and insularity, are not at all unique to Japan, but are universal qualities in all societies. Putting a cultural gloss on the critical investigative report sends a confusing message to the global community - particularly when it comes from a country that is a world leader in technological sophistication.

It is almost inherent of the nuclear industry to have close ties with regulators. For instance in the Netherlands, regulating and promoting nuclear power were placed under the same Ministry in 2010. Or, internationally the IAEA's main task is to promote nuclear power ('The Agency shall seek to accelerate and enlarge the contribution of atomic energy') while at the same time monitoring safeguards

The accident is clearly attributable to the natural phenomena: the earthquake and resulting tsunami. Yet a number of important factors relating to how the accident actually evolved remain unknown, mainly because much of the critical equipment and piping relevant to the accident are inside the reactor containment facility and are thus beyond the reach of inspection or verification for many years to come.

In spite of this, Tepco specified in its interim investigation report that equipment providing key safety features was not damaged by the earthquake, and that the main cause of the accident was the tsunami. Included in the report was a disclaimer that the report is based on findings "to the extent confirmed."

The government also wrote a similar accident report that was submitted to the International Atomic Energy Agency (IAEA).

However, the report states, "it is impossible to limit the direct cause of the accident to the tsunami without substantive evidence." The Commission believes that this is an attempt by Tepco to avoid responsibility by putting all the blame on the unexpected (the tsunami), as Tepco wrote in their midterm report, and not on the more foreseeable earthquake.

Although there were a number of external power lines to the plant, there were only two source stations, and both were put out of commission by the earthquake, resulting in a loss of external power to all the units. The diesel generators and other internal power equipment, including the power distribution buses, were all located within or nearby the plant, and were inundated by the tsunami that struck soon after. The assumptions about a normal station blackout (SBO) did not include the loss of DC power, yet this is exactly what occurred. (DC is the abbreviation for 'direct current', which is a type of electrical current that travels through a circuit in only one direction. AC stands for 'alternating current', which is an electrical current that frequently reverses direction.)

Investigate and verify causes

The Commission conducted its investigations and hearings carefully, 'conscious of not jumping to conclusions based on preordained policy'. The Commission recognizes the need for the regulators and Tepco to investigate and verify causes of the accident based on the following facts:

*1- The emergency shut-down feature, or SCRAM (Rapid shutdown of a nuclear reactor where fission is halted by inserting control rods into the core), went into operation at Units 1, 2 and 3 immediately after the commencement of the seismic activity. Strong tremors at the facility began 30 seconds after the SCRAM and the plant shook hard for more than 50 seconds. That does not mean, however, that the nuclear reactors were incapable of being impacted by the seismic movements. It is thought that the ground motion from the earthquake was strong enough to cause damage to some key safety features, because seismic backchecks against the earthquake design basis and anti-seismic reinforcement had not been done.

* 2- The reactor pressure and water

levels make it obvious that a massive loss of coolant (LOCA) did not occur in the time period between the earthquake and the tsunami. However -as has been published by the Japan Nuclear Energy Safety Organization (JNES) in the "Technical Findings" composed by NISA- a minor LOCA, from a crack in the piping and a subsequent leak of coolant would not affect the water level or pressure of a reactor, and could have occurred without being apparent to operators. If this kind of minor LOCA were to remain uncontrolled for 10 hours, tens of tons of coolant would be lost and lead to core damage or core melt.

* 3- The government-run investigation committee's interim report, NISA's "Technical Findings," and specifically Tepco's interim report, all concluded that the loss of emergency AC power -that definitely impacted the progression of the accident- "was caused by the flooding from the tsunami." Tepco's report says the first wave of the tsunami reached the site at 15:27 and the second at 15:35. However, these are the times when the wave gauge set 1.5km offshore detected the waves, not the times of when the tsunami hit the plant. This suggests that at least the loss of emergency power supply A at Unit 1 might not have been caused by flooding. Based on this, some basic questions need to be logically explained before making a final determination that flooding was the cause of the station blackout.

* 4- Several Tepco vendor workers who were working on the fourth floor of the nuclear reactor building at Unit 1 at the time of the earthquake witnessed a water leak on the same floor, which houses two large tanks for the isolation condenser (IC) and the piping for IC. The Commission believes that this was not due to water sloshing out of the spent fuel pool on the fifth floor. However, since we cannot go inside the facility and perform an on-site inspection, the source of the water remains unconfirmed.

*5- The isolation condensers (A and B2 systems) of Unit 1 were shut down automatically at 14:52, but the operator of Unit 1 manually stopped both IC systems 11 minutes later. TEPCO has consistently maintained that the explanation for the manual suspension was that "it was judged that the per-hour reactor coolant temperature excursion rate could not be kept within 55 degrees (Celsius), which is the benchmark provided by the operational manual."

