

Fukushima: the roles of WHO and IAEA

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The early days: Days 1 to 4
(11 to 14 March)

What we know happened (1):

Day 1, only hours after the accident it was recognised that cooling water levels had fallen exposing fuel rods and core damage had started.

Day 2 by 06:50 the core of Unit 1 had melted and fallen to the bottom of the core container. Pressure was rising due to the interaction of steam with red hot fuel casing in the core. Venting initially could not be carried out without electricity and it was not until 2pm on day 2 that the vent on Unit 1 was opened. Just after 15:00 the reactor building exploded due to hydrogen released in the venting.

Day 3 At 09:00 core damage commences in reactor 3.

What we know happened (2):

Day 4 at 11 am Unit 3 explodes; by 15:00 most of the fuel in Unit 3 drops to the bottom and at 20:00 core damage starts in Unit 2

During this time releases of radioactivity occurred over and above those caused by venting. At 15:00 on Day 2 evacuation up to 3 miles (~5 km) was ordered and at 21:50 on the same day it was extended to 20 km.

There is no report that iodine tablets were distributed in this period.

What did WHO say in this early period?

Day 1 as of 23:45 (Philippine time: Day 2 Japan time) the Western Pacific Regional Office of the WHO (WPRO) issued status reports on the earthquake and the tsunami with a mention of potential problems with nuclear reactors.

Day 3 and several reports later, more detail was given on the situation at reactors 1 and 2 and the evacuations reported and on 14 March the situation at reactor 3 was mentioned.

This advice was not directed at the Japanese authorities and public or the international community, but mainly it was for the benefit of the Pacific islanders, most notably Hawaii.

Up to the 09:00 on 14 March (CET) [Day 4 in Japan] WHO (Geneva) had not provided information or advice regarding the nuclear issues on their website.

What did IAEA say in this early period?

From 14 March (CET) the IAEA website gave, sometimes daily, technical reports on the status of the reactors – state of cooling etc., imposition of evacuation orders etc., but failed to report releases of radioactivity which were occurring at the time, initially because of venting and over pressurisation of core containers

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On the evening (CET) of 13 March 2011 (Day 4 Japanese time) I sent an email to my colleague Dillwyn Williams saying “. **The most amazing thing is that apparently the IAEA has no real idea of what is going on. They are, according to their website today, "planning an investigation" and "seeking information".**

The nuclear industry's view of Fukushima in April 2011

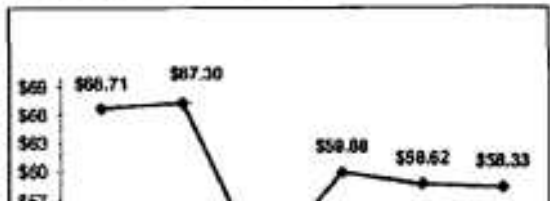
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WEEKLY ROUNDUP
Fukushima - A PR Problem
Soon to Fade From Public Attention?

15 April 2011

- Conferees in Chicago were glued to television sets last week when another earthquake struck Japan. But inside the conference halls they agreed that

What should have happened

It seems clear that the Interagency nuclear emergency response system (led by the IAEA) set-up in response to the Chernobyl accident, failed to operate on 11 March 2011. Much of the record available on the INTERNET to support that contention has since disappeared and it was my clear impression that prior to its disappearance a certain amount of history was re-written.

WHO was an integral part of the response system. In 1994 a Ministerial Meeting was held by the European Regional Office of WHO (EURO) in Helsinki. A half day was devoted to the Chernobyl accident, with particular emphasis on the psychosocial effect and it was decided that EURO should set-up a nuclear emergency response centre to coordinate the public health response to the next accident within Europe.

This became the task of my section of the European Centre for Environment and Health in Rome. At that time we were already deeply engaged in the International Thyroid Project (ITP) in response to the increase in childhood thyroid cancer.

Following the Chernobyl Accident Italy closed all its nuclear power plants and downgraded the institutions that oversaw the public health aspects of their operations. Although the expertise was there to work in collaboration with WHO the legal status to form an international agreement was lacking. In Helsinki, Finland, through the Finnish Radiation and Nuclear Safety Authority (STUK) offered to EURO a collaboration with their national nuclear emergency response system. This offer took 4 years to implement due to internal WHO “negotiations”, but in 1998 a Project Office dedicated to the public health aspects of nuclear emergencies was opened on STUK premises and STUK became a WHO Collaborating Centre.

STUK as an institute retained staff with expertise ranging from nuclear physics and engineering to radiobiology and the emergency response system was on stand-by to go into action at very short notice 24/7 and 365 days a year.

Unfortunately, EURO decided not to continue the radiation programme commenced in 1991 beyond the end of 2001 and transferred all responsibilities to WHO Geneva who failed to maintain the nuclear emergency facility in collaboration with STUK.

On 11 March STUK's nuclear emergency response system was activated, but the huge demand from the public for information overwhelmed their website, which crashed. At the same time pharmacies sold out of iodine. Eventually, STUK managed to get a skeleton website operating, but only in Finnish and subsequently Swedish.

This public response testifies to the need for authoritative and trusted information even when the accident is several thousand km distant. STUK's website was probably the only source of reliable information globally in those early days.

In 2003 I personally informed the EURO Regional Director (Dr Marc Danzon) that WHO's preparedness for a nuclear emergency then was inferior to that in 1986 when the Chernobyl accident occurred. EURO retains no expertise in radiation although Europe has a combination of a high population density and a high density of nuclear power plants, many aging. WHO Geneva has a programme to respond medically to individuals exposed to high radiation doses but no programme on the public health dimension.

Why does this matter?

