

Fukushima Dialogues: A Summary

Steve Baker, Ph.D.

Background

The story of the tsunami and Fukushima reactor failures is told in [Annals of the ICRP](#) Volume 45 No. 2S 2016 and a French [ETHOS](#) web site. The Japanese government, TEPCO, and the people living near Fukushima were not prepared for a major radiation release. Making matters worse, the tsunami destroyed the infrastructure required to communicate among parties. As people learned about the radiation release they became afraid. The fear was driven by the unknown nature of the threat to their lives.

As time passed, the fear provoked extreme anger, followed by despair. A young Japanese woman, Ryoko Ando, decided that she should start something herself. She started a study group. She had lots of exchanges with people on Twitter, which is how she got in touch with Jacques Lochard. She learned that he had started a dialogue in Belarus called ETHOS that helped people deal with the uncertainty of their radiation exposure. She helped organize grass-roots effort to deal with the situation.

Jacques Lochard was introduced to Junichiro Tada who was working with the local population trying to decontaminate homes in Date. Junichiro Tada discussed the tensions between national authorities, local authorities and experts, and that it was hard for them to work together. A series of Dialogues was organized by Ohtsura Niwa, Chris Clement and other colleagues of the ICRP.

Over time, with the support from international organizations, the people living close to Fukushima learned to measure:

- Radioactivity in Their Environment,
- Their Radiation Exposure,
- How Much They are Contaminated by Radioactivity, and
- Food Contamination.

Over a few years, they progressed through the steps outlined below:

Fear -> Anger -> Despair -> Self Help -> External Support -> Coping -> Rebuilding

The selected quotes below illustrate this process.

Christopher H. Clement
Scientific Secretary
ICRP

at that time [the first Dialogue] there was a lot of anger, frustration, very obvious shouting in the room, difficult discussions about what should be done, a lot of anxiety, and a lot of disappointment to, - "anger" is probably the best word, toward the government, toward TEPCO, and toward the general situation. People were really frustrated.

Jean Christophe Gariel
Head, Environmental Protection Division
IRSN

Having taken part in my first Dialogue seminar, I changed my perspective, my "glasses" so to speak from a technical viewpoint to one that encompasses all of the problems that arose from the nuclear accident, be they social, economic, or to do with the destructuring of society, as we've seen in the Fukushima region.

Motoichi Kanno
Farmer
Iitate Village

By taking the appropriate measures, based on a right assessment of the situation, then life can go on. That's what I took from the Dialogue seminar.

Relevance to the Low Dose Radiation Conference

Fear of radiation is seen as a major problem. But the fear is not fear of radiation; it is fear of the unknown and fear of not having control of our lives. Intuitively, we feel safer driving an automobile than flying in a commercial airplane even though we know that the airplane is much safer.

Mayumi Ootsuki a resident of Ryozen Village was willing to accept levels of 40 μ Sv per hour. She accepted it even though extended exposure at that level could exceed that Japanese limit for returning evacuees of 20 mSv per year, because she could measure it and exert some control over her family's exposure.

Decisions about acceptable radiation exposure should be driven by science, not regulations. This suggests that perhaps new regulations are needed to provide evacuation guidance in the event of significant radiation releases. If those regulations can be based on science, perhaps it would facilitate using science to drive existing regulatory limits. Established science includes:

- A short-term dose of 1000 mSv (1 Sievert) is about the threshold of acute radiation syndrome (sickness),
- An instant dose of 100-250 mSv can slightly increase the risk of later developing cancer, and
- if a dose is spread over time there is less risk of any effect.

[ICRP Publication 111](#) *Application of the Commission's Recommendations to the Protection of People Living in Long-term Contaminated Areas after a Nuclear Accident or a Radiation Emergency* should be a driver for establishing the new regulations. And the experience of past evacuations, Fukushima, Chernobyl, and Three Mile Island should also be a driver.

If 20mSv per year is protective of returning evacuees, why are our operational limits orders of magnitude below that?