

Technology To Decommission Fukushima Needs To Be Invented

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Anyone with a brain could have told you back in 2011 at the time of the Fukushima nuclear triple meltdown that Tokyo Electric (Tepco) was lying about the true condition of the Fukushima Nuclear Power Plant No. 1 (“Dai-ichi”). Four years later, Tepco officials have finally admitted that it may not be technologically possible to decommission the plant.

The long history of the criminal insanity and negligence of the nuclear industry is revealed in our book, [Fukushima: Dispossession or Denuclearization?](#) (edited by Nadesan, Boys, McKillop & Wilcox) which was published last year, and includes detailed chapters from a number of writers who document the nuclear crimes.

In the case of Tepco (Tipkill), the facts are overwhelming that not only was Fukushima an “accident waiting to happen” but rather “a foregone conclusion.” The location of the plant on soft fill soil at a low altitude near the ocean in a tsunami zone was the first big mistake of the planners, who must have graduated from the Homer Simpson school of donutology. Cost-cutting, corruption and incompetence is part of the well-documented history, which ultimately led to the triple meltdowns.

Will the destroyed reactors ultimately need to be buried in a sarcophagus as has been done with Chernobyl which now has the world’s largest moveable “building” covering it (at no small expense)? One big problem — Chernobyl was just one reactor and rests on rock-solid ground, so the radiation can’t go too far downward. At Fukushima the reactors rest on a mushy place next to the ocean which is also atop an underground aquifer/river deep below it. It is theoretically possible that the radiation could leak into that aquifer and reach Tokyo someday.

If they have to build a sarcophagus it will be Mission Impossible since the shielding would have to be underground as well. Nuclear engineer, Arnie Gunderson proposed this as the only solution and noted a complicated underground piping system would have to be installed to process the leaking radiation before it escapes to the ocean. He also said it may take 500 years to decommission Fukushima.

Now, some of the big-wigs at Tepco have admitted it may be impossible to decommission Fukushima due to the technical hurdles, namely, that retrieving the melted fuel is going to take years to accomplish since the technology does not yet exist (1; 2). Decommissioning Fukushima will involve a great deal of time and money, but also intelligent coordination of R&D, which has thus far not been the path. Bureaucracies, as everyone knows, do just the

opposite, they wallow in inefficiency. Maybe Japan needs a strong and benevolent dictator.

One of the main technical problems with retrieving the melted fuel is that it must constantly be cooled in water, but the containers are full of holes and leaks. However, as our friend Nancy Foust of the *Simply Info* website points out, “the International Research Institute for Nuclear Decommissioning (IRID) already includes a ‘no water’ option in their rough planning. If that is the route they will have to go then they will need to put all their effort into that research” (personal communication, April, 2015).

Focusing effort into the right research is good advice, however IRID also made the dubious claim that the fuel could be retrieved within ten years which contradicts the pessimism of other officials and draws into question IRID credibility. Somebody ought to get the story straight.

The level of BS at Fukushima is almost as deep as how far the fuel may have melted underground. One scenario from the International Atomic Energy Agency (IAEA) describes the melted fuel in a state whereby it “erodes sideways.... The final size of the pooling maximum case is 10 to 15 meters in diameter, and 6-7 meters deep- or even deeper” (3).

Fukushima Diary reports that “Tepco and the government of Japan have been saying though molten fuel had a core-concrete reaction in [the] pedestal, but [has] stopped sinking in the concrete.” Now Tepco is starting to admit the fuel may be “outside of [the] pedestal, Tepco needs to investigate the sub-basement floor of Reactor 1. It is reported that the feasibility of inspection would be confirmed in the end of 2015” (4). Maybe they are now getting ready to admit it is indeed outside the concrete floor.

Foust told me that the location of the fuel could have been determined back in 2012 using “muon” cosmic ray scanners. Apparently this was not done because Homer Simpson, who is in charge of Fukushima decommissioning, spent the funds on donuts.

Seriously, not only is this a kind of gross incompetence (which is reminiscent of the way nuclear operations have been carried out throughout most of the world since the technology was adopted) but also appears to be a blatant political cover-up. Prime Minister Shinzo Abe and the Liberal Democratic Party (LDP) want to keep news of the actual location of the fuel secret until after they have restarted a number of the currently idled reactors in Japan. Politicians lie, governments lie, corporations are amoral killing machines. Abe even admitted he lied to the Olympic committee in order to get the 2020 Olympics bid when he told them “everything is under control” at Fukushima.

Could it be these admissions by Tepco of the dire situation are part of a psychological conditioning to get more money out of the government? One should never take statements from powerful individuals or governments/corporations at face value. On the other hand, the new chief of decommissioning, Mr. Masuda, may be a more honest and intelligent engineer and sincere about getting at the problem.

Foust provides us with a useful overview and summary of the sorry situation:

At some point the true state of Daiichi will have to be made public. The true state must be known and understood in order to do the needed research towards whatever resolution is determined to be the end goal. Right now that is fuel retrieval so the buildings could eventually be torn down. The muon scans are a step in that direction. They can use those to establish if any fuel is

left in the reactors or not. If you remember back to 2011 TEPCO was insisting that most of the fuel was still in the reactor vessels. As more data is completed TEPCO is forced to admit reality.

The next step after the muon scans for units 1-3 is to put the Hitachi shape changing robot into containment. If that goes as planned it will tell them where the fuel is, or isn't. That is going to be the huge bit of data. Once the fuel is located and disclosed the extent of the meltdowns will have to be admitted. IMHO this is why LDP is so intent on getting reactors restarted right now.

What is problematic in all of this is that TEPCO is still involved. Because TEPCO is involved and also ultimately responsible for the bill for the entire mess, it is a conflict of interest. They want to deal with the problem but as cheaply as possible. You can't have a challenge of international proportion and a self serving company who only cares about profits. TEPCO has a documented habit of taking concepts put forth by contractors or outside researchers then trying to do them on the cheap. Then the project doesn't perform as planned and the money is wasted. The holding ponds are a perfect example of that.

Some of these efforts really are experiments. Nobody has tried these things before in this context. So it should be expected that some things won't work as hoped right out of the box, some might need adjustments. But when you add TEPCO cost cutting to that challenge is becomes very problematic.

As far as the condition of the reactors. We had a pretty good idea in 2011 about what took place in the three melted down units. TEPCO won't admit the possibility of something until there is no denying it so it is a slow process of enough evidence that some facet can no longer be ignored.

I must remind readers that alternative energy is viable, it is here and now. Even *Forbes* magazine published an article by the world's leading alternative energy expert, Amory Lovins, proving irrefutably that Japan could be a rich source for solar and wind power which could significantly diminish the need for carbon let alone nuclear energy sources.

Ultimately nuclear power is rooted in the liberal ideology of unleashing nature's potential as an inevitable process of human development. However, as Russia's leading political philosopher, Alexander Dugin points out, "liberalism" in its truest form leads to the ultimate destruction of humanity: by replacing traditions with corporate hegemony; by replacing nature with artificial reality; and by replacing humans with robots (transhumanism) (5).

It could be argued that the wind and sun are natural sources of energy in keeping with his conservative ideology. In that sense, Dugin states correctly:

If you are in favor of global liberal hegemony, you are the enemy.

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