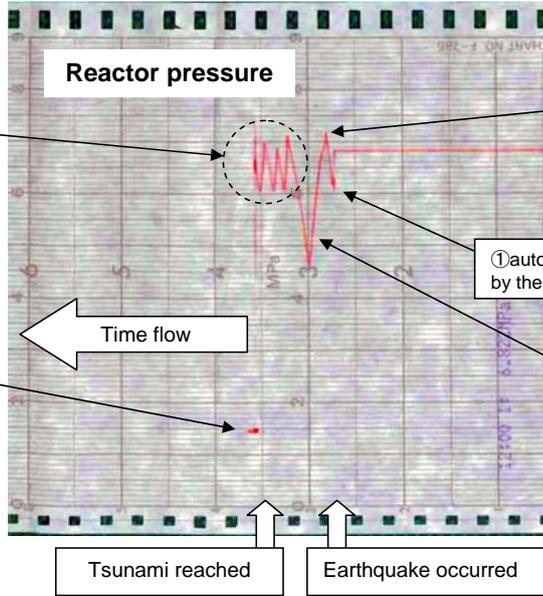


Plant data of Fukushima Daiichi Nuclear Power Station

Unit 1's record

④operation of Safety Relief Valve etc
We assume that in line with the increase of reactor pressure, Safety Release Valve or Isolation Condenser repeated operation and the reactor pressure fluctuated.

⑤Recorder stopped because of Tsunami
We assume that because of Tsunami, electricity for instruments was lost, the pressure transmitter's signal became abnormal and the chart stopped.



②MSIV closed
As MSIV (4 inside the reactor containment vessel, 4 outside) closed, steam was contained in the reactor and the reactor pressure went up.

①automatic scrum of reactor by the earthquake

③operation of Isolation Condenser
As the reactor pressure went up, Isolation Condenser started automatically (normal operation) and the reactor was depressurized and cooled. After that, Isolation Condenser stopped and the pressure went up.

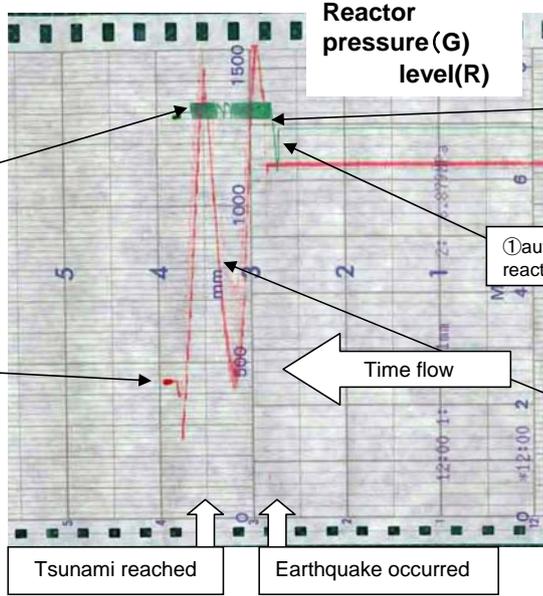
The other major matters identified

- scrum occurred by the earthquake.
- all control rods were inserted completely.
- emergency diesel generator started up normally and established voltage.
- by closing MSIV, the main steam flow went down to zero. There was no sign of rupture of piping.
- the temperature rise in the RCV became moderate as the time went by. There was no sign of rupture of piping in the RCV.
- The monitored figures at the exhaust stack were stable, apart from noise. No abnormality was observed.

Unit 2's record

④operation of Safety Relief Valve
We assume that in line with the increase of reactor pressure, Safety Release Valve repeated operation and the reactor pressure fluctuated. (green band)

⑤Recorder stopped because of Tsunami
We assume that because of Tsunami, electricity for instruments was lost, the pressure transmitter's signal became abnormal and the chart stopped.



②MSIV closed
As MSIV (4 inside the reactor containment vessel, 4 outside) closed, steam was contained in the reactor and the reactor pressure went up.

①automatic scrum of reactor by the earthquake

③RCIC started up
As the reactor pressure went up, Safety Relief Valve operated to contain pressure. But because of this, the water level went down. In order to cool the reactor and recover the water level, the RCIC started up.

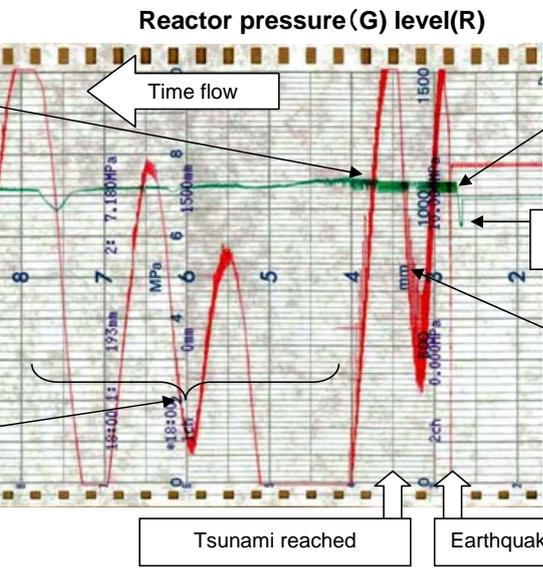
The other major matters identified

- scrum occurred by the earthquake.
- all control rods were inserted completely.
- emergency diesel generator started up normally and established voltage.
- by closing MSIV, the main steam flow went down to zero. There was no sign of rupture of piping.
- the temperature rise in the RCV became moderate as the time went by. There was no sign of rupture of piping in the RCV.
- Units 1 and 2 are sharing the same exhaust stack. The evaluation on the monitored figures is the same as Unit 1.

