

Collapsing Nuclear World

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Just after 13 months of Fukushima disaster, on 11 April this year, a massive undersea earthquake measuring 8.5 in the Richter scale off Indonesia made India nervous for fear of tsunami. There was nightmarish experience of 2004 tsunami disaster, in which 1.5 lakh people were killed in the region after a similar earthquake generated 30 feet high waves. And Kalpakkam nuclear power plant in Chennai coast was invaded by a few metre high wall of water. Luckily the power plant was not functioning at that time; it was kept shutdown, as a result, the country narrowly escaped a major nuclear disaster. But a number of people residing in nuclear workers housing complex, including a few plant workers were washed away.

Two important conditions for a major tsunami are an earthquake of above 7 magnitudes and a vertical movement of the fault line. This time the vertical movement that causes a large displacement of water in the sea was not there. With the massive earthquake in the same region last time that the scientists were astounded to find such a mega earthquake so soon. This is one of the real dangers which can lead to nuclear disaster, for which The People's Movement Against Nuclear Energy (PMANE) is opposing nuclear power plants at Kudankulam in Tamilnadu.

What happens even after 20 years of a nuclear disaster has been told by John Vidal, published in *The Guardian*, April 1, 2011, under the title 'Nuclear's green cheerleaders forget Chernobyl at our peril'.

"Five years ago I visited the still highly contaminated areas of Ukraine and the Belarus border where much of the radioactive plume from Chernobyl descended on 26 April 1986. ...It was grim. We went from hospital to hospital and from one contaminated village to another. We found deformed and genetically mutated babies in the wards; pitifully sick children in the homes; adolescents with stunted growth and dwarf torsos; fetuses without thighs or fingers and villagers who told us every member of their family was sick. ...we heard of many unusual clusters of people with rare bone cancers. One doctor, in tears told us that one in three pregnancies in some places were malformed and that she was overwhelmed by people with immune and endocrine system disorders.

Others said they still saw caesium and strontium in breast milk of mothers living far from the areas thought to be most affected, and significant radiation still in food chain. Villages testified that "the Chernobyl necklace"—thyroid cancer—was so common as to be unremarkable; many showed signs of accelerated ageing".

The Russian Academy of Medical Sciences declared in 2006 that 212,000 people had died as a direct consequence of Chernobyl. In 2009 a study was published in the annals of the New

York Academy of Sciences, *Chernobyl--consequences of the catastrophe for people and the environment*, written by three eminent scientists of Russia and Belarus- Alexey V Yablokov, Vassily B Nestarenko and Alexey V Nestarenko. Yablokov is a biologist and a member of the Russian academy of sciences. He worked as scientific adviser to the President Gorbachev at the time of Chernobyl. Vassily Nestarenko was a design engineer of the Soviet Union's mobile nuclear power plant "Pamir" and held the post of director of Belarussian Nuclear Centre. After Chernobyl disaster leaving career he devoted his life to the protection of humankind from Chernobyl radioactive danger. Suffering from Chernobyl radioactivity he died in 2008. His son, Alexey Nestarenko is a biologist and the director of a research centre BELRAD. After going through 5000 research papers and health studies they have concluded that 985,000 thousand persons have died world over between 1986 and 2004 due to Chernobyl radiation.