It matters most in the context of what we call the psychosocial effect. Some of us regard this as the major public health detriment of the Chernobyl accident. We are not confusing this with what used to be referred to as “radiophobia”. It is a real phenomenon in addition to the “direct” damage done by the radiation exposure. It was analysed in 1990 by a EURO working group and five dimensions of the effect were noted, among them the loss of trust in the authorities responsible for protecting public health.

Those who had some elementary knowledge of nuclear engineering knew that after a few days of cooling loss a reactor that had just been shutdown would have melted and the core would be molten fuel in the base of the containment vessel. Even in July 2011 the IAEA was talking of achieving “cold shutdown” in the three reactors.

By the 23 March 2011 I was able download ground deposition data for litate, well outside the 30km evacuation zone, where levels of Cs and I were comparable to those in the Chernobyl evacuation zone. On 12 April 2011 in Berlin I was amazed to learn from Katsumi that these regions had not been evacuated.

The situation in Iitate was confirmed by aerial dosimetry in May 2011. the point is that I did not learn about this situation from either IAEA or WHO.

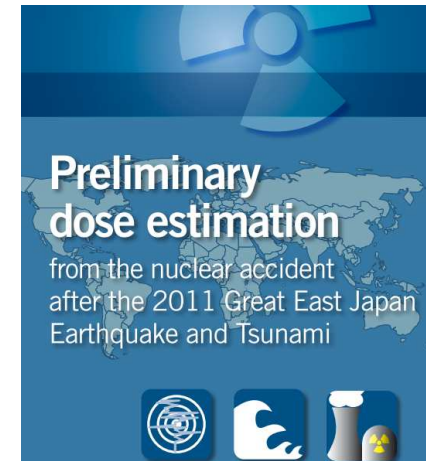
After Chernobyl I was able, from published data, to make a public health assessment for the UK of the Chernobyl accident ready to be published on 1 June the same year following the accident on 26 April. UNSCEAR has been attempting to do this for Fukushima and has once again postponed publication to April – more than 3 years after the accident.

I will not even attempt to make any estimates of detriment from Fukushima because the data are unreliable. I don't know who is telling the truth. Are the WHO preliminary dose estimates reliable?



2013

Is the WHO health Risk Assessment based on those preliminary doses reliable? I have no idea.



2012

What I do know is that there are populations numbering over 100,000 persons for whom the doses in the earliest phase of the accident (prior to their evacuation) we don't know. Where iodine is concerned they could be quite high unless advice not to consume local food and water was issued. We have practically no information about internal doses in the early months, especially for children.

We don't learn that from either the IAEA or the WHO.

WHO to my knowledge has not expressed an opinion on the 20mSv limit for evacuation that was applied, apparently on the advice of the IAEA. I estimate that it entails about an extra 7% lifetime risk of cancer for a girl living the first 10 years of their life under such conditions.

Neither has the WHO nor the IAEA, to my knowledge, commented on the 100mSv threshold advocated by the Japanese authorities although they both subscribe to a linear no-threshold (LNT) basis for risk assessment.

In my view, as someone involved in public health for over 40 years, we are now in an unprecedented position where strategies honed over more than 50 years of accumulating expertise to protect public health, have broken down. WHO has failed in one of its primary mandates, but it is not responsible for the failure to provide reliable information upon which to base public health advice: that is the clear responsibility of the appropriate Japanese authorities, from the site operator to the national Government.

IAEA has a mandate for maintaining the safety of the technology it advocates. In the past it has used that mandate to interfere with WHO's public health mandate: in this case it has failed even by its own standards. There were clear failures in the safety standards of the NPPs at Fukushima that considerably exacerbated the severity of the accident and the IAEA was aware of those – the lack of nitrogen purging that led to the explosions, for example.

It is alleged that, even while the NPPs continues to discharge radioactivity to the environment, the UK has plans to build 50 NPPs.

ADDENDUM 1:

The national and international responses to Fukushima have been self-evidently risible. To some extent I understand that that was recognised at a large IAEA meeting in Vienna last week, where it seems, from the outside at least, IAEA regard the public health response to the accident as a matter for public communication – that also seems to be UNSCEAR's view.

What should concern us at least as much is the response of both the Japanese and international scientific community. I follow most closely the UK press and broadcast media. Here, close attention was given to “industry experts”, few knowing the first thing about public health, but presumably enough to know when a melt-down was occurring. They of course denied that there was a problem and were expecting “cold shut-down” to be achieved “any day now” right from March to June.

In my view PUBLIC HEALTH SANITY, carefully built up over several decades, has been replaced in the public and media mind by nuclear industry PROPAGANDA and it is as much propagated by academia as by the industry itself.

ADDENDUM 2

It seems that the radiological community is not alone:

FROM THE FRONTLINE **Des Spence**

Evidence based medicine is broken

Evidence based medicine (EBM) wrong footed the drug industry for a while in the 1990s. We could fend off the army of pharmaceutical representatives because often their promotional material was devoid of evidence. But the drug industry came to realise that EBM was an opportunity rather than a threat. Research, especially when published in a prestigious journal,



From the National

for every ill. The billion prescriptions a year in England in 2012, up 66% in one decade,² do not reflect a true increased burden of illness nor an ageing population,³ just polypharmacy supposedly based on evidence. The drug industry's corporate mission is to make us all sick however well we feel.⁴ As for EBM screening programmes, these are the combine harvester of wellbeing, producing bales of over-

This is from a recent issue of *bmj*. The argument here is that the pharmaceutical industry has hi-jacked the scientific literature with “concocted evidence” in order to create “illnesses” that require their medicines.

This could not have been achieved without the cooperation of the scientific community and in particular the journal editors. “Open” (author paid) publication now seems to dominate the literature and the explosion of new “open” journals, cannot but increase the “rubbish” in the literature.

Urgent steps need to be taken to stop this perversion of what we once proudly called SCIENCE.