The government-led investigation report, as well as the government's report to IAEA, states the same reason. However, according to several workers involved in the manual suspension of IC who res-

ponded to our investigation, they stopped IC to check whether coolant was leaking from IC and other pipes because the reactor pressure was falling rapidly. While the operator's explanations are reasonable and appropriate, TEPCO's explanation is irrational.

* 6- There is no evidence that the safety relief (SR) valve was opened at Unit 1, though this should have taken place in the case of an accident. (Such records are available for Units 2 and 3.) We found that the sound of the SR valve opening for Unit 2 was heard at the Central Control Room and at Unit 2, but no one working at Unit 1 heard the sound of the Unit 1 SR valve opening. It is therefore a possibility that the SR valve might not have worked in Unit 1. In this case, a minor LOCA caused by the seismic motion could have taken place in Unit 1.

Conclusion

In short: The damage to Unit 1 was caused not only by the tsunami but also by the earthquake, a conclusion made after considering the facts that: 1) the largest tremor hit after the automatic shutdown; 2) JNES confirmed the possibility of a small-scale LOCA; 3) the Unit 1 operators were concerned about leakage of coolant from the valve, and 4) the safety relief valve was not operating.

Additionally, there were two causes for the loss of external power, both earthquake-related: there was no diversity or independence in the earthquake-resistant external power systems, and the Shin-Fukushima transformer station was not earthquake resistant.

Development of civil society

The 'Message of the chairman' in the report ends with a message for change: "The consequences of negligence at Fukushima stand out as catastrophic, but the mindset that supported it can be found across Japan. In recognizing that fact, each of us should reflect on our responsibility as individuals in a democratic society. As the first investigative commission to be empowered by the legislature and independent of the bureaucracy, we hope this initiative can contribute to the development of Japan's civil society."

Well, despite the hundred of thousand protesting the restart of nuclear reactors and trying to build a civil society, Japanese government gave the permission for the restart of the Ohi-reactors. That decision denied the fact that all elements of this catastrophe are still present in Japanese society: the tendency of relying too much on assurances and complacency than true oversight (as in

many societies) as well as the chance of earthquakes.

The executive summary of the NAIC-report is available at: <http://naic.go.jp/en/>

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RESTARTING NUCLEAR REACTORS? RESTARTING PROTEST!

On July 7, Japan has generated its first nuclear electricity in two months when the Ohi-3 reactor began supplying power to the grid after it has been officially restarted on July 1. The restart of Ohi-4 is expected in July too. The Ohi-3 restart has been accompanied by the most massive protests Japan has seen since the 1960s: not only in Ohi but nationwide hundreds of thousands of people gathered.

(752.4255) WISE Amsterdam - On Friday June 29, more than 150.000 people gathered in front of Noda's residence in Tokyo. A week later on Friday, July 6, again 100.000 demonstrators took the streets. The Friday demonstrations have been organized by the Metropolitan Coalition against Nukes, which has been active since March 2012. At first the demonstration gathered a few hundred people but after the decision to restart the Ohi reactors, on June 22, 45.000 people gathered. Hundreds of people tried to block the entrance to the reactors in Ohi and stop workers from entering the power plant. On July 29, several groups organize a human chain at the Diet building. International solidarity is called for.

The restart at Ohi has not gone smoothly. As if the people living close to nuclear reactors in Japan aren't worried enough, "more than two dozen alarms rang out at the plant. That came after three days after a separate alarm was triggered mid-week". Fortunately, those alarms were false and caused by "unstable at-

mospheric conditions, such as a dense fog". Attempts to reassure concerned people have failed at the outset.

This follows warnings just last week from Mitsuhsa Watanabe, tectonic geomorphologist at Toyo University, and Katsuhiko Ishibashi, seismologist and professor emeritus at Kobe University. Using Ohi operator Kansai Electric Power Co s (KEPCO) own published seismic data, the scientists have found that the reactors sit on geological faults that could produce much larger earthquakes than KEPCO has previously admitted. In 2005, Ishibashi predicted an earthquake could cause a nuclear disaster. In March 2011, he was proved terribly right.

After being shown in such blunt terms that their government is not listening to them, concerned citizens are now resorting to legal means to try to stop the Ohi reactors.

The case of two groups, Green Action and Mihama-no-Kai (Osaka Citizens Against the Mihama, Ohi and Taka-

hama Nuclear Power Plants), before a Japanese court concludes July 9, with a decision expected within two weeks.

The groups cite errors in the guidelines for reactor design safety criteria, the three active earthquake faults near the Ohi plant and the need to re-examine the fault under the plant. They also raise concerns that ageing piping at Ohi could be damaged by an earthquake, based on the suspicion that important equipment at the Fukushima reactors was damaged by the March 2011 earthquake and not by the subsequent tsunami.