But in a recent article ex-President of India Abul Kalam Azad had stated that only 57 persons died in Chernobyl accident. This noted nuclear hawk definitely referred the UN's scientific Committee on the effects of Atomic Radiation study which had severely underestimated the toll figure and came to the conclusion that 57 direct death and 4,000 cancers are expected. Ex-President even reduced the estimate by not mentioning "4000 cancers are expected". Similarly last year in the month of March when earthquake and tsunami stricken Fukushima nuclear power plants were blowing off one after another and the nuclear world was shivering, India's ABC (Atomic Energy Commission) Chairman Srikumar Banerjee told that nothing serious but a chemical reaction happened in Fukushima. Fukushima is potentially worse than Chernobyl. Here multiple reactor catastrophe is happening within 150 miles of a metropolis of 3 crore people. People are made fool and confused by these scientists and technocrats. In return to their governmental duties they enjoy fat salary, top government posts, other privileges and prizes. They say nuclear radiation is nothing, there is no immediate danger, and people are already living in a radioactive environment. Here again one must remember Alexey Yablokov, who advised; "When you hear 'no immediate danger' (from nuclear radiation) then you should run as far and as fast as you can". A few years ago American journalist Upton Sinclair nicely expressed why these persons of repute say so—it is difficult to get a man to understand something when his salary depends upon his not understanding it.

Nobody can rule out possibility of accident in a nuclear reactor. That is why no company offers insurance for them. That is why there are serious objections about the nuclear liability provisions and the compensation to be paid in case of an accident. When Fukushima disaster happened, radioactive Iodine-131 which causes thyroid cancer was found in tap water supplied in Tokyo, 240 km away from Fukushima. Another highly radioactive isotope Cesium-137, released by the Fukushima plant has been found at several locations in the US which is thousands of kilometres away from Japan. So in case of a catastrophic accident these isotopes can easily reach not only many other states of the country, it may easily reach neighbouring countries.

Apart from the risks of accidents which make thousands of square kilometres of land unclutivable and uninhabitable for decades after decades, there are unresolved problems of storage of spent fuel, radioactive waste, chances of fanatic extremist attack on nuclear plants and other serious issues. Nuclear plants and materials are so vulnerable to extremists' attack that under the US President Obama's personal initiative an international summit for nuclear safety was held in 2010 in Washington to plan how to cope up with the threat. In the last March the second nuclear safety summit of over 50 countries was held in Seoul, South Korea, discussing what is to be done to keep nuclear materials, plants safe, so that extremists and fundamentalists can't get control of neither the plants nor fissionable or radioactive materials.

Even in the routine normal operation nuclear power plants release considerable quantities of radioactive isotopes into the environment. In its January issue *The International Journal on Cancer* published a new epidemiological study performed in France, which established a very clear correlation between the frequency of acute childhood leukemia and the proximity to nuclear power stations. The study is named "Childhood Leukemia around French nuclear power plants-the Geocap study, 2002-2007". Conducted by a team comprising experts from the Institut National de la Sanie et de la Recherche Medicare (INSERM), Institut de Radioprotection et de Surete Nueieaire (IRSN), and the National Child Cancer Registry of the Hospital of Villejuif the study demonstrated that in France the occurrence of childhood leukemia was more than doubled during 2002 to 2007. The increase is up to 2.2% for children under 5 years. The nationwide study included 2753 child leukemia cases diagnosed between the observed period and a control group of 30000.

This study confirmed the results of an earlier German study conducted in 2008 by the Cancer Registry in Mainz (KiKK-Study Dec 2007) in which it was demonstrated that the incidence of leukemia among children below 5 years living within 5 kilometres radius of nuclear power plants is more than double compared to children living 20 kilometres further from the plant.

In India unofficial studies and health surveys around areas near uranium mining site at Jadugoda (Jharkhand) and nuclear power plants at Rawatbhata (Rajasthan), and Kalpakkam (Tamil-nadu) have demonstrated that the incidence of cancers, congenital deformities, respiratory trouble and other diseases are higher than in areas away from nuclear facilities. The governmental organisation never conducted any study on nuclear radiation. And the government simply denies any positive relation found between nuclear radiation and illness or death. Nor does the government initiate or encourage any independent study.

