



**Submission by Greenpeace Japan<sup>1</sup> to the Committee on the Rights of the Child and review of Japanese Government's 4th and 5th Report on the Convention on the Rights of the Child**

**Subject: Fukushima radiation exposure**

**Public Version**

**Date: September 28<sup>th</sup> 2018**

Greenpeace Japan is submitting the following evidence to the United Nations Committee on the Convention for the Rights of the Child as it considers the Japanese Government's 4th and 5th Report on the Convention on the Rights of the Children. The evidence below relates to radiation exposure risks to Japanese citizens, and specifically, lifetime exposure risks including to children, if they were to return to significantly contaminated areas of Fukushima prefecture following the March 2011 Fukushima Daiichi nuclear disaster.

### **Introduction**

As a result of the Fukushima Daiichi nuclear accident, which began on March 11<sup>th</sup> 2011, large areas of Fukushima prefecture, and other prefectures in Japan, were contaminated by radioactive releases from the reactors. As a consequence, approximately 165,000 citizens, including women and children, were evacuated from their homes. Japanese government policy over the past years has been to initiate a decontamination program in affected areas. In parallel, the Government has raised the maximum public radiation dose to 20 milli Sieverts per year (20mSv/y) - twenty times the recommended maximum for public exposure of 1mSv/y and what the Japanese public recommended maximum dose was prior to the 2011 accident. This has permitted the Government to lift evacuation orders for areas they have declared safe to return to. However, Greenpeace investigations over the past seven years, including in 2017, has demonstrated that decontamination efforts have had, in many cases, a limited effect in reducing radiation levels, in particular in areas of Iitate and Namie, where evacuation orders were lifted in March 2017.<sup>2</sup>

Greenpeace has major concerns with radiation exposure to all Fukushima citizens and

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<sup>2</sup> Greenpeace Japan, "No Return to Normal : The Fukushima Daiichi Nuclear Disaster House Case Studies of the Current Situation and Potential Lifetime Radiation Exposure", March 2017, see [https://www.greenpeace.org/colombia/PageFiles/326280/2017/NRN\\_FINweb4.pdf](https://www.greenpeace.org/colombia/PageFiles/326280/2017/NRN_FINweb4.pdf)



decontamination and nuclear workers resulting from the 2011 nuclear accident. We are particularly concerned, however, over the radiation risks to the health of pregnant women and children given their higher risk factors compared to adult males.<sup>3</sup>

As a result of Japanese government policy, radiation exposure to children returning to the higher contaminated areas, such as Iitate and Namie, has the potential each year, and over the decades of their lifetime, to expose them to levels far in excess of recommended maximum levels.

### **Greenpeace request to Committee on Rights of the Child**

We encourage the Committee to request the Government of Japan to provide a comprehensive explanation and justification for its current policies in relation to the Fukushima Daiichi nuclear disaster, in particular how its policies do not contravene the Convention on the Rights of the Child. This includes, Convention Article 3 (para 1) which specifies that the best interests of the child, including future generations, must be a “primary consideration” in all actions; with best interest of the child including the requirement that in attaining his or her right to the highest standard of health it requires the prevention of exposure to toxic chemicals and pollution,<sup>4</sup> which in the case of Fukushima children means preventing radiation exposure above the international recommended maximum of 1mSv/y. We request the Committee to address these issues, including consideration of children’s life time radiation exposure, with the Government of Japan as it reviews its compliance with the CRC. Further, we urge the Committee to request the Government of Japan to revise its decisions to lift evacuations for areas where citizens including children would be exposed to Fukushima derived radioactive contamination resulting in radiation exposure above 1 mSv/year.

