## Status of Fukushima Daiichi Nuclear Power Station

## Japan Nuclear Technology Institute Confirmed as of 8:30 on December 21, 2011

Unit-1 GE BWR3 460MWe Mark-I PCV(*) Operating since 09/27/2010	Unit-2 GE/Toshiba BWR4 784MWe Mark-I PCV(*) Operating since 11/18/2010	Unit-3 Toshiba BWR4 784MWe Mark-I PCV(*) Operating since 09/23/2010	Unit-4 Hitachi BWR4 784MWe Mark-I PCV(*) Outage since 11/30/2010	Unit-5 Toshiba BWR4 784MWe Mark-I PCV(*) Outage since 01/03/2011	Unit-6 GE/Toshiba BWR5 1100MWe Mark-II PCV(*) Outage since 08/14/2010	Plant Status
Reactor status: Auto shutdown Fuel damage Reactor water level as of 12/20 12:00 Fuel area: -/ -1850mm Reactor pressure as of 12/20 12:00 0.100/ - MPa abs (*1)	Reactor status: Auto shutdown Fuel damage Reactor water level as of 12/20 12:00 Fuel area: —/-2122 mm Reactor pressure as of12/20 12:00 0.106/ - MPa abs (*2)	Reactor status: Auto shutdown Fuel damage Reactor water level as of 12/20 12:00 Fuel area: -2077/-2243mm Reactor pressure as of 12/20 12:00 beneath the range Feedwater nozzle temperature	Reactor status: Outage All fuels removed Core decay heat removal 12/20 11:00 SFP(*) tempo 20°C(temporary thermo		Reactor status: Outage Fuel Loaded RPV head installed Reactor water level as of 12/2 12:00 Stop range: 2102mm	20 Resident evacuation 4/21 Prime Minister instructs
PCV(*) status: Pressure as of 12/20 12:00 0.1101 MPa abs 10/9 17:07 – 22:30 Cutting a pipe in the RPV spray to install a gas controlling system Core decay heat removal 6/27 16:20 Began using water processed at water processing system alongside injection from filtered water tank for reactor injection 11/20.16:04.5 for the state of the processing to the	Pa abs       Pressure as of 12/20 12:00         Obje in the RPV spray to install a lling system       Pressure as of 12/20 12:00         Dipe in the RPV spray to install a lling system       Pressure as of 12/20 12:00         Image: the abs       10/28 18:00         Pressure as of 12/20 12:00       0.111MPa abs         Image: the abs       10/28 18:00         Pressure as of 12/20 12:00       0.111MPa abs         Image: the abs       10/28 18:00         Pressure as of 12/20 12:00       0.111MPa abs         Image: the abs       10/28 18:00         Pressure as of 12/20 12:00       0.111MPa abs         Image: the abs       10/28 18:00         Pressure as of 12/20 12:00       0.111MPa abs         Image: the abs       10/28 18:00         Pressure as of 12/20 12:00       0.111MPa abs         Image: the abs       10/28 18:00         Pressure as of 12/20 target       10/28 18:00	12/20 12:00       54.6℃         PCV(*) pressure:       Pressure as of 12/20 12:00         0.1016MPa abs       7/14 20:01 Began nitrogen sealing         Core decay heat removal         8/31 ~ 9/1       Flexible hose wainstalled and started water injection into the reactor	measurement value) 5/9 onward Began work to SFP(*) bottom support str 7/31 12:44 Performed full-scale oper SFP(*) alternative system 8/20 11:34 Full-scale op of the desalination devi started	Core decay heat removal Cooling 6/24 16:35 Began cooling SFP(*) using FPC(*) SFP(*) temperature: 12/20 12:00 16.7 SFP(*): Stored units/capacity 946/1590	*) Core decay heat removal Cooling SFP(*) temperature: 12/20 12 16.0 SFP(*): Stored units/capacity 876/1770	establishment of warning area for area within 20km radius; access restriction and/or evacuation 4/22 Prime Minister lifts the instruction of staying-indoors for 20– 30km radius, establishes planned evacuation & emergency evacuation prep. areas and instructs all to comply