Ironically world nuclear capacity remained around 370 Giga watts (GWe) for about 15 years. In 1998 world's capacity was 367.6 GWe and in early 2011 it was 375 GWe. Some of the old reactors are being closed and some new started functioning. The growth the industry enjoyed worldwide in the eighties and nineties is completely lost (The cost of nuclear power has become so high that it hinders its expansion-according to energy expert Amory B Lovins). Rather nuclear capacity presently decreased to 320 GWe in 2012. 49 GWe Japanese nuclear

capacities are sitting idle as a result of plants' mandatory stress test after Fukushima and tremendous public opposition against restarting of the plants. These 54 reactors had generated above 30% of their electricity till recently. The last one having shut on 5 May this year. While Japan planned to generate 50% of their electricity from nuclear, they had become nuclear free as a result of public opposition after Fukushima.

And 8 plants in Germany have been declared closed after Fukushima. The shocked German public forced Chancellor Merkel either to phase out nuclear or to phase out herself. When the government took eight reactors offline it was surprising to some people that they did not have blackouts or price spikes. It cost a bit, but it also stimulated growth in renewable energy and Germany now has 300,000 jobs in renewable energy sector compared to 30,000 in nuclear.

On 5 April huge smoke came out of unit 2 of Penly nuclear power station in France. It had an emergency shutdown and fire fighters were called in to put out two fires of oil that had spilled from primary cooling pump. In the evening the operator realised that cooling water was leaking. Damaged joint of the pump was corrected by 4 o'clock, next morning. The event sent a shiver down the spine of the television viewer of France. They realised that something can go wrong anytime at any of the 58 reactors of the country. Hundreds of significant events occur each year in the nuclear power stations of France. Even then nuclear power provides 75% of the country's electricity.

Now the French nuclear industry is in bad shape. Areva, the biggest nuclear builder has reported a \$2.4 billion loss in 2011. Its share value has plunged by 75% since 2007. Share value of the Electricite de France (EDF), the largest nuclear utility in the world has crashed to 78% during the same period and it has a debt burden of \$33 billion. Presently the nuclear issue is playing a significant role in the election campaign that will determine a new president on 6 May. Public opinion polls showed Sarkozy, nuclear industry's most prominent salesman, has only a slim chance of being reelected. Various polls indicate three-quarters of the population are now in favour of nuclear phase out almost like that what is happening in Japan. The most likely next president Francois Hollande vowed to cut one-third of the reactors by 2025.

[Meanwhile, the victory of socialist candidate Francois Hollande in the second and final round of the presidential poll on May 6, dislodging Nicolas Sarkozy, was confirmed. The article was written before the French election.]

Negawatt movement ('Negawatt'—named by Amory B Lovins, is an idea which says, in lieu of producing megawatts we can save good amount of electricity so that extra megawatts are not needed) has started having a considerable impact in France. Hollande supports the movement. This is important in a country where wastage of electricity is enormous. Mycle Schneider reported in the *Japan Times* in April that one of the reasons of wastage in France is irrational policy incentives which have pushed electric space heating into one-third of existing and three-quarters of new homes. As a result of that every degree Celsius drop in temperature increases capacity needs by 2300 MWe. Thus when freezing weather hit Europe in early February, neighbours of France supplied up to 13,000 MWe to save the French grid from collapsing. Out

of that 3000 MWe came from Germany, the country which had shut down 8 of the 17 reactors after Fukushima.

From 2008 to 2010 construction work began for 38 reactors in the World. But in 2011-12, there were only two construction sites working. Some European countries are determined to phase out existing nuclear plants, especially after the Fukushima. Germany, Switzerland and Italy and Austria are trying to shed their nuclear burden. In an Ipsos Mori poll conducted in June 2011, 62% of citizens in 24 countries said they were opposed to nuclear power. Only India (39% of Indian people opposed nuclear power production) Poland and the US had majorities supporting nuclear power, with the UK evenly split. China, Russia and France clearly opposed and Germany very strongly opposed. Several other polls by Ipsos Mori, BBC and others consistently showed similar trend in the public opinion of the world. In the UK, strong opposition to nuclear power has soared since the Fukushima disaster, according to a recent Guardian/ICM poll. In early 2010, 39% of people said they would be strongly opposed to a new nuclear power station being built near their home but in February 2012 that opinion rose to 61 percent.

