Status of nuclear power plants in Fukushima as of 22:00 March 17 (Estimated by JAIF)

Power Station	Fukushima Daiichi Nuclear Power Station					
Unit	1	2	3	4	5	6
Electric / Thermal Power output (MW)	460 / 1380	784 / 2381				1100 /3293
Type of Reactor	BWR-3	BWR-4	BWR-4	BWR-4	BWR-4	BWR-5
Operation Status at the earthquake occurred	In Service -> Automatic Shutdown			Outage	Outage	Outage
Core and Fuel Integrity	Damaged	Damaged	Damaged	No fuel rods	Not Damaged	Not Damaged
Reactor Pressure Vessel Integrity	Unknown	Unknown	Unknown			
Containment Vessel Integrity	Not Damaged	Damage Suspected	Damage Suspected	Not Damaged	Not Damaged	Not Damaged
Core cooling requiring AC power	Not Functional	Not Functional	Not Functional	Not necessary	Not necessary	Not necessary
Core cooling not requiring AC power	Not Functional	Not Functional	Not Functional	Not necessary	Not necessary	Not necessary
Building Integrity	Severely Damaged	Slightly Damaged	Severely Damaged	Severely Damaged	Not Damaged	Not Damaged
Water Level of the Rector Pressure Vessel	Around half of the Fuel	Higher than half of the Fuel	Around half of the Fuel	Safe	Safe	Safe
Pressure of the Reactor Pressure Vessel	Stable	Unknown (run out of battery)	Stable	Safe	Safe	Safe
Containment Vessel Pressure	Unknown	D/W: Unknown, S/P: Atmosphere	Stable	Safe	Safe	Safe
Water injection to core (Accident Management)	Continuing (Seawater)	Continuing(Seawater)	Continuing(Seawater)	Not necessary	Not necessary	Not necessary
Water injection to Containment Vessel (AM)	Continuing(Seawater)	to be decided(Seawater)	Continuing(Seawater)	Not necessary	Not necessary	Not necessary
Containment venting (AM)	Continuing	Preparing	Continuing	Not necessary	Not necessary	Not necessary
Fuel Integrity in the spent fuel pool	(No info)	(No info)	Level Low, Starting Water Injection	Level Low, Preparing Water Injection Damage to Fuel Rods Suspected	Pool Temp. Increasing	Pool Temp. Increasing
Environmental effect	NPS border: 646.2 μ Sv/h at 11:10, Mar. 17					
Evacuation	20km from NPS * People who live between 20km to 30km from the Fukushima #1NPS are to stay indoors.					
Remarks	Immediate threat is damage of the fuels in the fuel pool outside the containment vessel at Unit-3 and Unit-4. To improve the situation of lack of water in the spent fuel pools at Unit-3 and Unit-4, Japan Self-Defense Force (JSDF) started operation for filling the pool with water in 09:48 of March 17. This operation is to drop a huge bucket of seawater from a helicopter. In addition, the police and JSDF implemented watering operation toward Unit-3 using their water cannon truck and fire engines in the evening. The effect of these operations is under evaluation.					

Power Station	Fukushima Daini Nuclear Power Station			
Unit	1	2	3	4
Electric / Thermal Power output (MW)	1100 / 3293			
Type of Reactor	BWR-5	BWR-5	BWR-5	BWR-5
Operation Status at the earthquake occurred	In Service -> Automatic Shutdown			
Status	All the units are in cold shutdown.			
Remarks	Unit-1, 2, 3 & 4, which were in full operation when the earthquake occurred, all shutdown automatically. External power supply was available after the quake. While injecting water into the reactor pressure vessel using make-up water system, TEPCO recovered the core cooling function and made the unit into cold shutdown state one by one. Latest Monitor Indication: 15.9 μ Sv/h at 12:00, Mar. 17 at NPS border Evacuation Area: 10km from NPS			

Power Station	Onagawa Nuclear Power Station		
Unit	1	2	3
Operation Status at the earthquake occurred	In Service -> Automatic Shutdown		
Status	All the units are in cold shutdown.		
Remarks	Unit-1, 2 & 3 all shutdown automatically when the earthquake occurred. Unit-2 & 3 were then led into cold shutdown state. Unit-2, which had just started operation after planned outage, got into cold shutdown immediately.		

Power Station	Tokai Daini
Operation Status at the earthquake occurred	In Service -> Automatic Shutdown
Status	In cold shutdown.
Remarks	Tokai Daini NPP, which was in full operation when the earthquake occurred, shutdown automatically. Core cooling function was gotten into service after external power supply was recovered on Mar. 13.

