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Sat [Meltdown Updates: Fukushima/Los Alamos July 2, 2011](#)

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Fukushima Update: Saturday, July 2, 2011

by Nelle

At NHK this morning, some good news for a change. The heat exchanger system installed on the Unit 3 SFP (spent fuel pool) has successfully lowered the temperature in the pool to 40°C in 3 days.

The a similar system for SFP at Unit 2 has is also working to reduce temperature. So that means only Units 1 and 4 SFP's still require injections (or spraying) of cooling water. This means the amount of highly contaminated water being produced by the cooling is declining. Although there is no plan yet for how to install a cooling system in Unit 4.

"TEPCO: Nuclear fuel pool cooled to stable level - http://www3.nhk.or.jp/daily/english/02_12.html

The operator of the crippled Fukushima Daiichi nuclear plant has reported progress in its work to stabilize the facility's spent fuel rods.

Tokyo Electric Power Company says the cooling system that began operating at the No.3 reactor on Thursday has brought the temperature of the nuclear fuel storage pool of the reactor to just below 40 degrees Celsius from the previous level of 62 degrees.

TEPCO says the temperature of the pool was 39.9 degrees as of 5 AM on Saturday.

As cooling has progressed faster than initially expected, TEPCO says the temperature will likely stabilize at around 30 degrees in a few days. The temperature of the spent fuel pool of the No.2 reactor has already declined to that level.

As for the No.1 and No.4 reactors, the utility plans to begin operating cooling systems by the end of this month. Until then, the company needs to inject cooling water on a regular basis.

TEPCO is concerned about possible difficulty in installing the cooling system at the No.4 reactor. A hydrogen explosion in March damaged piping necessary for the system and debris left there is hampering construction work.

The company says there may be a delay in its installation plan.
Saturday, July 02, 2011 13:22 +0900 (JST)"

Contamination measurement results are not so heartening. Although the story says paved roads and parking lots have lower levels of contamination since the rain tends to the radiation away, they do not point out that the "washed away" radiation will go into ditches and/or storm drains and ultimately into groundwater or to the sea. The amounts listed are microSv per hour, but no calculations of exposure levels on an annual basis are given.

"Higher radiation detected on fields than asphalt
http://www3.nhk.or.jp/daily/english/02_09.html

A government survey has found higher levels of radiation on fields and forests than on asphalt pavements in towns about 10 kilometers from the Fukushima Daiichi nuclear plant.

The Cabinet Office and the ministry of science monitored radiation for more than 10 days from June 13th at 400 locations in Namie and Tomioka towns, which fall within a 20-kilometer no-entry zone.

The survey centered on JR Namie station, about 8 kilometers from the plant, and JR Tomioka station, about 10 kilometers from the plant. Measurements were made at one centimeter and one meter above the ground.

The highest level in Tomioka was detected on an unpaved road 2 kilometers northwest of the station, where the reading at the one-centimeter point was 39.1 microsieverts per hour.

In Namie Town, 25.4 microsieverts was detected at the one-centimeter point in a forest about one kilometer west of the station.

Readings were generally lower -- around several microsieverts -- on roads and parking lots covered by asphalt and higher on fields and forests.

Radioactive substances are believed to be easily washed away by rain on asphalt but adhere to soil and plants.

The government plans to monitor radiation at more than 3,400 locations in no-entry zones and evacuation advisory zones by the end of August. Measurements will be taken at gardens of private homes and roof gutters, where radiation tends to be high, as well as roadside ditches.
Saturday, July 02, 2011 11:05 +0900 (JST)"

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EnergyNews reports on a story in the Japanese press from a leading cancer expert in Japan. Here is the English summary from the Asia Pacific Journal site of the original Japanese-language story. The summary contains many links to other stories at the site. This is a very damning report.

"Japanese Cancer Expert on the Fukushima Situation
<http://japanfocus.org/events/view/100>
 Jul. 01, 2011
 By Matthew Penney

Japan's leading business journal Toyo Keizai has published an article by Hokkaido Cancer Center director Nishio Masamichi, a radiation treatment specialist. The piece, entitled "The Problem of Radiation Exposure Countermeasures for the Fukushima Nuclear Accident: Concerns for the Present Situation", was published on June 27 and is consistent with the critical coverage of the Fukushima crisis that has appeared in independent weekly magazines, notably Shukan Kinyobi, which have taken a strong anti-nuclear stance since the March 11 earthquake-tsunami-meltdown, and have repeatedly focused on the dangers of radiation exposure while calling for far-reaching measures to protect those at risk.

Nishio begins by asserting that the Fukushima crisis has caused Japan's "myth of nuclear safety" to crumble. He has "grave concern" for the public health effects of the ongoing radiation leak.