Before Fukushima, the Chinese government had plans to add 40 GW of nuclear power by 2020. But construction plans in several provinces were plagued with protests about safety and lack of consultation. Jiang Kejun, a director of the Energy Research Institute in Beijing, said to *The Guardian* that, "Globally, I think Fukushima could be a good thing for nuclear power. We can learn a lot from that. We can't be smug or too clever."

In this situation different states are desperately trying to save nuclear industry from natural death due to a variety of interests. One of the main interests is that nuclear weapons endeavour could go on under the disguise of nuclear power, because the technology is the same and the cost of both could stay intermixed. Thus energy has become a pretext for amassing huge quantities of plutonium. The 'Nuclear Club' members have relaxed their stipulations on civil nuclear facilities of India where DAE gets enormous political patronage because nuclear industry produces plutonium which is required for making nuclear weapons. Developed country leaders work as hawkers of their nuclear technology and material seller companies. The leaders get huge donations for election fund at least in the US and Japan. For example, in the last US election campaign, 2008, Exelon Corporation was one of the largest campaign contributors of Barack Obama. That is like largest nuclear power producing company in the US, having 11 nuclear power plants in Illinois.

On the other hand world solar photovoltaic capacity reached to 67 GWe in December 2011, increasing 27.7 GWe in a single year. Wind power capacity reached to 238 GWe, increasing about 44 GWe in a year. Wind power has become competitive with coal fed power production and cost of solar power is steadily decreasing. Solar industry claims that it has already become competitive with nuclear power.

For one thing India has a renewable energy capacity of 20 GWe of which 16 GWe is wind power. According to a recent study by an Indian origin scientist of Lawrence Berkley National

Laboratory, the potential for on-shore wind energy deployment in India is considerably higher than official estimates- around 20 times and up to 30 times greater than the present government estimate of 102 GWe. This means India can have more than 2,000 GWe capacity from wind power.

On grid and off grid solar PV opportunities in India are huge, as 40 crore people do not have access to grid connected electricity and 300 days in a year are sunny days. When the cost involved in off grid applications are compared to huge financial investments to be made to set up grids off grid opportunities become significant. Of course the government has approved the Jawaharlal Nehru National Mission aimed at generating 20 GWe by 2022. National Solar Mission has plans to generate 1000 MWe of solar power by 2013. Presently India is producing only 413 MWe. Surely target can be enhanced. Solar power alone is more than sufficient to feed electricity for the whole country.

According to the government, India is expected to be the second largest contributor in global energy demand by 2035. It accounts to 18% of the rise. Given the country's growing energy demands the government has ambitious plans to expand its renewable and nuclear power industries. Definitely India has learnt no lesson from Chernobyl or Fukushima. DAE has not yet publicly divulged its plans to store radioactive wastes. Track record of operation and maintenance of reactors is bad. Hundreds of incidents and accidents have happened in Indian reactors which were covered by a veil of secrecy. AERB (Atomic Energy Regulatory Board) continues to function as a sister concern of the ABC. The 3 safety audits of existing plants conducted by the AERB in '79, '86 and '95 which pointed out serious problems with the existing plants have become classified matter. Despite the Prime Minister's assurance immediately after the Fukushima catastrophe that the AERB will be made an independent organisation, nothing has really happened.

So far, after five and a half decades of efforts India's nuclear establishment has been able to build a capacity of 4780 MWe with the 20 reactors. There are 7 reactors under construction and planned for another 16 having capacity of 14,300 MWe by 2025 with the Russian, French, and US reactors. The Indo-US Nuclear Deal of 2008 paved the way for different countries to sell their reactors, technology and materials to India. The Government of India (GOI) planned to increase its nuclear power capacity to 9% by 2035 (presently producing just.3.7%). GOI is desperate for a giant leap. It has planned to establish reactors all over the country - at Haripur in West Bengal, Kudankulam in Tamilnadu, Jaitapur in Maharashtra, Fatehabad in Haryana, Mithi Viridi in Gujarat and Kovada in Andhra Pradesh, etc., along with more plants at the existing nuclear facilities.