Sources: Metropolitan Coalition Against Nukes / World Nuclear News, 5 July 2012 / Justin McKeating, Greenpeace Blog 6 July 2012 / Asahi Shimbun, 6 July 2012

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SKB LICENSE APPLICATION SHOW SERIOUS SHORTCOMINGS

In March 2011, the Swedish Nuclear Fuel and Waste Management Company, SKB, submitted an application to build a repository for spent nuclear fuel near the nuclear power plant at Forsmark, about 160 km up the coast from Stockholm. In accordance with Swedish law the application was circulated for comment among all the institutions and organizations that have participated in the Environmental Impact Assessment consultations. Comments were to focus on perceived gaps in SKB's environmental impact statement. The deadline for comment was 1 June 2012.

(752.4256) Joanna Widstrand - Several parties to the consultations note serious shortcomings in the application and the environmental impact statement (EIS). They include the two national-level environmental groups who have

taken part in the consultations, namely, the Swedish Society for Nature Conservation, SSNC, with its sister organization The Swedish NGO Office for Nuclear Waste Review, MKG, and Milkas, representing the Swedish Anti-Nuclear Move-

ment and Friends of the Earth Sweden.

SKB's license application will now be processed through two parallel reviews in the Swedish legal system: one performed by the Swedish Radiation

Safety Authority (SSM), who will check the application's compliance with current legislation in the radiation safety area, and the other performed by the Environmental Court, who will examine its compliance with the Environmental Code. SSM plays two parts in the process: it is a reviewing body in its own right, and it acts as a consultative body to the Environmental Court.

The initial phase, in which the need for amendments to the application is to be analysed, is common to both SSM's and the Court's review. This first step of the licensing process is important, since it represents an opportunity for input of a broad range of opinions on the application through a national consultation process. When the present consultation process is ended, the Environmental Court and the SSM will proceed to review the application for as long as they find necessary and then determine what amendments are necessary. Only when the application is complete will the authority and the court start the main review process. If the court decides that the amendments are not satisfactory, the application may be rejected.

In the main review there will be a new consultation on the issues and there will be a hearing; thereafter the court and the regulator will submit their assessments of the application to the Swedish Government. The Government will then decide the final repository's fate, either granting a license to SKB or rejecting the company's application, taking due account of the recommendations of SSM and the Environmental Court.

Issues concerning long-term safety

SKB's proposed method for final disposal of spent nuclear fuel is a KBS-3 repository, the long-term safety of which relies on artificial barriers of copper and clay. The 5 meter-long fuel rods are to be put in a total of 6,000 canisters made out of copper, which are to be deposited in shallow boreholes about 500 m down in the Forsmark bedrock. The boreholes and access tunnels are to be filled out with bentonite clay with the intention to keep the spent nuclear fuel encapsulated and separated from the biosphere for as long as the contents pose a hazard – in essence, for all time to come. The bentonite clay is supposed to protect the copper canisters from contact with groundwater-leading fissures in the surrounding bedrock. The main function of the clay is for it to swell when in contact with water, pretty much like cat litter does. Once saturated, it is expected to keep the canisters and the

spent fuel shielded from their surroundings. SKB assures us that everything will be fine.

However, the organizations who participated in the EIA consultation process are of a different opinion. Particularly critical are, besides environmental organizations, the Swedish Environmental Agency, the municipalities of Östhammar and Oskarshamn, the Royal Institute of Technology, and Lund University.

The main critique presented in the SSNC's and MKG's consultation document is that the company's application does not contain scientific evidence to support the claims for long-term safety of the repository. Copper corrosion, for example, is a problem that has not been sufficiently investigated by the company. In order for the bentonite clay to function as the intended isolator in the repository, a specific amount of water – not too much, not too little – needs to be present in the bedrock so that the bentonite will start swelling. If the clay does not get activated, which is a possible scenario in the relatively dry Forsmark bedrock, there is an imminent risk that the clay will be affected by the heat and radioactivity coming from the canisters and possibly erode. Given an eroded buffer, the canisters would be exposed to water seeping into the repository, which may corrode the copper canisters. The interplay between the copper and clay in a repository environment is another area that requires further investigation. In sum: It is not acceptable to build a repository that is supposed to be safe and protect humans and the environment from radioactive waste/pollution/toxicity for over 100,000 years, when so much research on such key issues is still lacking.

Milkas seconds the criticisms put forward by the SSNC and MKG. In addition, Milkas raises issues relating to the geological characteristics of the chosen site. A coastal site like that at Forsmark implies the risk that groundwater will readily spread any leakage from the repository into the Baltic Sea. In the longer term there is the problem of coming ice ages. The repository is to be installed in a tectonic lens – a body of crystalline granite in the midst of a shearing zone. Whereas the zone is stable at present, it may very likely be reactivated under the strains associated with glaciation. On the whole, SKB tends consistently to underestimate the seismic effects of glaciation. The installation of the repository in the lens, in itself, may impair the integrity of the lens, in which case

the whole repository is at risk – perhaps even a good deal earlier than the next ice age.

Other concerns include an apparent inability on the part of the applicant to elaborate scenarios that challenge the success of the repository project. Both the Government and the regulatory body have pointed to this bias and called for such scenarios. None has been forthcoming. As a result, we are left to rely on assurances.

