

# Fukushima-daiichi nuclear accident: Human health impact - evacuation failure

Japan is one of the most densely populated nations on earth, so the release of large amounts of radioactivity will have the potential to affect millions of people. However the Japanese authorities and Tokyo Electric, the nuclear power plant operator, have from the very beginning refused to admit publicly the scale of the disaster. It took two months to admit the reactors had suffered meltdown, even though this was recognized by independent specialists within days of March 11, 2011.<sup>1</sup>

One serious consequence of this failure to inform the public is that evacuation of citizens in Fukushima was too slow, and on too small a scale to adequately protect public health. Even one year after the accident, when radiation doses to the public could be reduced, the government is refusing to act. The variations and inconsistency of fallout patterns has also made the challenge even greater. Radiation levels 40 miles from the nuclear power plant have been found to be higher in some cases than those within a few miles of Fukushima-daiichi.<sup>2</sup> Levels of radiation exceeding those deemed as safe under pre-existing regulations are now being detected across central Japan, including Tokyo.

The most serious contamination from the accident is in Fukushima Prefecture. The number of people officially evacuated by the authorities from the exclusion and emergency zones around the reactor site, as of December 2011, was 114,460.<sup>3</sup> Among the most affected areas is the city of Minamisoma where 25,184 people have been removed. In addition to those evacuated by the authorities, many tens of thousands more people in Fukushima have self evacuated throughout Japan. In September 2011, it had already been estimated that 100,000 men, women and children would be unable to return to the homes they were evacuated from.

The levels of contamination are such that even nuclear agencies from other countries have recommended additional evacuations of tens of thousands more people, if the risk of radiation induced health effects is to be minimized.<sup>4</sup>

Radiation readings throughout Fukushima, including the regional capital with a population of 290,000 (before March 11) and 40 miles from the nuclear plant, are at such heightened levels that the population is at risk from radiation doses is as much as 20 times above recommended safety limits. School yards, gardens, children's play areas, rooftops and streets have been found to have dangerous levels of radiation. Soon after the accident, mothers of Fukushima children formed coalitions to demand that the government evacuate from the highest contaminated areas in the region.<sup>5</sup>

In May 2011, the response of the government was to raise the radiation exposure limit for children to 20 times the globally accepted maximum.<sup>6</sup> With this act, the government appeared more intent on minimizing the perceived scale of the accident rather than minimizing radiation doses to children.

The health of children in Fukushima, and across Japan, is of particular concern because they are far more vulnerable to radiation than adults. In July 2011, it was announced that tests of over 1,000 children in Fukushima, revealed that 45 percent showed radiation contamination of their thyroid.<sup>7</sup> The Fukushima-daiichi accident released large amounts of iodine-131 which is absorbed by the human thyroid. Despite government claims that the levels were too low to have an effect on health, in early

1 See, [http://www.greenpeace.de/fileadmin/gpd/user\\_upload/themen/atomkraft/Summary\\_Large\\_Report\\_03.pdf](http://www.greenpeace.de/fileadmin/gpd/user_upload/themen/atomkraft/Summary_Large_Report_03.pdf)

2 See, Concern grows over wider radiation contamination, October 22nd, <http://main.omanobserver.om/node/69357>

3 Investigation Committee on the Accidents at Fukushima Nuclear Power Stations of Tokyo Electric Power Company, December 26th 2011, see, <http://icanps.go.jp/eng/120224Honbun02Eng.pdf>

4 See for example the report from French nuclear agency, IRSN, <http://www.irsn.fr/EN/news/Documents/IRSN-Fukushima-Report-DRPH-23052011.pdf>

5 See Friends of the Earth Japan, <http://www.foejapan.org/en/news/110819.pdf>

6 The recommended maximum in Japan before March 11th was 1 milli sievert per year. For children in Fukushima this has now been set at 20 milli sieverts – see, <http://fukushima.greenaction-japan.com/2011/10/27/petition-03-save-life-and-lifestyle-environment-and-nature-a-petition-to-say-goodbye-to-nuclear-power-plants/>