The Indian nuclear establishment claims that reactors here are 100% safe, they have several safety mechanisms with the latest technical sophistications. The Japanese authorities also made strong claims of safety measures until Fukushima catastrophe happened. Exactly similar was the claims of the USSR authority before the disaster at Chernobyl. The Fishermen accuses that routine discharges of hot low radioactive water from nuclear power plants into the sea

increases temperature of water by a few degree Celsius and causes drastic reduction of marine organisms and fish in wide areas. But the nuclear authority denies that.

Scientists, outside the DAE organisations and others have been warning against the dangers of the nuclear power and the irrevocable consequences it would cause to the environment and future generations. Scientists are also pointing out that there are numerous other options, less expensive and safer like wind and solar power for generating electricity. They urge that government should heavily invest on semiconductor research so that one gets privilege in solar power production. They say it should have been started a few decades earlier. Then by present time India could have led the world and get the lions share of the world solar business.

Many scientists in India lament, while lakhs or crores of rupees of budgets for different departments are easily passed in their scientific institutions, in many cases the authorities are not very keen to pass only a few thousands of rupees budget for purchasing furnitures etc. This happens because when the budget is less, cut money amount becomes less. In case of purchasing reactors thousand crore rupees are involved. So it is not quite unexpected that underhand deal is there. Instances are there in other countries. In November '10 an influential Chinese Communist Party Central Committee and its anti-corruption cell member Kang Rexin was arrested and is languishing in the jail for taking one million dollar bribe from the French company Areva for setting up two nuclear power plants. So pressure is immense to set up more and more nuclear power plants.

Now all over India people are protesting peacefully against nuclear power plants. Following vigorous protests for a few years West Bengal government dropped plans in 2011 to establish six Russian reactors at Haripur in East Midnapore.

At Jaitapur in Ratnagiri district of Maharashtra, mass protests against setting up reactors started in late 2010. That led to police firing, one death, injuries to many and thousands of arrests. A national anti-nuclear protest rally planned to reach Jaitapur in late March '11 in solidarity with the movement was not allowed to reach there. And Maharashtra police detained more than one hundred activists, including two ex-Justices of Bombay High Court and an ex-Navy Admiral at Tarapur till midnight. They threatened the drivers of the buses which carried the protestors, in such a way that they fled leaving the activists there. Even after that, wherever the protestors assembled and rallied police obstructed and arrested the activists.

The government has planned to import six EPRs (European Pressurised Reactors) having total 10000 MW capacities for Jatipaur. The total project will cost Rs 2 lakh crores which makes it extremely expensive. In the absence of any transparency in these deals question arises that is it being done for the benefit of foreign reactor manufacturing companies at the behest of their governments?

In Fathehabad, Haryana local farmers are agitating continuously for about two years near the mini-state secretariat. Regular meetings and rallies are being held there. Almost all major farmers' organisations and opposition parties lend their support to farmers against nuclear

power. Land acquisition by the governments getting lukewarm response. In Kovada, Andhrapradesh people started agitating against proposed nuclear power plants, Ex-AERB (Atomic Energy Regulatory Board) chief A R Gopalkrishnan along with anti-nuclear activist Surendra Gadekar attended protest meetings there.