A good share of Milkas comments, addressed specifically to the Environmental Court, concerns procedural as well as substantive shortcomings in the EIA process and the EIS in relation to the requirements of the Environmental Code. In Milkas' view, the applicant has effectively subverted the dialogic method that the Code envisages to ensure all-round evaluation of major projects' environmental consequences.

What next?

SSM's comments on the need for amendments are to be handed in to the Environmental Court by November 1. At the same time the Swedish Council for Nuclear Waste, a consultative scientific board to the Swedish Government, will give their view. After that, correspondence between SKB and the various organizations who participated in the consultation process will take place in order to discuss the additional work to be required of the company. The Court's determination on the issue of amendments is expected at the end of 2013, at the earliest. The story continues ...

Source and contact: Joanna Widstrand, former project assistant at MKG, the Swedish NGO Office for Nuclear Waste Review.

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WORLD NUCLEAR INDUSTRY STATUS REPORT 2012

Twenty years after its first edition, the World Nuclear Industry Status Report 2012 portrays an industry suffering from the cumulative impacts of the world economic crisis, the Fukushima disaster, ferocious competitors and its own planning and management difficulties.

(572.4257) WNSR - Key results of the 2012 assessment include:

- * Only seven new reactors started up, while 19 were shut down in 2011. On 5 July 2012, one reactor was reconnected to the grid at Ohi in Japan and another unit is expected to generate power on the site in July 2012 too. However, it remains highly uncertain, how many others will receive permission to restart operations in Japan.

- * Four countries announced that they will phase out nuclear power within a given timeframe.

- * At least five countries have decided not to engage or re-engage in nuclear programs.

- * In Bulgaria and Japan two reactors under construction were abandoned.

- * In four countries new build projects were officially cancelled. Of the 59 units under construction in the world, at least 18 are experiencing multi-year delays, while the remaining 41 projects were started within the past five years or have not yet reached projected start-up dates, making it difficult to assess whether they are running on schedule.

- * Construction costs are rapidly rising. The European EPR cost estimate has increased by a factor of four (adjusted for inflation) over the past ten years.

- * Two thirds of the assessed nuclear companies and utilities were downgraded by credit rating agency Standard and Poor's over the past five years.

- * The assessment of a dozen nuclear companies reveals that all but one performed worse than the UK FTSE100 index. The shares of the world's largest nuclear operator, French state utility EDF, lost 82 percent of their value, that of the world's largest nuclear builder, French state company AREVA, fell by 88 percent.

In contrast, renewable energy development has continued with rapid growth figures.

- * Global investment in renewable energy totaled US\$260 billion in 2011, almost five times the 2004 amount. Over the same period, the total cumulative investment in renewables has risen to over US\$1 trillion, which compares to nuclear power investment decisions of about \$120 billion.

- * Installed worldwide nuclear capacity decreased again in 2011, while the annual installed wind power capacity increased by 41 GW in 2011 alone. Installed wind power and solar capacity in China grew by a factor of around 50 in the past five years, while nuclear capacity

increased by a factor of 1.5. Since 2000, within the European Union nuclear capacity decreased by 14 GW, while 142 GW of renewable capacity was installed, 18 percent more than natural gas with 116 GW.

"The market for nuclear is shrinking year by year, while renewable energy deployment continues at pace and in an ever increasing number of countries. With nuclear power becoming more expensive than a widening range of renewable energy technologies this trend will only continue", said Antony Froggatt, co-author of the report.

"The fact that plant life extension seems the most likely survival strategy of the nuclear industry raises serious safety issues. Most critically will be to what extent and for how long nuclear safety authorities will be in a position to withstand growing pressure from nuclear utilities to keep operating increasingly outdated technology", states lead author Mycle Schneider.

Source: www.WorldNuclearReport.org.

IN MEMORY OF ROSALIE BERTELL

It is with great sadness that we have learned of the death of Dr Rosalie Bertell, Grey Nun of the Sacred Heart, founder of the Institute for Concern for Public Health and lifelong campaigner against the humanitarian and environmental impact of military and industrial pollution. She will be sorely missed by all those whose campaigns she assisted and those whose lives she touched. Rosalie was 83.

Born in 1929 in Buffalo, NY, Rosalie Bertell earned her PhD in Biometrics at Catholic University in Washington, DC. She was a Carmelite and then a Grey Nun of the Sacred Heart for over 50 years. She worked at Roswell Park Memorial Cancer Institute studying the effects of low doses of ionizing radiation and was influential in preventing nuclear reactors, specifically one near Niagara Falls, NY, next to a baby food company -the first proposed reactor stopped by public opposition in the US.