7 See, German Press Agency, <http://www.thehindu.com/news/international/article2161471.ece>



2012 indications of the threat to public health emerged with confirmation of thyroid abnormalities, including enlarged nodules in Fukushima children.<sup>8</sup>

In September 2011, urine samples from children in Fukushima City, 44 miles from the nuclear accident, revealed that all were contaminated with caesium. Children that had been evacuated from the city were found to have lower levels of radioactive caesium. The Japanese government had reported earlier results from the city of indicating that 50 percent of children were contaminated.<sup>9</sup>

Given the longer latency periods for cancers and other radiation fueled illnesses, the true scale of health effects from the accident will only be known in the years and decades ahead. Claims from the global nuclear industry, supported by agencies such as the International Atomic Energy Agency (IAEA) and World Health Organization (WHO) that there will be little or no health impact from the Fukushima accident, lack credibility.<sup>10</sup> For the critical period of maximum releases from the plant during the first 10 to 14 days, no precise estimate of the dose to the public has been made. The Japanese authorities failed during this period and ever since to conduct thorough radiation monitoring. Speculation on the number of cancers and ultimate fatalities at this stage would be exactly that, speculation, and provides no comfort to the people of Japan. The priority should instead be minimizing further radiation exposure to below recommended maximum levels,<sup>11</sup> especially for the most vulnerable including pregnant women, babies and children.

The refusal of the Japanese government to respond to peoples' demands for greater protection from radiation, including evacuation, is wholly and tragically consistent with the decades-long nuclear policy of the Japanese government. The corrupt relationship between the nuclear power companies and officials in the Ministry for Economy, Trade and Industry (METI) means that they have the same interests. Tokyo Electric, which operated the Fukushima-daiichi nuclear power plant, and the government, are faced with tens of billions of dollars in liabilities. One cost they are trying to minimize is the compensation costs for victims who have been evacuated. While evacuees have not received a fraction of what they are due, the cost to Tokyo Electric if they were to compensate the 114,000 evacuees would be US\$1.69 billion over one year, based on a monthly payment of US\$1,240 per person.<sup>12</sup> It remains unknown if, when, and how these people will be able to return to their contaminated homes. The costs, therefore, cannot be determined. The tens of thousands who self-evacuated are not entitled to this compensation. For this reason, the authorities in Fukushima and government in Tokyo cannot admit that hundreds of thousands more are living in areas that require evacuation. To do so would see Tokyo Electric's annual compensation payments potentially escalating into the tens of billions of dollars.

---

*Updated March 1, 2012*

---

8 See, <http://shukan.bunshun.jp/articles/-/1044> in Japanese and here, <http://ex-skf.blogspot.com/2012/02/japanese-magazine-sensationalizes.html>

9 See, [http://www.acro.eu.org/CP\\_ACRO\\_070911\\_en.pdf](http://www.acro.eu.org/CP_ACRO_070911_en.pdf)

10 See [http://fukushima.greenaction-japan.org/wp-content/uploads/2011/09/110908\\_Burnie\\_Barnaby.pdf](http://fukushima.greenaction-japan.org/wp-content/uploads/2011/09/110908_Burnie_Barnaby.pdf); see <http://www.reuters.com/article/2011/05/23/us-japan-fukushima-un-idUSTRE74M3VT20110523> for statement from head of UNSCEAR that they expect no health effects.

11 See, ICRP which recommends a maximum of 1 milliSievert per year, [http://www.icrp.org/docs/2005\\_recs\\_CONSULTATION\\_Draft1a.pdf](http://www.icrp.org/docs/2005_recs_CONSULTATION_Draft1a.pdf)

12 See, <http://mdn.mainichi.jp/mdnnews/news/20120218p2a00m0na010000c.html>