KUDANKULAM MOVEMENT

A massive anti-nuclear protest movement under the leadership of PMANE, is going on for the last 10 months against Kudankulam nuclear power plants in Tamilnadu. This Russian project was shelved after the Soviet Union collapsed and taken up again in 1997. The Indian government alongwith the Russians are constructing two 1000 Mwe reactors there. As the Kudankulam nuclear power plant (KKNPP), in Radhapuram taluk of Tirunelveli district, is nearing completion the movement became intense. They were carrying out hunger strikes, rallies, public meetings and other demonstrations in Tirunelveli, Kanyakumari, Thootukudi, Ramnathapuram and other districts. Work on the two reactors at Kudankulam was delayed for six months due to protests. The Prime Minister made false allegations of foreign funding without citing even remotely credible evidence, against the people's movement to discredit it and to lay grounds for repression. Ultimately Tamilnadu government succumbed to the central government pressure. In September last year Chief Minister Jayalalitha had assured that her government would not allow work to be resumed till the public fears on KKNPP are allayed and passed a cabinet resolution to that effect. But on 19 March this year Jayalalitha declared her support for the nuclear power project.

Astonishingly NPCIL (Nuclear Power Corporation of India Limited) has not even complied with the AERB's (Atomic Energy Regulatory Board) condition that the plants should have a secure source of fresh water and storage for 60 days is required for cooling the fuel rods. An expert committee had expressed a number of concerns-the sitting of the plant on fragile limestone bedrock, establishing the plants nearby of which a huge tsunami wave struck in 2004, and the site has a record of seismic activity, there are villages and a colony recently established for rehabilitating the tsunami victims situated nearby the plants. The colony about 500 metres away from the plant, a cluster of 450 houses was built by a catholic NGO CASA. The site was chosen by the district collector in 2006. He perhaps nursed the sentiment of the protestors and thought that project would be abandoned. The project was given environmental approval without considering these issues. The government did not respond to these concerns, rather, secretly signed in with the Russian government, probably exempting them from liability in case of catastrophe.

Tamilnadu government restarted operation Kudankulam on 19 March. The police action started immediately after the Sankarankovil by-elections. Five thousand police personnel, including an ADGP, were deployed with the task to arrest leaders Dr S P Udaykumar, V Pushparayan and others. They arrested more than two hundred protestors and blocked all entry points surrounding the nuclear power plants and the way to the protest site at Idinthakarai. Fifteen protestors including Udaykumar and Pushparayan and seven women went on an

indefinite hunger strike. They demanded immediate withdrawal of the cases filed against the protestors, withdrawal of prohibitory orders in Radhapuram taluk. Other demands are release of all those arrested for organising protests, training for people in disaster management, explanation to local people on how safely nuclear waste would be disposed of etc. About seven thousand men, women and children gathered at the S Lourdes churchyard at Idinthakarai. They made it clear that only after arresting each of them, they would allow leaders to be arrested, So police had no other way but to retreat.

To terrorise the leaders and avenge their inability to arrest them, a school in Nagercoil owned by Udaykumar and managed by his wife Meera, was ransacked, its compound with demolished, library, furniture destroyed. On the other hand police had cut power supply and restricted movement of essential goods and people to Idinthakarai. Idinthakarai is completely dependent on outside sources for drinking water, medical care and fuel. Each day normally about 50 tanker loads of water are purchased. No water tanker could enter there for a couple of days. The fishermen used fishing boats to bring food, water and people to the protest grounds. The Coast Guard and Navy used helicopters for surveillance in the area round the clock. On 20th and 21st March news media like NDTV, Headlines Today, Puthiya Thalaimurai were prevented to enter the site.

Show of force and embargo on essential commodities were the means to crash the movement and teach people a lesson for protesting against government decision. Public pressure and constitution of a Fact Finding Team resulted in easing the situation. But even after restoration of essential supplies, movement of people from village to outside world remained restricted as villagers felt 'if they go outside they will be arrested'.