### **Life time exposure**

Based on the work of Imanaka of Kyoto University Research Reactor Institute et al. who have assessed the potential long-term radiation exposures for former Iitate residents, if they were to return. An analysis published in October 2016 projects the dose rate in micro Sieverts per hour ( $\mu\text{Sv/h}$ ) over 50 years.<sup>5</sup> This takes the decay of both Cesium 134 (Cs-134) with a half-life of 2 years and Cesium 137 (Cs-137) with a half-life of 30years into

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<sup>3</sup> Greenpeace Japan, “Unequal Impact - Women’s & Children’s Human Rights Violations and the Fukushima Daiichi Nuclear Disaster”, Kendra Ulrich, Greenpeace Japan, March 2017, see <https://www.greenpeace.org/japan/Global/japan/pdf/Unequal-impact-en.pdf>

<sup>4</sup> See “Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes”, Note by the Secretariat, Human Rights Council, General Assembly, Thirty-third session Agenda item 3 Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development, 2 August 2016, A/HRC/33/41.

<sup>5</sup> Imanaka 2015: Comparison of the accident process, radioactivity release and ground contamination between Chernobyl and Fukushima-1; Tetsuji Imanaka, Gohei Hayashi and Satoru Endo; Journal of Radiation Research, 2015.



account. In an area with a dose rate of 1 $\mu$ Sv/h in 2016, the level would be roughly 0.2 $\mu$ Sv/h in 2066. These are shown in chart one below.

When calculating the external irradiation from deposited radionuclides it is necessary to consider a reduction in exposures from being indoors and the shielding effects of the building materials. Wooden houses are the most common type of houses in Fukushima. According to the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) wooden houses provide a shielding which reduces the inside gamma radiation to 40% of the outside radiation. As such, this was applied to our calculations.

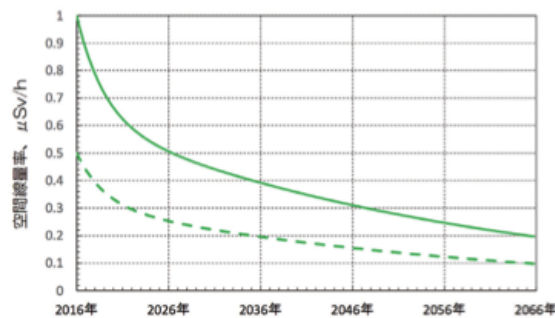


Chart 1: Prediction of air dose rate transition in the cases, 1  $\mu$ Sv/h and 0.5  $\mu$ Sv/h on 1st January 2016.

The Original chart title is 放射線量率の推移予想：2016年1月1日に1 $\mu$ Sv/hの場合と0.5 $\mu$ Sv/hの場合, from the report titled 飯館村上飯館地区の空間放射線の現状調査報告 on 29th October 2016.  
<http://www.rri.kyoto-u.ac.jp/NSRG/Fkkm/kamilitoi2016-10-9.pdf>

For this analysis, we calculated two separate scenarios to account for lifestyle differences. The first scenario assumed that an individual spent an average of 8 hours per day outside, as is the standard Japanese government calculation assumption. The second scenario assumed a person spent 12 hours a day outside (see Table below).

Dose rate ( $\mu$ Sv/h)	Lifetime dose (70 years)		
	24 h outside (mSv)	12 h outside (mSv)	8 h outside (mSv)
0.1	22	15	13
0.2	44	31	26
0.3	66	46	39
0.4	87	61	52
0.5	109	76	65
0.6	131	92	78
0.7	153	107	92
0.8	174	122	105
0.9	196	137	118
1.0	218	153	131
1.1	240	168	144
1.2	262	183	157
1.3	283	198	170
1.4	305	214	183
1.5	327	229	196
1.6	349	244	209
1.7	371	259	222
1.8	392	275	235
1.9	414	290	249
2.0	436	305	262
2.1	458	320	275
2.2	480	336	288
2.3	501	351	301
2.4	523	366	314
2.5	545	382	327
2.6	567	397	340
2.7	589	412	353
2.8	610	427	366
2.9	632	443	379
3.0	654	458	392

Table 10: Lifetime dose (70 years) corresponding to different dose rates and durations of stay outside.



