

Experience of using CTBTO data

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The CTBTO

- *Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organisation* (www.ctbto.org)
- **Global network** of monitoring stations for **radionuclides** (aerosols and gasses) as well as seismic, hydroacoustic and infrasound monitoring.

Radionuclide stations



80 stations (63 now certified),
40 of these are to be able to detect **noble gasses** (19 now)

Distribution of CTBTO data

- The distribution of CTBTO data is restricted, but:
 - Every country that has a monitoring station can **make the data from its own station public**
 - Every state party to the treaty can operate a *National Data Centre* (NDC) and through the NDC **get access to ALL data in the network** (but not make it public)

CTBTO measurement routine

- **Collect** for **24 h** ($> 500 \text{ m}^3/\text{h}$)
- **Store** sample for decay for **24 h**
- **Gamma spectrometric measurement** (using HPGe) for **24 h**
- **Every 2 h** results are sent by satellite link to CTBTO Vienna and are available to National Data Centres (NDC) in each country

CTBTO results for scientific work

CTBTO disclaimer

- **CTBTO disclaimer:**

NOTE: The event screening results represented here are currently based on preliminary capabilities. Users should be advised to use and interpret these products with caution. Citation or research use of these products is discouraged.

- As a routine, **true coincidence summing (TCS)** corrections were NOT applied, since they are not needed for the primary purpose of the network

Effect of TCS corrections

- Not applying TCS corrections means:
 - Concentrations are too low for some radionuclides (e.g. Cs-134)
 - Estimations of nuclide concentration ratios become wrong (e.g. in case of Fukushima the ratio of Cs-134/Cs-137 could be wrongly reported as ca. 0.8 instead of ca. 1)

CTBTO response to Fukushima

- Strong demand for CTBTO data
- Some TCS uncorrected data found its way into scientific literature
- CTBTO started right away to make data available for the IAEA
- Based on Fukushima experience the CTBTO applied true coincidence correction to major fission products using Monte Carlo based correction factors.

The CTBTO has been willing to respond to the requirements for data and their use, but it is bound by the restrictive terms of the agreement.

CTBTO TO SHARE DATA WITH IAEA AND WHO

VIENNA - The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) has started sharing its monitoring data and analysis reports with the International Atomic Energy Agency (IAEA) and the World Health Organization (WHO). The CTBTO is responding to respective requests communicated on 17 March to use its data in assessing the situation following the recent nuclear accident in Fukushima and the possible dispersion of radioactive substances in Japan and the wider region.

IAEA perspective

Denis Flory, IAEA Deputy Director General and Head of the Department of Nuclear Safety and Security

Fukushima had “collateral benefits” for the scientific community and for all of us, because it brought us much closer together and gave us the opportunity to work closer with the CTBTO and other organizations. The CTBTO data was made available to the IAEA within the first hour of the accident, and it is now available on a permanent basis to the agency. The IAEA’s Fukushima Monitoring database contains more than 1 million data measurements from different sources.

Iceland in the media spotlight

March 22nd

- IRSA contacted in the morning by **Reuters:**
 - **First country in Europe where I-131 from Fukushima has been detected**
 - Any comments?
 - What about the health effects?

Response

- Reporter promised a full story if he could call back in a couple of hours
- Someone had accessed our station data while still being counted and a diplomat in Vienna had leaked it to the press
- Quick evaluation, contacts with European colleagues to put values into perspective (incl. comparison with Chernobyl).
- Reporter got full story a couple of hours later, news distributed globally in the afternoon: **Not a health issue for Europe!**

- "Over Europe there would be no concern about human health."
- Pálsson added: "From a health aspect the focus is on Japan."
- Earlier, the diplomatic sources said tiny traces were picked up in Iceland by a network of international monitoring stations as they spread eastwards with winds from Japan across the Pacific, North America and the Atlantic.
- "They measure extremely small amounts," one Vienna-based diplomat said. "It has nothing to do with any health risks."
- The Comprehensive Test Ban Treaty Organization (CTBTO), a Vienna-based U.N. body for monitoring possible breaches of the atom bomb test ban, has 63 stations worldwide for observing such particles, including one in Reykjavik, the Icelandic capital.
- The CTBTO continuously provides data to its member states, but does not make the details public.

(excerpts from the Reuters news report)

Lesson

- No 'remote place'
- Each of us may need to answer a global news agency
- Often we would only get **one opportunity** to convey the message!

Conclusions

- The CTBTO data can be a **very powerful tool** for analysing global distribution of radionuclides from a nuclear accident
- How individual countries utilise global data through their own NDC is a domestic issue
- Individual countries can contribute by
 - (a) **making their own data public** and
 - (b) informing **where the data can be found** (e.g. with help of CTBTO)
- The **NDCs** can increase their cooperation in **sharing corrected data suitable for scientific use**