On 19th March more than 200 people were arrested. The Fact Finding Team later observed that, just between 10 September and 23 December, 2011 the police had filed 107 FIRs against 55,795 people and "others". But out of that 6,800 people have been charged with "sedition" and/or "waging war against the state". This is probably the largest number of cases filed in India in a single police station in such a short period. The police had arrested hundreds of peaceful and non-violent protestors and registered cases under every conceivable section of law, including Naxalism. Very recently they have filed "attempt to murder" cases against Udaykumar, Pushparayan and other leaders to malign movement and its leaders.

The police forced fishermen to put out their boats to resume fishing activities. Similarly they threatened shopkeepers so that shops are kept open. But nobody obliged. On the other hand fishermen of the surrounding villages stopped their fishing activities in protest of resumption of work at the KNPP. The Fact Finding Team found that women in clusters were busy rolling bidis as their men stopped fishing. One woman can earn Rs 60 by rolling 1000 bidis. This meagre income kept them going. On the first day of the Team's visit they witnessed a group of fishermen from Chinna Mruttam of Kanyakumari district who came and joined relay fasting for one day. The next day before leaving Idinthakarai they gave Rs 125,000 as contribution for the movement.

The determination and zeal of thousands of people, including children, who are staying at the rotating hunger strike site all the time at the St Lourdes Church, Idinthakarai is astonishing. They have understood how hot water discharges from Tarapur (Maharashtra) and Kalpakkam nuclear plants affect marine life and the livelihood of fishermen. They keep on surrounding the struggle leaders so that police did not arrest them. Indefinite fasting of the leaders was withdrawn for sometime.

In late April uranium fuel was loaded in unit 1 of the KKNPP, PMANE protested. Earlier Udaykumar sought for safety analysis report and site evaluation report of KKNPP through Right To Information (RTI) application. But the NPCIL refused to provide the same. The information sought was denied on the ground that it was "classified". Now the Central Information Commission agreed with Udaykumar's contention that terming a record as classified has not been stipulated as an exemption under RTI law. Similar information is disclosed on the government websites in the US, UK and Canada. Denial of such information would amount to treating Indian citizens differently. The Commission has now asked the government to release safety analysis report of KKNPP excepting information of strategic importance.

Now from 1st May Udaykumar and 24 others of PMANE have again started indefinite fasting demanding the ongoing work at the KKNPP must be halted unless the following steps are taken :

- The safety Analysis Report and the Site Evaluation Report must be released to the public immediately. And the full and final post- Fukushima safety audit report must also be released to the press and the public.
- A new and comprehensive Environmental impact assessment (EIA) report must be commissioned.
- The opinions and preferences of the project-affected people must be heard by a competent authority in an open and democratic manner,

An independent national committee must be constituted to study the geology, hydrology, oceanography and seismology of the plant area.

- Disaster management training and evacuation exercises must be conducted in the 30 km radius of the KKNPP and beyond.
- A resolution must be passed at the Tamil Nadu State Assembly that the Pecheparai dam water from Kanyakumari District and the Tamirabharani river water of Tirunelveli and Thoothukudi Districts will not be taken for KKNPP.
- A copy of the Inter-Governmental Agreement (IGA) on liability signed between the governments of India and Russia must be made public.
- Information on nuclear waste that would be produced at the nuclear plants and its management must be made public.

– All the false cases against the protestors must be unconditionally withdrawn.

They demand a written agreement with a definite action plan and clear timeline. The indefinite hunger strike has been broadened and strengthened on May 4 with the participation of more than 300 women from neighbouring villages.

This is a historically important and prolonged fight between the ordinary citizens of India and the government. The struggle in this phase is going on for 10 months and the morale of the people is very high. This struggle and the others going on in other states give them hope. This is a test case of democracy and human rights. In the long run it may turn the country back from the path of nuclear fascism. That is why the Kudankulam movement has become crucial and decisive in the war against the nuclear empire. They are desperate and the situation is critical. Instead of intimidating and harassing the protestors the state should start dialogue with them on the issues concerning nuclear safety.□□□