She compiled much of her expertise on the dangers of low dose ionizing radiation in her first book, *No Immediate Danger? Prognosis for a Radioactive Earth* (1985, republished by The Women's Press, Toronto). Among numerous honors and achievements, she received the Right Livelihood Award (alternate Nobel Peace Prize) along with Dr. Alice Stewart in 1986 "for raising public awareness about the destruction of the biosphere and human gene pool, especially by low level radiation." She provided expert support to help people on the receiving end of the radioactive wastes and industrial poisons from Love Canal to Chernobyl to Rongelap and the Marshall Islands to Bhopal to communities in 60 countries.

Rosalie's many writings and speeches, her scientific knowledge and fierce and gentle love must carry us on. She did not stop -has not stopped- as we continue her work and pass it on to the next generations.

DEFER KOODANKULAM COMMISSIONING

Much has been written about the protests and the repression by the state of India against the people near Koodankulam. Although many times delayed, current plans are to commission the first two reactors in the coming months. Disconcertingly, India's new coastal reactors are situated in an environment similar to that of Fukushima -a tsunami and earthquake zone, with the addition of karst formations, geothermal irregularities, and a lack of emergency water supplies. But there is more.

(752.4258) PMANE - It is famously said: "In public domain, truth is not the truth, perception is the truth". This adage could be related to the discourse on the Koodankulam Nuclear Power Plant. While the arguments in favour of the plant is that it will generate electric power essential for 'development', People's Movement Against Nuclear Energy (PMANE) say that the plant will be 'destructive' to the life and livelihood of the Project Affected People (PAP).

While the touted 'truth' -that the plant is the safest in the world- is couched in utmost secrecy, public 'perception' -serious misgivings on the safety of the Plant is out in the open. As the nuclear establishment is racing towards the commissioning of the plant this perception among the PAP is increasing and not diminishing. And there are several reasons for this.

First and foremost, the project is being commissioned without any legal Environmental Impact Assessment (EIA), a fact admitted by the Ministry of Environment & Forests in a sworn affidavit filed in the Madras High Court. According to this affidavit, environmental clearance for Units 1 and 2 was given 'as early as 9th May 1989' and renewed on 6th September 2001. Since EIA Notification under Environmental Protection Act came into existence only on 27th January, 1994 and provision for public hearing was introduced only on 10th April, 1997 there was no need for KKNPP to go through these critical processes.

Nuclear establishment has taken shelter behind this fig-leaf to ram a 2000 MW nuclear power plant down the throat of over 1.5 million PAP without even going through the most basic process of EIA and public hearing. What is more, Nuclear Power Corporation Limited (NPCL) has been consistently refusing to share the Site Evaluation (SE) and Safety Analysis Report (SAR) with the PAP.

This forced PMANE to appeal to the Central Information Commission who in turn ordered NPCL "to provide an attested photocopy of the SAR and SE Report after severing any proprietary

details of designs provided by the suppliers to the appellant before 25 May, 2012." But the NPCIL has refused arguing that SAR 'is a third party document belonging to a Russian company' and therefore 'cannot be shared with anyone'. NPCIL even threatened to take CIC to court. Obviously NPCL is more interested in protecting a Russian company (third party) than safeguarding the PAP (first party)!

In the face of such persistent stonewalling, the humble PMANE scientists dug deep and did some quality research. Result is the startling revelation that there has been a serious breach of contract and perhaps deceit in that the VVER reactor under commissioning at Koodankulam differs from the one featured in the inter-governmental agreement between Russia and India.

According to documents published in 2006, there was no weld on the beltline (middle portion) of the reactor pressure vessel (RPV). Now AERB says that there are two welds on the beltline of the RPV installed at Koodankulam exposing it to high failure risk that could lead to offsite radiological contamination. If the reactor is hot-commissioned, it will be virtually impossible to subject the vessel to a detailed inspection and remediation. From a safety perspective, the IAEA-mandated study of pressurized thermal shock has to be done before commissioning the reactors at Koodankulam.

Pure fresh water is a critical input for Koodankulam during operation as well as safety of the spent fuel. While approval for the plant was given in 1989, AERB mandated accessing of fresh water-from two reservoirs through pipelines with an on-campus reserve of 60,000 cubic meters, sufficient to maintain the spent fuel pool and the reactor cores (under shutdown mode) for 30 days. These sources are not available and have been replaced by four imported seawater desalination plants with a reserve of 12,000 cubic meters of water i.e. just 20% of what was stipulated by AERB and that too from artificial source. This is serious breach of safety, because fresh water is the only remedy

in the event of a nuclear emergency.

All these takes us to an essential prerequisite before the plant is commissioned -mock evacuation drills in the 30 km or at least the 16 km radius of the project. This has not been done. On June 9, 2012, the Tirunelveli district administration and the NPCL officials went through some motions in the remote hamlet of Nakkaneri of hardly 300 people and claimed that the 'mock drill' was a great success. According to a fact-finding team that went to the village subsequently, on that day revenue officials accompanied by a large posse of policemen came to the village, got some papers signed and announced it as 'mock-evacuation drill'. The district administration as well as NPCL has been extremely secretive in the matter!