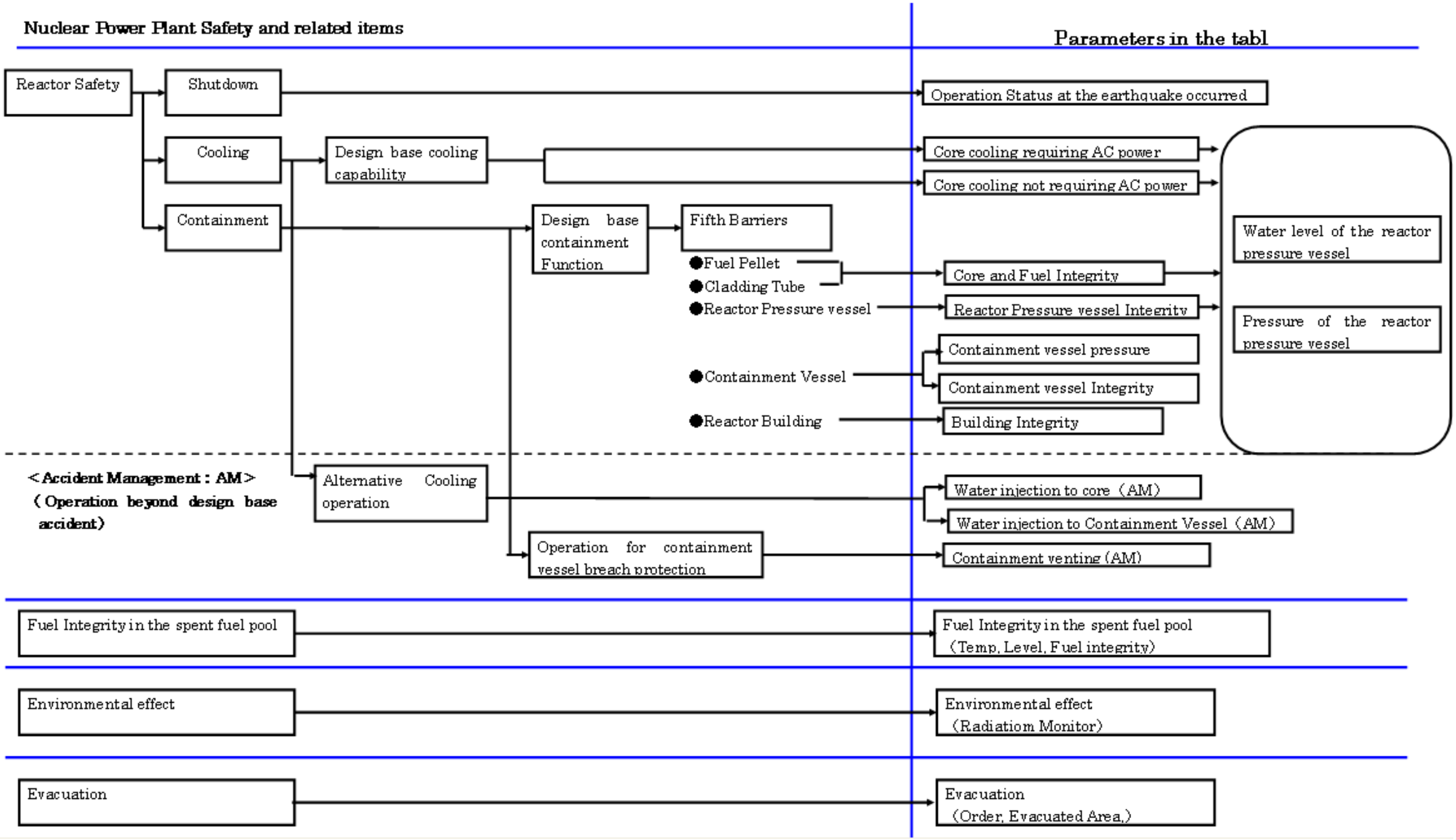
[Significance judged by JAIF]
: low
: high
: severe

[Source]
Governmental Emergency Headquarters: News Release (3/17 20:00), Press conference (3/14 11:45, 16:15, 3/15 8:00, 11:00, 16:25, 3/16 11:15, 3/17 11:31)
NISA: News Release (3/14 7:30, 3/16 14:00, 20:08), Press conference (3/16 12:00, 3/17 20:30)
TEPCO: Press Release (3/14 16:00, 17:35, 3/15 6:00, 12:00, 16:30, 23:35, 3/16 0:00, 3/17 11:30, 12:00),
Press Conference (3/14 12:10, 20:00, 3/15 8:00, 8:30, 3/16 early morning)

[Abbreviations]
INES: International Nuclear Event Scale
NISA: Nuclear and Industrial Safety Agency
SFP: spent fuel pool
TEPCO: Tokyo Electric Power Company, Inc.

Parameters in the Table

JAIF picks up these parameters to evaluate safety condition of the nuclear plants during this accident from the view point of the principles of nuclear power plant safety, which are "Shutdown", "Cooling" and "Containment". Then we create the chart. The following diagram is to show the correspondence relation of these parameters in the table to nuclear power plant safety.



Status of the Nuclear Power Plants after the Earthquake

Every efforts and measures have been taken at Fukushima Daiichi nuclear power plants. Other nuclear power plants in Japan are in normal operation or safely shutdown.