It should be noted that for people living in this rural area, the standard used by the Japanese authorities of spending only 8h / day outside is for many people an underestimation. Residents in this agriculture and forestry-dependent region mostly worked and lived outside prior to the Fukushima nuclear disaster, particularly during the spring, summer, and autumn seasons. Even during the winter period, work is conducted outside, for example in the forest. Similar variables are required to be factored in when considering the behavior of children.

Based upon both the results of our radiation survey case studies and our consultant Oda Becker's calculations (Table below), the potential life-time exposure dose for people, including children, in the houses in Iitate included in our research is considerable. These would range between 39mSv and 183mSv over 70 years, over and above the expected lifetime exposure due to natural sources.

House	Weighted Average dose rate (µSv/h)	8 hours outside (mSv)	12 hours outside (mSv)
Mr. Anzai	0.7	92	107
A	0.3	39	46
B	0.8	105	122
C	0.5	65	76
D	1.2	157	183
E	1.0	131	153
F	0.8	105	122

Table 12: Potential lifetime exposure over 70 years for surveyed houses in Iitate, Fukushima Prefecture.

For children, given their age and higher risk factors to radiation exposure, these dose rates can be considered significant and of major concern.

Despite these radiation risks, the Japanese government plans as early as 2019 to lift evacuation orders for small areas Futaba and Okuma, and by 2022/23 for small areas of Namie, Iitate, Katsurao, and Tomioka.<sup>6</sup> These are areas of Fukushima with the highest radiation levels. For any returning citizens, including women and especially children, the resulting life time radiation exposure risks will therefore inevitably be that much higher than in areas already opened for habitation.

## Conclusion

Greenpeace investigations and analysis have confirmed that the radiation exposure over a

<sup>6</sup> On 22 December, 2017, the Japanese Government Reconstruction Agency approved the “Namie-machi Specific Reconstruction and Recovery Base Area Reconstruction and Rehabilitation Plan” based on the Fukushima Reconstruction Revitalization Special Measures Law, see <http://www.jcci.or.jp/news/trend-box/2018/0115130735.html>. Namie, joins Futaba and Okuma as designated for reconstruction hubs, with lifting of evacuation orders planned for 2022, see Kyodo, “Futaba unveils plan to set up reconstruction hubs in 555-hectare area”, 3<sup>rd</sup> August 2017, see <http://www.fukushimaminponews.com/news.html?id=849>; and Okuma Town, “The Okuma Reconstruction Plan An Interim Report December, 2013 Okuma Town”, December 2013, see [http://www.town.okuma.fukushima.jp/fukkou/sites/fukkou/files/attachments/December\\_2013\\_Okuma\\_Reconstruction\\_Interim\\_Report.pdf](http://www.town.okuma.fukushima.jp/fukkou/sites/fukkou/files/attachments/December_2013_Okuma_Reconstruction_Interim_Report.pdf)



lifetime for citizens, including children, that return to the survey areas of Namie and Iitate could be high and well beyond the level acceptable from a public health safety perspective. Epidemiological studies monitoring the health effects of long-term exposure to low-ionizing radiation conclude that there is no low-threshold limit for excess radiation risk to non-solid cancers such as leukemia.<sup>7</sup> The additive radiation risk for solid cancers continues to increase throughout life with a linear dose-response relationship, which is the international basis for radio-protection standards set by the ICRP.<sup>8</sup>

Children, as well as women and young people, are known to be more vulnerable to the impacts of radiation and would be exposed to radiation over many decades should they return to these contaminated areas. It is shocking to consider that nuclear plant workers world-wide, working in hazardous and controlled environments have, under regulation, have more protection from radiation than children, and other citizens of Iitate and Namie, if they choose to return to their homes.

The conclusion of our survey work in Iitate and Namie is that the Japanese government has chosen to defy the recommendations of member states during the UNHRC Universal Periodic Review Japan in 2018, and in particular, “Respect the rights of persons living in the area of Fukushima, in particular of pregnant women and children, to the highest level of physical and mental health, notably by restoring the allowable dose of radiation to the 1 mSv/year limit, and by a continuing support to the evacuees and residents” as recommended by the German government.<sup>9</sup> The Japanese government has instead chosen to cynically and deliberately disregard the safety, health and well being of tens of thousands of Fukushima citizens, including children.