Unit 3's record

④operation of Safety Relief Valve
We assume that in line with the increase of reactor pressure, Safety Release Valve repeated operation and the reactor pressure fluctuated. (green band)

⑤operation of RCIC
We assume that the reactor level was controlled by the operation of RCIC



②MSIV closed
As MSIV (4 inside the reactor containment vessel, 4 outside) closed, steam was contained in the reactor and the reactor pressure went up.

①automatic scrum of reactor by the earthquake

③RCIC started up
As the reactor pressure went up, Safety Relief Valve operated to contain pressure. But because of this, the water level went down. In order to cool the reactor and recover the water level, the RCIC started up.

The other major matters identified

- scrum occurred by the earthquake.
- all control rods were inserted completely.
- emergency diesel generator started up normally and established voltage.
- by closing MSIV, the main steam flow went down to zero. There was no sign of rupture of piping.
- the temperature rise in the RCV became moderate as the time went by. There was no sign of rupture of piping in the RCV.
- The monitored figures at the exhaust stack were stable. The next day, there were movements that we assume by the influence of the increase of radioactive dose in the power station.

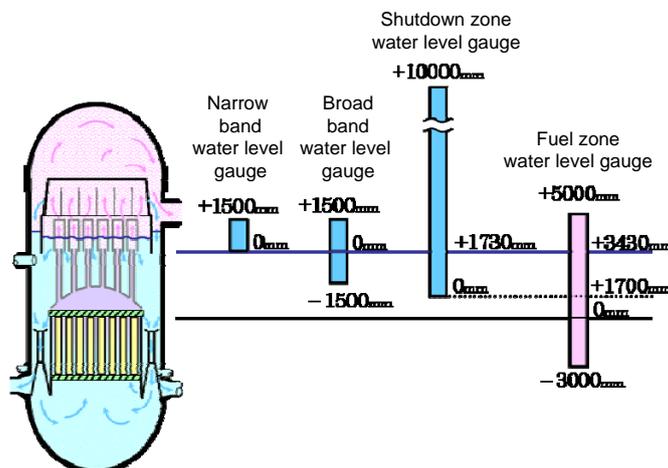
Plant data of Fukushima Daiichi Nuclear Power Station

The category of data in the report and the operation report

		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Note
The status of the plant at the time of the earthquake		In operation	In operation	In operation	Maintenance (removing fuel)	Maintenance (RPV pressure test)	Maintenance (RPV closed)	
Media	Recorder chart	Collected: From March 11th to stop of chart by Tsunami. As for Units 5 & 6, up to cold shutdown. After resumption of electricity supply for instruments, recording plant related parameters for continuous data collection.						
	Annunciator record	Collected: collected printed data. As for Unit 2 with recording function, collected that data also.			No data In the process of replacement	Collected: collected the annunciator log. Periodic record was suspended during maintenance.		
	Operation diary	Collected: collected the operation diary on March 11th. Collected the taking over diary (night shift, March 10 th – day shift, March 11th). For some of units, collected memos at the time of the incident.						
	Process computer	No data No function to record	Collected	No data No function to record	No data In the process of replacement	Collected	No data No function to record	
	Transient events record	Collected: by removing the HDD and supplying temporary electricity				Collected: test operation after replacement	No data Stopped during maintenance	
Operation record	<ul style="list-style-type: none"> • Isolation Condenser • RCIC • HPCF • SRV • RCV vent • status and resumption of electricity supply • alternative water injection by firefighting pump, seawater etc • treatment of puddle water in T/B, outdoor trench and outdoor duct 				We assembled the operation record from correspondence between the HQ and the power station and the operation from the operation diary.			

Category and content of data in the report

Category	Content
Recorder chart	This is a commonly used chart to record various data at the power station. This records data by colored ink on roller paper.
Annunciator record	This is part of output from the process computer. This records the time of annunciator and the response of plant system. This is printed and kept as record by paper.
Operation diary	Plant operators in the main control room records data and operation record to the operation diary. This also includes the taking over memo between shifts.
Process computer	Process computer records annunciator record and plant parameters. The function is similar to below transient events record.
Transient events record	The purpose of this is to supplement the recorder chart. This records plant parameters a few minutes before and thirty minutes after malfunction



Reactor water level gauges, Unit 1