Nishio originally called for "calm" in the days after the accident. Now, he argues, that as the gravity of the situation at the plant has become more clear, the specter of long-term radiation exposure must be reckoned with.

Lamenting the poor state of public knowledge of radiation, Nishio writes, "Japan, with its history of having suffered radiation exposure from the atomic bombs, should have the most [direct] knowledge of radiation, but in fact, in the approach to the nuclear accident, has simply fallen into confusion." He places blame on a number of groups:

1. TEPCO executives, who he accuses of having hidden the truth and prioritized the survival of the company over public health.
2. Bureaucrats who were unable to put together an accurate body of information about radiation effects from which to formulate policy.
3. A prime minister and cabinet lacking both leadership and an appropriate sense of urgency.
4. Politicians who sought to use the crisis in intra- or inter-party struggles.
5. Nuclear industry lobbyists and "academic flunkies" (goyo gakusha) of the government who built up the myth of nuclear safety in the first place.

Looking at these groups, he writes, "I just cannot feel any hope for Japan's future. These circumstances are simply tragic."

He leaves the press out of his main list of culprits, but points to the poor state of scientific knowledge among journalists as a major factor behind what he views as their inability to bring essential information to the public in a timely manner. He also accuses the media establishment of prioritizing "avoiding a panic" over "communicating the truth".

Nishio provides a blunt and hard-hitting specialist perspective on major government decisions. Here is a summary of some of his major points:

Workers:

1. He accuses the authorities of prioritizing their own convenience over the lives of nuclear workers. Nishio argues that raising the exposure limit from 100 mSv to 250 mSv can have serious health effects. He also states that reports of poor food and sleeping conditions for workers show that "S they are not even being treated like human beings."
2. The JSDF helicopters that dropped water on the Fukushima Daiichi reactors and spent fuel pools in the days after March 11 were outfitted with the types of radiation shields used in hospital x-ray rooms. Nishio says that this was akin to "putting on a lead helmet in order to protect yourself from radiation from space". The planners, he argues, did not even understand the difference between airborne radiation from a nuclear accident and radiation used in the controlled environment of hospital treatment.
3. Referring to "protective" suits is a misnomer bordering on fraud in Nishio's view since nothing can offer total protection from radiation exposure.
4. A lack of nutrition and rest can make workers more susceptible to radiation symptoms. Nishio speculates that having the workers sleep together in gymnasium-like barracks with no privacy is simply designed to keep them from running away. Just 30 minutes from the site, he points out, there are empty hotels which could offer those on the front line a quiet, secure place to rest and recuperate.
5. He accuses TEPCO of being up to the old tricks of the nuclear industry: giving dispatch and temporary workers broken radiation monitors, only giving them monitoring devices when they are working despite high levels of radiation throughout the site, and so on.
6. Without accurate assessment of internal radiation exposure through "whole body monitoring", there is no way to tell how much exposure workers are actually suffering.
7. Measures must also be taken to gauge different types of exposure (i.e. alpha rays from plutonium and beta rays from strontium).
8. Around 5000 workers have worked at the site since March. This number is high, but if radiation release continues, 100 or even 1000 times that number may be needed over time.
9. The MOX fuel in reactor number 3 is particularly dangerous but Nishio doubts that special measures to protect workers are being taken.
10. "Peripheral Blood Stem Cell Harvest" treatment has been put forward by doctors as a way to minimize the chances of bone marrow deterioration among workers, but this was turned down by the Nuclear Safety Commission of Japan. Nishio asserts that this is evidence that they simply do not grasp the severity of the situation.
11. Apart from the iodine that they are being given, workers should also be taking Radiogardase (Prussian blue insoluble capsules). Not working to bring together the best preventative medicine, Nishio asserts angrily, is an example of "graveyard governance".

Fukushima Residents:

1. The threat to public health is not simply a matter of distance from Fukushima. Wind patterns and topography are even more important.
2. The release of data from the expensive SPEEDI system, was delayed until March 23. This delay resulted in unnecessary radiation exposure. "It is only conceivable that the high rate of radiation released was not reported because of fears of a panic."
3. Former Minister for Internal Affairs Haraguchi Kazuhiro has alleged that radiation monitoring station data was actually three decimal places greater than the numbers released to the public. If this is true, it constitutes a "national crime", in Nishio's words. He follows with, "Giving us the truth once is much more important than saying 'hang in there Japan!' a million times."
4. According to Japanese law, the rate of radiation exposure permitted for ordinary citizens is 1 mSv / year. This has been raised to 20 mSv / year in a "time of crisis". Such a dramatic increase in permitted exposure is akin to "taking the lives of the people lightly". Nishio believes that 20 mSv is too high, especially for children who are far more susceptible to the effects of radiation.
5. Even more important than a permitted 20 mSv exposure rate, however, is the lack of adequate provision for measuring internal radiation exposure among the Fukushima population.
6. The American Academy of Sciences 2008 "Biological Effects of Ionizing Radiation" report claims that there is no safe level of radiation exposure. Despite this and other examples of leading research, however, the Japanese government has moved on the assumption that there is no evidence for increased cancer risk at under 100 mSv of exposure. The European Committee on Radiation Risk argues that existing risk models do not take internal exposure into account. High rates of internal exposure will mean a dramatic increase in cancer risk for Fukushima residents, with as many as 400,000 cases predicted by 2061. Nishio argues, however, that these calculations rest on some shaky assumptions and that the number is too high. He believes strongly, however, that internal radiation exposure must be taken seriously by the Japanese government.
7. Comparing the 6.9 mSv exposure from a CT scan to a similar amount of radiation exposure outside of a controlled environment is misleading. Long term exposure and internal exposure can have unpredictable effects on the human body. Comparisons with radiation used in cancer treatment are also scientifically shaky.
8. The large amounts of radioactive waste water at the Fukushima Daiichi site will contaminate the soil and water supplies, significantly increasing the risk of internal radiation exposure.

Necessary Countermeasures:

1. Among people living in the same area, rates of exposure can vary greatly based on lifestyle and movement patterns. As a result, it is important that every

resident in at risk areas be given a device to monitor personal radiation exposure. Apart from protecting individuals and allowing them to make informed decisions about their safety, the data gathered can be used in future medical research and in court cases that will no doubt originate from the Fukushima Daiichi accident.

2. There is little conclusive scientific data on the risks of low level radiation exposure. The government, however, must not let this turn into a case of "we don't know so we can assume it is safe". On the contrary, Nishio argues that it is necessary to proceed under the assumption "we don't know so we must assume that it is dangerous".

3. Residents must be given real time radiation data as well as the best possible advice about how to decrease their exposure.

4. While there are limits to what this can achieve, dirt from schoolyards should be regularly removed and replaced.

5. Strontium 90, which has a half-life of 28.7 years and can have a serious impact on child bone development, must be carefully measured.

6. In planning of future solutions, radiation effects on the body should take priority over the potential stresses associated with relocation.

7. The government should buy houses and land in irradiated areas at pre-crisis market value and provide additional aid for resettlement. Cleanup measures should be undertaken and when the areas become safe, the government should sell property back at reduced rates. A respect for both present necessity and the deep attachment that many have to land that has been in their families for many generations is necessary if the government wants to convince nuclear refugees that they are being treated fairly.

8. The government should make every effort to provide accurate information, but should not forcibly remove elderly residents who wish to remain in their homes.

Some Radical Thoughts:

1. The current crisis has called the very foundation of Japanese society into question. An unprecedented crisis calls for new ideas.

2. Dependence on nuclear energy, which was slated to fulfill 50% of Japan's energy needs in the future, must be rethought.

3. Nuclear energy and energy policy have never been adequately debated in Japan. Those with a vested interest in nuclear energy were able to build up the "myth of nuclear safety" virtually unchallenged and they continuously covered up "inconvenient facts".

4. Energy demands will continue to increase and simply trying to convince the public to reduce energy use will not be enough. Now is the time for new debate about how to meet Japan's energy needs while moving away from nuclear power.

Nishio's article provides a realistic, nuanced portrait of the problems currently facing Fukushima and Japan. The Japanese government has addressed some of them on a limited scale, but serious deficiencies remain. Nishio's powerful statement, however, appearing in a major establishment outlet, is indicative of a shift in public discussion of radiation issues as more critical Japanese scientists outside of the circle of "academic flunkies" (goyo gakusha) make their voices heard."

USA Nuke Site Update

EnergyNews (http://enewnews.com/) has much coverage of the Fort Calhoun and Cooper Nuclear sites flooding and the Los Alamos fire from many sources.

The main point seem to be that the entire dam system on the Missouri River from as far north as Big Bend Dam in South Dakota is under stress from the amount of floodwater, as in, "will they hold"? Also a group of "private citizens" (an irrigation district commission or the like?) detonated a levee north of Fort Calhoun that caused a 3 to 4 inch increase in water levels at the site. Yikes, eh?

The news at Los Alamos centers around the fact that nuclear waste was buried years ago at off-site locations that have now burned.

< Prev Next >

Comments

#1 RE: Meltdown Updates: Fukushima/Los Alamos July 2, 2011 — StPete 2011-07-02 14:55 0
Nishio's full article in English, including a summary, his bio, and the original Japanese version should be provided to every nuclear energy power executive, relevant government agency and every newspaper science editor, so nobody can say they didn't know. Quote

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