Greenpeace notes that the Government of Japan has been asked to provide to the Committee on the Rights of the Child information on its compliance with the Convention

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7 David Richardson et al, Ionizing Radiation and Leukemia Mortality among Japanese Atomic Bomb Survivors, 1950-2000, Radiation Research (September 2009), vol.172, no.3, pp.368-82. as cited in Human Rights Council, Twenty-third session Agenda item 3, Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development A/HRC/23/41/Add.3 Distr.: General 2 May 2013 Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Anand Grover Addendum Mission to Japan (15 - 26 November 2012).

8 The ICRP sets a recommended public dose limit of 1mSv in a year, with a higher value being allowed in special circumstances as in the case of the Fukushima Daiichi nuclear accident, provided the average over five years does not exceed 1 mSv per year, see ICRP 111: Protection of People Living in Long-term Contaminated Areas after a Nuclear Accident or a Radiation Emergency, available at <http://www.icrp.org>. See also, OECD, Nuclear Energy Agency: Evolution of ICRP Recommendations 1977, 1990 and 2007. Changes in Underlying Science and Protection Policy and their Impact on European and UK Domestic Regulation, ISBN 978-92-64-99153- 8, 2011, see <https://www.oecd-nea.org/rp/reports/2011/nea6920-ICRP-recommendations.pdf>; see also National Research Council, Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII Phase 2 (Washington DC, The National Academies Press, 2006), p.30; Kotaro Ozasa et al, Studies on the Mortality of Atomic Bomb Survivors, Report 14, 1950-2003: An Overview of Cancer and Non-cancer Diseases, Radiation Research (March 2012), vol.177, no.3, pp.229-243, pp. 229,236.; David J. Brenner et al, Cancer Risks Attributable to Low Doses of Ionizing Radiation: Assessing what we really know, PNAS (November 2003), vol.100, no.24, pp.13761-13766; Pierce and Preston, Radiation-Related Cancer Risks at Low Doses among Atomic Bomb Survivors, Radiation Research (2000), vol.154, pp.178-186, p.185. As cited in Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Anand Grover Addendum Mission to Japan (15 - 26 November 2012).

9 UNHRC, “Human Rights Council Working Group on the Universal Periodic Review” Twenty- eighth session 6-17 November 2017 Compilation on Japan Report of the Office of the United Nations High Commissioner for Human Rights”, November 2017, A/HRC/WG.6/28/JPN/2, see for documentation - <http://www.ohchr.org/EN/HRBodies/UPR/Pages/JPIndex.aspx> and broadcast of event <http://webtv.un.org/search/japan-review-28th-session-of-universal-periodic-review/5644308605001/>



on the Rights of the Child, including on children and their medical support related to the Fukushima Daiichi accident.<sup>10</sup> To this end we urge the Committee during its dialogue with the Government of Japan and its consideration of its compliance with the Convention on the Rights of the Child, to raise the issue of radiation exposure to children, including lifetime exposure. We encourage the Committee to request that the Japanese government apply all and in full the relevant principles of the Convention on the Rights of the Child in regards to its policies related to the Fukushima Daiichi nuclear disaster. The Government of Japan should be requested to provide full details as to how its policy decisions in relation to the Fukushima Daiichi nuclear accident, including the lifting of evacuation orders and the setting of radiation limits, including for children, at 20mSv/y, are not in contravention of the guiding principles of the Convention.

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<sup>10</sup> Committee on the Rights of the Child Eightieth session 14 January-1 February 2019, Item 4 of the provisional agenda Consideration of reports of States parties", List of issues in relation to the combined fourth and fifth periodic reports of Japan, CRC/C/JPN/Q/4-5, 22 February 2018.

