

June 27, 2013

J-PARC Center

On a delay in suspending the operation of the accelerator complex and a delay
in turning off the ventilation fans at the Hadron Experimental Hall
in association with the radioactive material leak accident at the Hadron
Experimental Facility of J-PARC

First, we would like to express our deep apologies for the accident that occurred at the Hadron Experimental Facility (hereafter HD Facility) of J-PARC on 23 May 2013.

We note that the operation of the accelerator systems at J-PARC was not promptly suspended in association with this accident. We also note that the ventilation fans in the Hadron Experimental Hall (hereafter HD Hall) were operated for a prolonged period of time. Delays in acknowledging the occurrence of the accident and inadequate communication caused the operation of the accelerator systems to continue for some time. Also, an entangled situation at an early stage of responding to the accident led to a failure in promptly issuing instructions for turning off the ventilation fans. We deeply regret over these serious oversights which caused strong concerns particularly among the members of local communities, and would like to describe in what follows the situations that led to the delays in taking these actions.

1. The delay in terminating the second operation of ventilation fans in the HD Hall.

- (1) On May 23, we started the second operation of ventilation fans at around 17:30. When checked at around 18:00 of the 24th, the area monitors at the boundaries of the radiation controlled area of the HD Facility were already indicating normal values. They continued to indicate normal values afterwards.
- (2) On May 25 during the on-site investigation by officers from the local authorities, we were inquired over possible safety concerns associated with operation of the ventilation fans. Since the dose rates had returned to a normal level, we responded that there were no safety concerns. (Normal values from the area monitors were re-confirmed on May 25.)

From then on, during the activities of responding to the accident, it did not come to our attention to consider terminating the operation of the ventilation fans until 11:26 of May 26, when a facility-wide shut-down procedure was conducted.

- (3) Figure 1 shows the data from a gamma-ray area monitor in the HD Hall. It indicates that most of the release of radioactive material to outside the HD Hall took place within approximately 3 hours after starting the second operation of the ventilation fans at around 17:30.

Figure 2 shows the data from the gamma-ray area monitor, indicating a continual decrease from then on. This is due to decays of the radioactive material stuck on the floor surfaces and other objects in the HD Hall.

Figure 3 shows the locations of monitoring posts and monitoring stations at the Nuclear Science Research Institute and the Nuclear Fuel Cycle Engineering Laboratories (NCL). Figure 4 shows the measured values of radiation dose rates.

Three monitoring locations of the NCL's monitoring system observed temporary rises in the dose rate at around 15:00 and around 17:30 on May 23, in coincidence with the start-up of the operation of the ventilation fans of the HD Hall. The subsequent data shows the values within the range of normal variation. Other monitoring posts and stations show the data to be within the range of normal variation throughout the same period, irrespective of the operation of the ventilation fans. From these observations, we consider that there was no release of radioactive material to outside the HD Facility nor were there any influences caused by the continuous operation of the ventilation fans after 21:00 on May 23.

2. Delay in suspending the operation of accelerator complex

【50 GeV synchrotron (hereafter MR)】

- Beam operation in support of users' experiments of the MR was stopped at around 16:15 on May 23, along with the closure of the HD Facility.
- Tuning operation of MR was conducted from 14:47 to 22:46 on the next day, May 24.

- In this tuning operation, a proton beam was injected into the MR every several to a few over ten minutes. No beam acceleration, however, was made, and the beam power was below 1/10 of that of the normal operation in support of users' experiments at the HD hall.
- In the tuning operation, the beams from the MR were dumped onto the designated beam dump in the accelerator tunnel. No beam extraction was done toward the HD facility.
- At 22:46, when the tuning was completed, we stopped the tuning operation of the MR.

【Linear Accelerator (LINAC) and 3 GeV Synchrotron (RCS)】

- At 22:15 on May 24 the an on-site response headquarters determined that the incident on the previous day (May 23) is classified under the statutory provision for reporting as an accident, and after reporting the case to the relevant authorities and organizations, we stopped the beam operation of the LINAC and RCS at 0:46 on May 25, as instructed by the Director of J-PARC Center.

【 Neutrino Experimental Facility (NU Facility) and Materials and Life Science Experimental Facility (MLF)】

- No experiments were being carried out in the NU Facility on May 23 and 24. Only equipment maintenance work, adjustment of devices and related activities were being conducted.
- Experiment(s) with using neutrons and muons were being carried out in the MLF on May 23 and 24. Execution of all the experiments was terminated at 0:46 on May 25, as instructed by the Director of J-PARC Center.

Reflecting on inadequate responses described above, we commit ourselves to make every effort in investigating the causes of this accident and in creating measures to prevent recurrence of similar accidents with inputs and advices from the External Expert Panel.