No EIA, no public hearing, no sharing of Site Evaluation and Safety Analysis, no natural fresh-water, no evacuation drill and to cap it all breach of contract and installation of low quality Pressure Vessel. By all accounts it is 'no-go' for the project. The least the nuclear establishment should do is to defer the commissioning process and undertake a comprehensive review and analysis of all the fears expressed. While doing so the two cataclysmic events -2004 Tsunami and 2011 Fukushima nuclear disaster- that rocked this part of the world since the Koodankulam nuclear power plant was given 'environmental clearance' should be factored in.

Heavens are not going to fall if a few hundred megawatts of nuclear power are not added to the grid in a mad hurry. Much more important is the safety of the plant in the perception of the people affected.

Source: M.G.Devasahayam, Convener of PMANE Expert Team, 20 June 2012
Contact: Peoples Movement Against Nuclear Energy (PMANE), Idinthakarai & P. O. 627 104, Tirunelveli District, Tamil Nadu, India

ASSESSMENT OF THE EU STRESS TESTS

The March 2011 accident at the Fukushima I nuclear power plant proved that highly unlikely incidents cannot be excluded. Contrary to accepted practice Probabilistic Safety Assessments (PSA) do not constitute a sufficient basis to declare a plant operation safe. Safety of nuclear power plants needs to be backed by deterministic assessments, which excludes initiating events and accident scenarios only if they are proven to be physically impossible.

(752.4259) Wenisch/Becker - Events at Fukushima compounded public mistrust towards nuclear power worldwide. In Europe, the European Commission welcomed a suggestion by the government of Austria to conduct stress tests at all nuclear power plants in the European Union. The EU nuclear safety regulators –ENSREG –took over this task. The tests were introduced to improve confidence in the safety of European nuclear power plants (NPPs). In particular, they should examine the consequences of earthquakes and floods, and the combination of events previously excluded. However, the tests would be limited in scope: safety features such as ageing or design faults would not be taken into account.

Assessment of stress tests

An assessment of the stress tests –by Antonia Wenisch and Oda Becker, commissioned by Greenpeace- is published recently: *Critical Review of the EU Stress Test performed on Nuclear Power Plants*.

The EU stress tests are not a safety assessment of the European nuclear power plants. They represent a limited analysis of the vulnerability of such plants with respect to natural hazards. The accident scenarios are focused on external events: the quality of the structures, systems and components and the degradation of the oldest nuclear power plants in Europe are not subject of the analysis. The peer review team did not consider all safety issues that could trigger or aggravate an accident situation (e.g. ageing, use of MOX fuel, safety culture).

The design of the plants with respect to natural events varies, therefore the safety margins can only be assessed through an engineering judgment. In December 2011, the IAEA has published a new guide for extreme weather hazards. Greenpeace recommends that all plants make an assessment of weather hazards according to the new IAEA guide.

Severe accident management, especially regarding spent fuel pools and multi-unit accidents like at Fukushima,

is an issue everywhere, but the way it is tackled varies immensely. Only one country (Slovenia) has a simulator for severe accident management.

The peer review team has not assessed the current safety level of the European nuclear power plants, but only the potential increase in the level of safety in the next decade. Currently, there are several known shortcomings with respect to the protection against earthquake, flooding and extreme weather. Furthermore, it is well known that it will be impossible to cope with a severe accident, especially if it is accompanied by earthquake or flooding. The reviewers only described the weaknesses they identified, but not an overall assessment of all facts, which would allow a risk assessment.

The EU stress tests have no direct effect on the European nuclear power plant fleet. ENSREG has no say on the lifetime extension applications of even the oldest plants with the most obvious problems (Mühleberg, Doel, Rivne etc.). To gain an accurate picture of nuclear risk, EU decision makers should add a third leg to the nuclear stress tests - a full assessment of emergency response preparedness, which examines the viability of emergency response plans, address weaknesses and purpose improvements.

Conclusion

Far from restoring faith in the safety of nuclear power in Europe, the stress tests and ENSREG report published in April 2012 serve to further undermine it. At their most basic level, nuclear plants are concrete shielding to a fission process that creates large quantities of energy. Energy Commissioner Oettinger has acknowledged that the elimination of risk at such facilities is impossible, with efforts limited to merely minimising the threat. Across Europe, the stress tests have revealed some unacceptable failures in risk management. Serious gaps have repeatedly been found in readiness for emergencies. No guarantee can be given that plants operating in earthquake zones will remain safe in the event of serious seismic activity.

Many lack any form of safe containment for their spent fuel pools and some have entirely inadequate access to emergency power. In short, the lessons from Fukushima are clearly yet to be learned in Europe.

Yet some plants are located just 10 kilometres from major urban populations like the city of Antwerp, raising the question why evacuation plans were not considered as part of the stress tests. The tests also failed to consider the impacts of multiple disaster scenarios as experienced at Fukushima in 2011 – the very crisis that originally prompted the stress tests. On top of these questionable omissions, the test results are not standardized in any way, making comparisons effectively impossible. The results are lack of any kind of pass or fail criteria and the partiality of those carrying and vetting the tests and falls short of providing the relevant authorities with the necessary information to draw proper conclusions.

