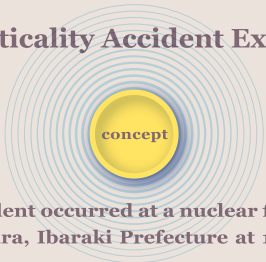


JCO Criticality Accident Exhibition



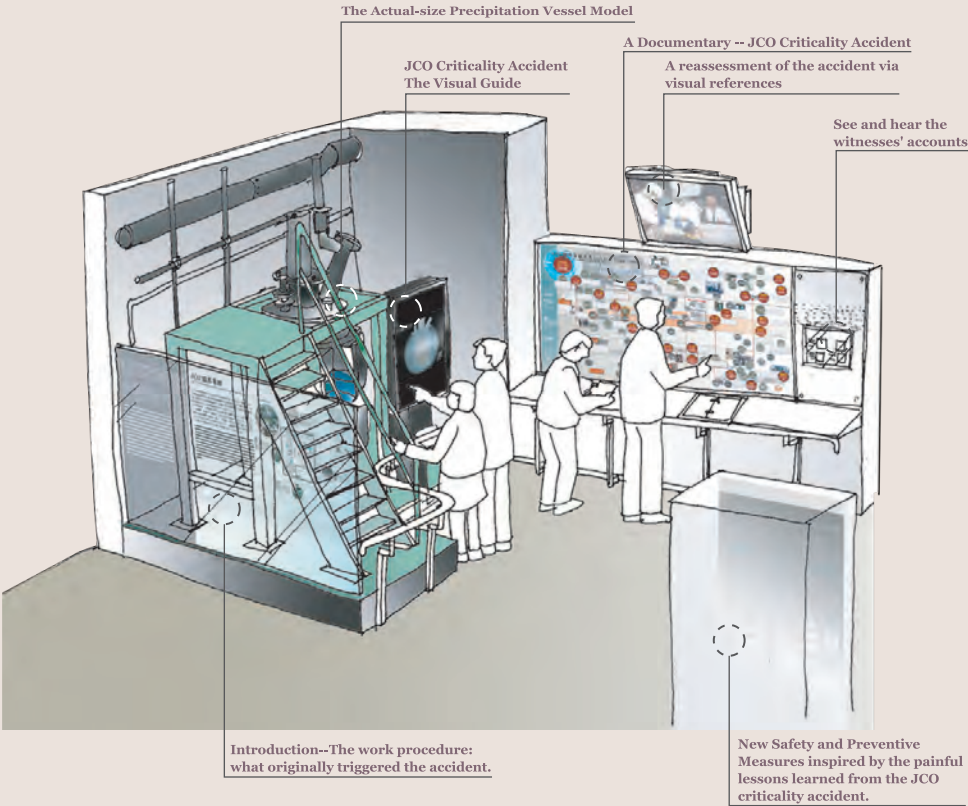
A nuclear criticality accident occurred at a nuclear fuel fabrication facility of JCO Co.Ltd. in Tokai-Mura, Ibaraki Prefecture at 10:35 a.m. on September 30, 1999.

In the facility, highly enriched uranium solution (18.8% enrichment) was being processed for making the nuclear fuel of the experimental fast-neutron reactor "Joyo". At the time of the accident, workers manually poured uranyl nitrate solution into a tank, called precipitation vessel, directly from a stainless steel bucket several times. Eventually the amount of uranium in the vessel exceeded the critical mass, and violent nuclear fission of uranium took place. Intense neutron and gamma radiation from the fission reactions was released to the surroundings, and three workers at the scene were heavily exposed to radiation. Two of them later died from acute radiation sickness.

Residents in the vicinity of the site were requested to evacuate, and others living within 10 km from the site were requested to stay indoors. The nuclear critical state was terminated in about 20 hours by cooperative actions of organizations concerned and specialists.

The JCO criticality accident was a great shock to people not only in Japan but also in the world, shattered our confidence in nuclear safety, and caused economical damages to local communities due to rumors.

We determined that we should never have such an accident again and that we should not let memories of the accident fade away. To express our determination, here we open the restored building of the precipitation vessel, the core of the accident.



