Geophysical Research Abstracts
Vol. 18, EGU2016-10724, 2016
EGU General Assembly 2016

Safecast: How disaster led to empowerment of crowdsourced citizen science for radiation measurement and communication after Fukushima

Azby Brown (1,2), Peter Franken (2), Sean Bonner (2), Joe Moross (2), and Nick Dolezal (2)
(1) Kanazawa Institute of Technology, Tokyo, Japan (azby@safecast.org), (2) Safecast, Tokyo, Japan (azby@safecast.org)

Safecast, an international, volunteer-based organization devoted to monitoring and openly sharing information on environmental radiation and other pollutants, was initiated on March 12, 2011, one day following the start of the Fukushima Daichi Nuclear Power Plant accident, in response to the lack of publicly available, accurate and trustworthy information about the spread of radioactive fallout. Since its inception, Safecast has grown in size, scope, and geographical reach, as well as in the technical sophistication of its citizen-science-based hardware and software systems. The focus of the group's work is to provide citizens worldwide with the tools they need to inform themselves by gathering and sharing accurate environmental data, in an open and participatory fashion. This effort combines hardware and software design for original radiation and air quality measurement devices; visualizations which are made available online and as applications for mobile and desktop; strong public outreach and education programs; and open forums for discussion of radiation, air pollution, and other hazards. The Safecast system is agile and flexible in terms of development and deployment, and all designs, software programs, and data is provided on an open-source basis. In addition, because the group takes no public stance either for or against nuclear power, it has become an important unbiased source of information regarding radiation risks. The Fukushima Daichi NPP disaster provided a crucial opportunity to evaluate the state of preparation on the part the powerplant operator, government agencies, and international oversight bodies, to gather necessary information on radiation risks quickly and to share it both with emergency responders and the general public. The inadequacy of this preparation and the chaotic nature of inter-agency and inter-governmental communication has been well noted in several official reports on the disaster, including those issued by The National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission (NAIIC) and by the International Atomic Energy Agency (IAEA). During the initial weeks of the disaster in particular, citizens were given little actionable information concerning actual radiation levels, and what was presented both by official spokespersons and in the media was often incomplete and /or contradictory. Many citizens stepped in to fill the gaps, share information and technical knowledge, and provide credible independent alternatives to official information, and Safecast has been held up as the most successful and noteworthy example. The experience of the Safecast project provides an extremely instructive opportunity to evaluate the potential for citizen scientists to make crucial public contributions in emergency situations as well as on a longterm basis, and to help formulate guidelines for the most mutually beneficial relationships between citizens' groups and government. This paper will describe the methodology and toolsets Safecast has developed and deployed, as well as a summary of the key results obtained to date, and lessons learned.