

Short Communication:

Information management of the Fukushima reactor accident in Austria

Steinhauser Georg*, Villa Mario, Bernt Nico, Böck Helmuth, Chudy Michal, Gerstmayr Michael, Handsteiner Johannes, Hainz Dieter, Hajek Michael, Kulenkampff Tobias, Langegger Rupert, Merz Stefan, Mischitz Robert, Musilek A., Radde Eileen, Rauch Helmut, Salletmaier M., Srajer Johannes, Sterba Johannes H., Stettner C. and Veit Monika

Vienna University of Technology, Atominstitut, Stadionallee 2, 1020 Wien, AUSTRIA

*georg.steinhauser@ati.ac.at

Abstract

The Fukushima Reactor Accident proved to be not only a challenge for Japanese nuclear engineers but also for nuclear scientists around the globe when dealing with the pressure of the media for new and reliable information. The lack of information – probably a result of the destroyed infrastructure due to the earthquake and the tsunami – was the greatest problem the nuclear scientists from the Atominstitut in Austria had to deal with. Further, due to the often uninterrupted series of interviews, it turned out to be problematic to keep ourselves up to date with the recent development in Japan. We could solve this problem by dividing the available human resources into an “information gathering division” and an “information distribution division”. The process of gathering, cross checking and evaluating the incoming news was performed in Atominstitut’s information center.

This internal institution was formed spontaneously by a set of five to ten experienced, advanced and graduate students who voluntarily provided reliable information to the scientific staff which then could be communicated to the media, the public and the authorities. We found that the availability of competent student volunteers was the only way to deal with the enormous public demand for reliable information. Further, thanks to the availability of the TRIGA Mark II reactor as a research tool, the Atominstitut condenses much of the nuclear expertise in Austria. These facts set our university in a privileged situation compared to other institutions which also searched for information. Since the Vienna University of Technology regards itself as an unbiased partner of the population, this was the only way to provide factual and unemotional information. The public feedback to this approach was overwhelmingly positive.

Keywords: Fukushima Reactor Accident, Japan, disaster management, environment, information management, media management.

Introduction

The Fukushima Reactor Accident: The Tōhoku earthquake (magnitude 9.0 M_w) and the resulting tsunami

on March 11, 2011, caused an accident in the nuclear power plant (NPP) of Fukushima Daiichi (Fukushima I, prefecture of Fukushima, Japan). The accident affected primarily four of six boiling water reactor (BWR), namely Fukushima I-1 (thermal power 1380 MW), Fukushima I-2 and -3 (thermal power of 2381 MW), as well as the spent fuel pond of Fukushima I-4.

Reactors Fukushima I-1, -2 and -3 were in operation at the time of the earthquake, three were down for routine inspection (Fukushima I-4, -5 and -6). The emergency shut-down system brought down the nuclear chain reaction in reactors 1-3 safely. It is yet unclear to which extent the earthquake alone had damaged the reactors. In any case, the decay heat caused damage to the nuclear fuel when the emergency cooling system failed after the tsunami had destroyed the emergency power supply. Large amounts of radionuclides were released into the environment during the weeks after the accident on 11 March 2011, causing the evacuation of thousands of people on a local scale and much concern on a global scale.

Without a doubt, we will learn much more on the accident and the effects on the reactors and spent fuel ponds in the near future. The present paper, however, reports on our efforts in the information management of the Fukushima reactor accident in Austria shortly after the accident.

The situation in Austria

Austria does not operate NPPs and considers itself as a generally anti-nuclear country. A considerable percentage of Austrians are threatened by the sole existence of NPPs. Consequently, the media feedback in Austria was enormous. We observed that due to the apocalyptic news, many Austrians were virtually terrified. Probably due to the destroyed infrastructure in Japan, the flux of information from Japan, however, was poor. This led to all-time speculative reports in the media, causing panic in the Austrian population¹⁻⁴. The request for potassium iodine (KI) tablets in pharmacies was suddenly increasing, although the authorities did not release any recommendation for the acquisition of KI pharmaceuticals. In Austrian tabloid papers, the fatalities caused by the quake and the tsunami were linked to the release of radio nuclides from the reactors⁵.

This all led to a strong uptightness of the Austrian population. The lack of information caused hysterical

public reactions and fed conspiracy theories (“The authorities hide the true facts”) and supported absurd theories in the Austrian population (e.g. that the Fukushima reactor accident caused the earthquake and the tsunami and not vice versa). We observed that after some days of apocalyptic media reports, the public was set into a “media reality”, with many people increasingly losing the connection to the challenges of their everyday life.