Directory
■ Hours
9:00 ~ 16:00
■ Entrance Fee
Free
■ Closed
Mondays(When a Monday falls on a National Holiday, the following Tuesday)/Year-end and New Year Holidays

Access
■ Via Joban Expressway
About 10 min. from Tokai Smart Interchange (IC) (5km)
About 30 min. from Naka Interchange (IC) (14km)
About 20 min. from Hitachi-Minami-Ota Interchange (IC) (8.5km)
■ Via Higashi Mito Road
About 20 min. from Hitachinaka Interchange (IC) (11km)
■ Via Joban Railway
Get off at Tokai Station. Take a taxi (about 10 min. ride)

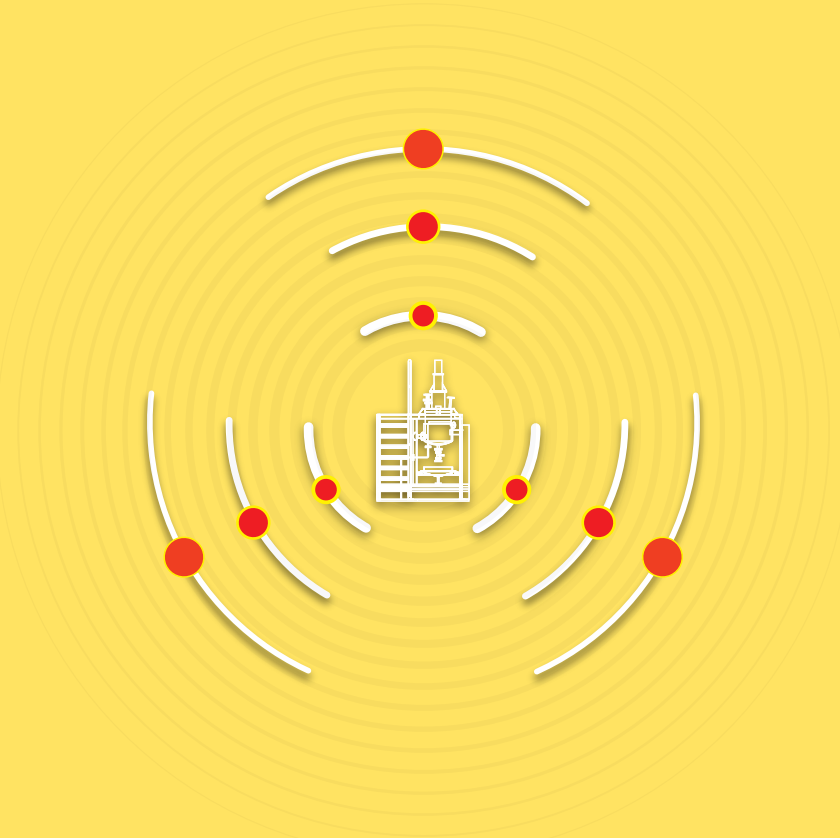
Inquiry
Ibaraki Atomic Energy Consultation

225-2 Muramatsu, Tokai-mura, Naka-gun, Ibaraki Prefecture 319-1112, Japan
TEL : 029-282-3111
FAX : 029-283-0526

<http://www.ibagen.or.jp>



JCO Criticality Accident Exhibition



We believe it is most important that we do not linger in fear, but that we understand the facts correctly and reclaim confidence in the safety of our daily life and health.

Excerpt from "Koho Tokai" dated October 30, 1999

■ Prologue
• Introduction--The work procedure: what originally triggered the accident.
• The Outline of the JCO Criticality Accident
This display shows a recreation of the very site where the criticality accident occurred and explains the work procedure by which the accident was triggered.



■ The Site of the Accident
• The Site of the Accident
• The Actual-size Precipitation Vessel Model
• JCO Criticality Accident -- The Visual Guide
• What is a "criticality accident"?
Here you can see the actual-size model of the precipitation vessel in which the criticality occurred.



■ Reassessing the Accident
• A Documentary -- JCO Criticality Accident
• A reassessment of the accident via visual references.
• Radiation Exposure Amount and Effects
• JCO Criticality Accident Q & A
Chronological visual display and graphics showing detailed information of what actually happened, how the situations were handled, and what the problems were.



■ Never let them fade away: the experiences and lessons learned
• See and hear the witnesses' accounts (the Mayor, residents, fire station workers, nuclear energy experts, etc.)
• Reference Books Database
• Reference Materials Database
• Glossary Database
The audio-visual materials provide you with witnesses' own account of the accident as well as the accumulated list of records thereof.



■ Safety Measures
• New Safety and Preventive Measures inspired by the painful lessons learned from the JCO criticality accident
Introducing to the new safety and preventive measures incorporating lessons learned from the accident and its aftermath.