RPV 12/10 10:11 Started water injection from CS(*) system to the reactor 12/19 18:00 Started regular operation of PCV(*) gas controlling system As of 12/20 11:00 Injecting processed water to		into the reactor       8/31 Water was         11/30 16:26 Started nitrogen       sFP(*)'s liner drain         injection to the RPV       Sof 12/20 11:00 Injecting processed water         to the reactor pressure vessel       (FDW(*):2.8,CS(*):5.9m <sup>3</sup> /h)         7/1 11:00 Full-scale operation of       7/1		capacity	7/1 10:00 Began transferring puddle water in basement of turbine building from temporary tank to mega float	of rary 3/15 400mSv/h 4/23 17:20 Current survey map of 1F announced
8/10 11:22 Began full-scale operation of SFP(*) alternative cooling system SFP(*) temperature: 12/20 12:00 12.0 SFP(*): Stored units/capacity 292/900	water because of the possibility of fission reactions by the radionuclide gas analysis. 11/30 13:45 Started nitrogen injection to the RPV As of 12/20 11:00 Injecting processed water to the reactor	SFP(*) alternative cooling equipment SFP(*) temp. as of 12/20 12:00 13.3°C SFP(*): Stored units/capacity 514/1220				Worker exposure: As of 6/27 0:21 Cumulative total of workers with over 100mSv of external exposure during emergency work: 30 workers 8/1 14:30 Confirmed over 10 Sv/h of
10/28         Completed installation of the cover for the         Reactor Building         (*1) 6/4 11:00 onward Calculated absolute         pressure using temporary measurement         device value, recorded in place of channel A	pressure vessel (FDW(*):2.8, CS(*):6.0m <sup>3</sup> /h) 11/6 Started operation of SFP(*) radioactive material decontamination instrument SFP(*) temperature: 12/20 12:00 15.5 SFP(*): Stored units/capacity 587/1240	<ul> <li>7/26 – 27 Performed site confirmation, dosage investigation with robots and employees</li> <li>7/18 8:30 Began installing temporary roof onto turbine building</li> </ul>	 	Reception of off-site power supply 3/20 19:52 Units-5, 6 startup transformer pow 3/24 15:37 The Common SFP(*) received exte	er reception ernal power	pipe surface dose rate near the standby gas treatment system pipe joint at the main stack bottom of Units 1 and 2
purificati 6/18 10:0	00 Began full scale operation of rec on equipment installed in Units-2, 3 sc 00 – 6/20 around 10:00, 6/25 10:00 onw	reen areas plant site	$\sim$ water spraying in the using the treated water of unit 5 6	5/11 15:20 Power for Units 1 and 2 partially rd 2. 5/12 15:20 Switched Unit-4 and common SFP from Okuma Line 3 to Tohoku Electric Power 7/11 Started up and made synchronized D/G for preparation work for Yoru no Mori power line	(*)480V power supply panel Company Nuclear Line (66kV) or Units-5, 6 due to dual-line	
7/22-24 Dust sampling over reactor buildings at Units 1 through 3 via		stored uni 6375/6840 3/24 18:05 7/18 6:00 C was mainta ne water shielding	Common SFP (*) ts/capacity ) Cooling started Confirmed pool water level	6/19 19:30 – 23:45, 6/20 10:25 – 14:50 Condu highly radioactive contaminated water of cesin 6/24 12:00 Began processing via water treatm unit 8/19 19:41 Started operation of the 2nd cesiur parallel operation 12/4 around 11:33 Found that there was puddle the evaporative condensation apparatus, piled the gutter, transferred the accumulated water tank by under water pump	um adsorption unit ent facility fresh water processing n adsorption instrument, and e water inside the barrier around sandbags around the gap and in	(*) PCV: Primary containment vessel made of steel RHR: Residual heat removal system RHRS: Residual heat removal seawater system SFP: Spent fuel pool FPC: Fuel pool cooling system CST: Condensed water storage tank SPT: Suppression pool water surge tank CS: Core spray line FDW: Feed water line