When EU heads of state and government meet in autumn 2012 to discuss the results of this exercise, they can only conclude that the stress tests and peer review fall far short of expectations. They should recognise that nuclear power will always remain a dangerous technology. This is why all European governments should develop a credible phaseout plan for nuclear power in Europe, starting with the most risky reactors.

Source: *Critical Review of the EU Stress Test performed on Nuclear Power Plants*. Study commissioned by Greenpeace. Authors: Antonia Wenisch, Oda Becker, May 2012 (Published 14 June 2012)

Both the full report and the executive summary are available at: www.greenpeace.org/eu-unit/en/Publications/2012/stress-tests-briefing/

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SAFETY UPGRADES TO ENSURE SAFETY FRENCH REACTORS

French authorities have laid out the improvements they want to see from the country's nuclear operators to ensure safety in case of extreme natural disasters. EdF (Electricite de France), operator of the country's 58 nuclear reactors, has six years to complete about 10 billion euros (US\$12 billion) of measures to upgrade safety. Autorité de sûreté nucléaire, the French regulator, published the requirements for the industry in January and published the details on June 28.

(752.4260) WISE Amsterdam - The extensive measures to improve nuclear safety described by the Nuclear Safety Authority (Autorité de sûreté nucléaire, ASN) on June 28, affect the operations of three organisations: EDF, which operates 58 large reactors at 19 nuclear sites; Areva, which has fuel cycle facilities; and the CEA, which operates fuel and research facilities.

The meltdown in Fukushima last year sparked a debate about the reliance on nuclear energy in France, which gets more than 75 percent of its electricity from nuclear power, the most in the world. In January, Autorité de sûreté nucléaire published a 524-page report on the state of nuclear reactors in France. The report says that government-controlled power provider EDF needs to make significant upgrades "as soon as possible" to its reactors in order to protect them from potential natural disasters. The ASN gave reactor operators until June 30 to deliver proposals meeting the enhanced safety standards of sites they run. ASN on June 28 published deadlines for measures including employing equipment such as diesel generators and bunkered control rooms, and guarding against flooding. EDF said it had "already initiated a plan of action" to comply with the requirements of the ASN.

An estimate by state-owned EDF that the measures will cost about 10 billion euros "is not improbable," Andre-Claude Lacoste, chairman of ASN told reporters. While safety must be "more robust," France's nuclear operators don't need to immediately shut sites, Lacoste said.

As well as thoroughly analysing external risks to nuclear facilities during planning and licensing, the operators of nuclear facilities "must be prepared to mitigate

events beyond anything ever considered likely".

Some 32 decisions were made on this

A 'rapid reaction force' of a different kind.

French regulators have come to the conclusion that "despite the precautions taken, accidents can never be excluded." But if accidents can never be excluded, despite all precautions, then adding even more precautions does not eliminate the possibility of catastrophic releases of radioactive materials into the surrounding environment. So prevention is only one half of the equation; the other half is coping with the consequences when things get truly out of hand.

What is needed is a large and powerful team of experts and decision-makers outside the nuclear establishment whose sole responsibility is to provide maximum protection to living things beyond the perimeters of the afflicted nuclear facilities. This team would be dominated not by nuclear physicists and engineers but by specialists in the biomedical and environmental sciences, including agriculture, marine biology, and food sciences. These people would have the determining voice in all matters relating to the population and the environment -such as evacuation strategies; food monitoring; crop and livestock protection and monitoring; measures to minimize the spread of contamination through shoes, hair and clothing; strategies for protecting wildlife; offsite disposition of contaminated water from the stricken facilities....

Just as war is too important a matter to leave to the generals, the Fukushima accident has made it clear that nuclear power is far too important to leave to the nuclear physicists and engineers. Society must take steps now to diversify its sources of information and expertise on matters related to nuclear energy. Otherwise we will see the same pattern of secrecy, duplicity, denial, and cover-up -that has characterized Tepco's behaviour vis-a-vis its Fukushima Daiichi nuclear reactors- repeated in any future nuclear disaster.

Gordon Edwards, CCNR, 29 June 2012

basis by ASN, translating into 30 new regulatory requirements across the entirety of French nuclear infrastructure. In general, what the ASN wants in nuclear facilities is a 'hard core' of systems at each facility that are "incredibly robust and will provide essential safety services

during even the most extreme circumstances."

Diesel generators for backup power have to be deployed between 2016 and the end of 2018 and bunkered control rooms and rapid response teams with specialized equipment by the end of 2014.

"No one can ever guarantee that a nuclear accident will never happen in France," Lacoste said. "We may need 10 years to completely understand what happened at Fukushima."