Time-Sequence Diagram of the JCO Criticality Accident and Post-Accident Measures [1999 – 2005]

Timeline of Key Events:

- Sep 30, 1999 10:35:** Criticality reaction occurred. Three workers were exposed seriously to radiations.
- Oct 1, 1999:** Water drainage work. Radiation measurements in the vicinity of the accident place.
- Oct 2, 1999:** It became clear that illegal actions of JCO caused the accident.
- Oct 3, 1999:** The end of December. Legal actions taken.
- Oct 6, 1999:** The Prefectural Police started a compulsory investigation.
- Oct 9, 1999:** The Prime Minister inspected the JCO site.
- Oct 11, 2000:** Six persons were arrested.
- Oct 15, 1999:** IAEA investigation on JCO commenced.
- Oct 27, 1999:** The parent company of JCO announced its intention to compensate detriment.
- Dec 21, 1999:** The first death due to a nuclear accident in Japan.
- Mar 3, 2003:** Mito District Court sentenced JCO.
- Jun 6, 2005:** Removal of the facilities involved in the accident.
- Dec, 2005:** 99.9% of agreement on the compensation was settled.
- Sep 30, 2000:** Implementation of nuclear emergency drills for residents' participation.
- Mar 27, 2001:** The Tokai Village Atomic Energy Disaster Prevention Week was established.
- Feb 20, 2005:** Publication of a supplementary textbook on atomic energy.
- Mar 22, 2002:** Establishment of an Off-Site Center.

Tracks and Key Events:

- Tokai-Mura Village office and villagers:**
 - 11:33: Tokai Village received the initial alert (via telephone).
 - 12:15: Tokai Village set up a HQ for the accident.
 - 12:30: Tokai Village call for people to stay indoors.
 - 15:00: Tokai Village Mayor decided to evacuate residents in the vicinity of JCO.
 - 15:45: Neighbourhood residents started to evacuate.
 - 20:10: Residents evacuation finished.
 - 23:30: JCO made an apology.
- Nuclear laboratories and firms in Tokai area:**
 - 12:35: Nuclear energy organizations set up individual HQ for the accident.
 - 13:10: Due to the lack of an emergency notification system, considerable time was wasted before the neighbouring municipalities knew of the accident.
 - 15:30: Curfew for school children was called off, so they could return home.
 - 17:10: Radiation monitoring for evacuated residents.
 - 22:30: Discussion how to stop the criticality reaction.
- Ibaraki Prefectural office and inhabitants:**
 - 11:22: Ibaraki Pref. received the initial alert (via fax).
 - 11:25: Ibaraki Pref. asked the Environment Pollution Research Center to monitor environmental radiations.
 - 12:30: Press release "A possibility of a criticality accident at JCO".
 - 16:10: Ibaraki Pref. asked JNC to measure neutrons.
 - 16:30: The curfew within the 10 km radius was lifted.
 - 22:30: Curfew.
- Central government ministries and agencies:**
 - 11:19: Science and Technology Agency received the initial alert (via fax).
 - 12:40: The Prime Minister received the initial report.
 - 14:00: The Nuclear Safety Commission concluded that it was a criticality accident.
 - 15:30: The NSC summoned an Emergency Advisory Working Team.
 - 16:51: The first meeting of STA on the accident.
 - 18:30: NSC dispatched two members to the site.
 - 21:00: The first meeting of the government HQ (Chairperson: the Prime Minister).
 - 22:00: Road blocks.
 - 22:28: East JR Co. stopped train services between Mito and Matsuyama stations.
 - 22:30: Termination of the criticality reaction was announced.
 - 27:45: The Joban Expressway was opened.
- Cause investigation:**
 - Dec 9, 1999: Nuclear industries organized Nuclear Safety Network (NS Net).
 - Dec 5, 1999: Preparation of criticality accident consultation desk.
 - Oct 13, 2000: Assessment report on radiation exposure from the accident.
 - Oct 20, 2000: Tokai NOAH accord was set.
 - Dec 10, 1999: A task force office for compensation measures was set up in Ibaraki Pref.
 - Mar, 2001: Publication of a supplementary textbook on atomic energy.
 - Sep, 2000: The atomic energy safety accord with nuclear organizations was expanded to many municipalities.
 - Dec 17, 1999: Enactment of a special law for nuclear disasters.
 - Nov 5, 1999: An emergency proposal and an interim report by the Accident Investigation Committee were submitted.
 - Nov 4, 1999: NSC organized a Health Management Inspection Committee.
 - Dec 24, 1999: Submission of an investigation report by the Accident Investigation Committee.
 - Apr 24, 2000: STA confirmed the level of the accident to be Level 4.

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 - 16:10: Ibaraki Pref. asked JNC to measure neutrons.
 - 22:20: Ibaraki Pref. set up a HQ.
 - 22:30: Governor of Ibaraki Pref. gave press conference: "Requested a temporary curfew for 340 thousand residents within a 10 km radius".
 - 22:30: The curfew within the 10 km radius was lifted.
- Central government ministries and agencies:**
 - 11:19: Science and Technology Agency received the initial alert (via fax).
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