The Atominstitut’s information center: The Atominstitut of the Vienna University of Technology operates the only remaining nuclear facility in Austria – the TRIGA Mark II research reactor. With 49 years of experience in the nuclear field, Austria’s scientific nuclear expertise is much concentrated at the Atominstitut. With an increasing level of public panic, the demand for fact-based information became obvious very soon. As a spontaneous reaction to the lack of information, a set of graduate and about-to-graduate students established an information center in the rooms of the Atominstitut.

Up to ten colleagues searched for confirmed news on the Fukushima reactor accident, relying primarily on independent authorities, such as the International Atomic Energy Agency (IAEA)⁶, the Japanese Atomic Energy Agency (JAEA)⁷, the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT)⁸, the United States Environmental Protection Agency (EPA)⁹ as well as the UC Berkeley Nuclear Engineering Air Monitoring Station¹⁰. Further, the Japan Atomic Industrial Forum Inc. (JAIF)¹¹ as well as World Nuclear News¹² were found to be reliable non-authority and non-university sources of serious information. This information was obtained primarily from the web. Further, the information center was successful in contacting people who are experienced in the operation of comparable BWRs and even people who are familiar with the Fukushima NPP.

Many of the students in the information center have experience from summer jobs in NPPs and proved to be competent for dealing with the situation. Of course, the work of the information center was supported by the scientific staff of the Atominstitut, in case some specific, challenging questions arose. The typical case, however, was that the information center informed the staff about recent developments. The information gathered was filtered before further distribution by rejecting news that were not compatible with known design information of the affected power plants, inconsistent with scientific analysis or contradicted by other verified news items.

At the end of “internal” information process, the scientific staff of the Atominstitut could inform the public in numerous interviews, relying on the facts they have obtained from the information center. We could observe that splitting the available human resources in a “gathering information division” (the students of the information center) and a “distributing information division” (the

scientific staff being requested for the interviews) was a very successful way of managing this crisis. We installed an e-mail address (info@ati.ac.at) for questions on the Fukushima reactor accident from the public and the media. Some members of the information center not only gathered information but also answered questions from the public. The majority of questions concerned travel information and imported goods from Japan. Scientifically challenging questions were answered only after consultation of senior scientists at the Atominstitut.

Bilance

The appearance of members of the Atominstitut in the media helped the public to better understand the current situation of the Fukushima reactors and helped to calm down the public level of panic. Even the media increasingly relied on the Atominstitut’s fact-based view of the Fukushima reactor accident during the week from 14-20 March 2011. Due to our (and others) efforts, the news coverage on the Fukushima reactor accident in Austria came down to a more realistic and unagitated estimation of the situation and the proportion of “apocalyptic” headlines decreased.

In summary, the Atominstitut and its information center tried (and proved) to be a source of realistic information for the media in 28 TV interviews, 26 radio interviews, 52 print and online media interviews. Further, we answered approximately 900 questions from private individuals via e-mail and telephone (status of May 2011). Our expertise was also requested by Austrian authorities (Foreign Ministry; Civil Defense Association) and companies that have business connections to East Asia.

Conclusion

The information center thus was of invaluable importance for realistic estimation of the radiological consequences in Austria. While the Atominstitut’s scientific staff was busy answering telephone requests and giving interviews, the information center provided them with reliable and confirmed information. Without the information center, the scientific staff undoubtedly would not have had the time to acquire reliable information by themselves. Updates on the current situation were sent via e-mail or communicated personally or via telephone. That way, it was possible to provide the most updated information to the media. Insider information obtained from research collaborators worldwide helped to present truly new information to the public.

In contrast to the media, who are in a competition for the “best” information, we obtained readily provided insider information due to our university network including research partners in Japan and globally. Hence we can conclude that a university is the source of choice for reliable information in such event. Following the “mission statement” of the Vienna University of Technology – “Technology for the people” – we regard this work as part

of science communication, which, in this particular case, helped to decrease the level of unjustified panic in Austria. Consequently, un-sensational Public Relation work and risk communication should be any universities' main objective during such crises. Thanks to the many enthusiastic and competent students, the establishment of the information center was not only possible but proved to be a huge success. The image of the Vienna University of Technology was raised by this activity.

Furthermore, it is important to emphasize that the only thanks to the availability of the TRIGA Mark II research reactor, the Atominstitut condenses much of the nuclear expertise in Austria. Without the reactor and the associated experience and knowledge of its staff and its users, it would not have been possible to independently assess the current situation in Japan due to a lack of practical experience in the fields of reactor physics, radiochemistry, nuclear physics, radio ecology and radiation physics.

Lastly, on the occasion of this never-expected and sudden incident and with having the experience of handling the resulting crisis at hand, we will try to prepare better for the future.

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