EDF is also to put in place a 'rapid reaction force' of experts and engineers that can be deployed on short notice to any of its power plants around the country. (see box) They should be capable of 'intervening' during an emergency that involves several reactors at one site. The force should be in place by the end of this year and fully operational by late 2014. The company must also bring in enhanced training of its key staff to respond to major earthquakes and severe accidents.

Presenting nearly 1,000 recommendations aimed at securing French reactors, ASN chief Jean-Christophe Niel - Executive Director for Operations of ASN said: "A lot of people think that Fukushima is behind us, in fact it's ahead of us."

Sources: Bloomberg, 28 June 2012 / GlobalPost, 29 June 2012 / World Nuclear News, 29 June 2012

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Nuclear power? No way!

Olkiluoto Blockade Camp 6th - 13th August 2012

Olkiluoto Blockade Camp in Eurajoki, western Finland, will bring together people from the anti-nuclear movements in Finland and internationally. The camp will be an opportunity to discuss nuclear power projects, including uranium mining, and to share experiences, skills and tools for struggles against the nuclear energy industry and for encouraging truly sustainable, decentralized forms of energy.

On August 11, Olkiluoto Blockade action day, people are invited to come and block the roads to the Olkiluoto nuclear power plant by civil disobedience. Year 2012 will mark the third annual blockade. Previous years have seen people blocking the roads using banners, drumming, performances and peaceful civil disobedience. You can join the demonstration in any way you like, with no obligation to participate in civil disobedience.

The Olkiluoto power plant consists of two reactors owned by Teollisuuden Voima (TVO). Additionally, TVO and French Areva are currently building a third reactor, which will be the world's largest and first EPR reactor. Despite the countless problems with the EPR's construction so far, the Finnish parliament has granted the company a license to build a fourth reactor at the site. Another pioneer project in Olkiluoto is Onkalo ("the Cave"), the world's first permanent underground storage for highly radioactive waste.

Nuclear power cannot solve the climate crises, but rather it feeds the economic system where short-term profit-making sacrifices common safety and environmental issues.

While many European countries are phasing out nuclear power after the disaster in Fukushima, the Finnish government is grasping the opportunity to increase nuclear power production in Finland. Join us in action and send a strong message to the state and the industries: you will not turn Finland into a nuclear power reservation! Uranium mining, nuclear power plants and waste disposal projects will be met with growing and determined resistance, on a local and international level.

Get more information, or give your ideas for the program at <http://olkiluotoblockade.info>

RWE abandoning nuclear power (well..., new construction).

RWE AG, Germany's second-biggest utility, is abandoning plans to build new nuclear power plants outside its home market, where the government decided last year to phase out nuclear power. "We will not invest in new nuclear power plants," incoming Chief Executive Peter Terium said. Like E.ON and peer EnBW, RWE had to close nuclear power plants after Fukushima and by the German government's decision to phase out nuclear power generation, which, actually was a turn back to the year 2000 phase out schedule. "We can no longer afford the financial risks and the surrounding conditions for nuclear power plants."

Meanwhile, RWE is one of the four German utilities that are going to the Federal Constitutional Court (Bundesverfassungsgericht) in order to get a 15 billion euro 'compensation' for the nuclear phase out. Remember: the same four utilities agreed to this phase out plan on June 14, 2000. The Court will examine the compensation claims in the coming weeks. Its decision is not expected until late 2013, after Germany's next federal parliamentary election. It will first consult with both houses of the German parliament as well as 63 other organizations, including Greenpeace and the Federation of German Industry (BDI). The constitutional court must then decide whether Germany's exit from nuclear energy violated the constitution before civil courts can rule on possible damages.

Deutsche Welle, 13 June 2012 / Reuters 17th June 2012

Siemens can return to nuclear in 2012, EC rules. The European Commission has closed an antitrust investigation of the arrangement that prevents Siemens from selling nuclear products and services, following its withdrawal from the Areva NP business. The Commission has accepted an agreement between the two companies to allow Siemens to sell core products and services later this year. In 2001, Areva and Siemens created the joint venture Areva NP and agreed on a specific non-compete obligation. This obligation was meant to apply for up to 11 years beyond the duration of the joint venture itself. The joint venture came to an end following Siemens' exit in 2009, when Areva acquired sole control over Areva NP. In December 2011, the European Commission expressed concerns that the non-compete obligation and a confidentiality clause may infringe EU antitrust rules. In response to the Commission's concerns, Siemens and Areva offered commitments. They agreed to limit the duration of the clause to three years following Areva's acquisition of sole control over Areva NP in relation to the joint venture's core products and services. They also agreed to remove it completely for all other products and services. The same commitments apply to the confidentiality clause.

Now, the European Commission has made these commitments legally-binding after market-testing them, and has closed its investigation. However, Siemens' next move is unclear, as it publicly announced in 2011 that it had pulled out of the nuclear market altogether.

Nuclear Engineering International News, 22 June 2012

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 (after two months) available through the WISE Amsterdam homepage: www.antenna.nl/wise.

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