Overview of reactor facilities at the Fukushima Dai-ichi NPS

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Electric output (MWe)	460	784	784	784	784	1100
Thermal output (MWt)	1380	2381	2381	2381	2381	3293
Start of construction	Sep. 1967	May 1969	Oct. 1970	Sep. 1972	Dec. 1971	May 1973
Commissioning	Mar. 1971	Jul. 1974	Mar. 1976	Oct. 1978	Apr. 1978	Oct. 1979
Reactor type	BWR3		BV	VR4		BWR5
Reactor pressure vessel inside diameter (mm)	Approx. 4,800	Approx. 5,600	Approx. 5,570	Approx. 5,570	Approx. 5,570	Approx. 6,410
Reactor pressure vessel overall height (mm)	Approx. 20,000	Approx. 22,000	Approx. 22,000	Approx. 22,000	Approx. 22,000	Approx. 23,000
Reactor pressure vessel total weight (t)	Approx. 440	Approx. 500	Approx. 500	Approx. 500	Approx. 500	Approx. 750
Reactor pressure vessel design pressure (*1)	Approx. 8.62 MPa [gage] (87.9 kg/cm2 [gage])	Approx. 8.62 MPa [gage] (87.9 kg/cm2 [gage])	Approx. 8.62 MPa [gage] (87.9 kg/cm2 [gage])			
Reactor pressure vessel design temperature	302	302	302	302	302	302
Number of fuel assemblies	400	548	548	548	548	764
Number of high burnup 8x8 fuels	68	-	-	-	-	-
Number of 9x9 fuels (type A)	-	-	516	-	-	-
Number of 9x9 fuels (type B)	332	548	-	548	548	764
Number of MOX fuels	-	-	32	-	-	-
Effective fuel rod length (m)	Approx. 3.66	Approx. 3.71	Approx. 3.71	Approx. 3.71	Approx. 3.71	Approx. 3.71
Number of control rods	97	137	137	137	137	185
			Mark I			Mark II
Containment type						
Containment overall height (m)	32	34	34.1	34.1	34.1	48.0
Containment diameter (m)	17.7 (sphere) 9.6 (cylinder)	20.0 (sphere) 10.9 (cylinder)	20.0 (sphere) 10.9 (cylinder)	20.0 (sphere) 10.9 (cylinder)	20.0 (sphere) 10.9 (cylinder)	25.9
Pool water volume in suppression chamber (m3)	1,750	2,980	2,980	2,980	2,980	3,200
Containment design pressure (*1)	Approx. 0.43 MPa [gage] (4.35 kg/cm2 [gage])	Approx. 0.38 MPa [gage] (3.92 kg/cm2 [gage])	Approx. 0.38 MPa [gage] (3.92 kg/cm2 [gage])	Approx. 0.38 MPa [gage] (3.92 kg/cm2 [gage])	Approx. 0.38 MPa [gage] (3.92 kg/cm2 [gage])	Approx. 0.28 MPa [gage] (2.85 kg/cm2 [gage])
Containment design temperature (C)	138 (D/W) 138 (S/C)	138 (D/W) 138 (S/C)	138 (D/W) 138 (S/C)	138 (D/W) 138 (S/C)	138 (D/W) 138 (S/C)	171 (D/W) 105 (S/C)
Spent fuel pool volume (% full core)	225	225	225	290	290	230
Spent fuel pool working temperature (C)	≦65	≦65	≦65	≦65	≦65	≦65
Spent fuel pool length (north-south: parallel to coastline) (m)	Approx. 7.2	Approx. 9.9	Approx. 9.9	Approx. 9.9	Approx. 9.9	Approx. 10.4
Spent fuel pool width (east-west: vertical to coastline) (m)	Approx. 12.0	Approx. 12.2	Approx. 12.2	Approx. 12.2	Approx. 12.2	Approx. 12.0
Spent fuel pool depth (deepest part) (m)	Approx. 11.8	Approx. 11.8	Approx. 11.8	Approx. 11.8	Approx. 11.8	Approx. 11.8
Spent fuel pool volume (m3)	Approx. 1,020	Approx. 1,424	Approx. 1,425	Approx. 1,425	Approx. 1,425	Approx. 1,497
Stockable number of spent fuels in pool	900	1,240	1,220	1,590	1,590	1,770
Number of spent fuels stored in pool (end of Dec. 2010)	292	587	514	1,331 (including 548 fuels extracted inside the reactor)	946	876
Number of new fuels stored in pool (end of Dec. 2010)	100	28	52	204	48	64
		L	l .	l .		L

^{*1:} The unit used in the application for the reactor establishment permit was kg/cm2 [gage

Source: Tokyo Electric Power Company, "The impact of Tohoku-Chihou Taiheiyo-Oki Earthquake to Nuclear Reactor Facilities at Fukushima Dai-ichi Nuclear Power Station," September 2011

Principle of power generation by boiling water reactor (BWR)

"Based on the link from the 'Disaster Prevention Network for Nuclear Environments' created by the Nuclear Safety

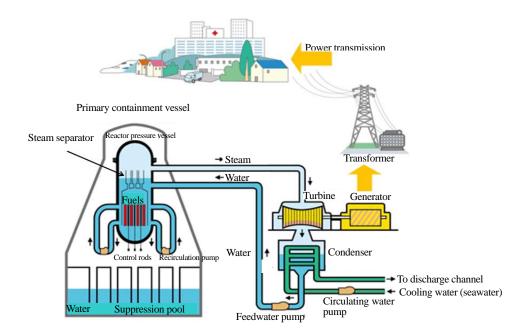
Division, Ministry of Education, Culture, Sports, Science and Technology"

(1) Principle of nuclear power generation

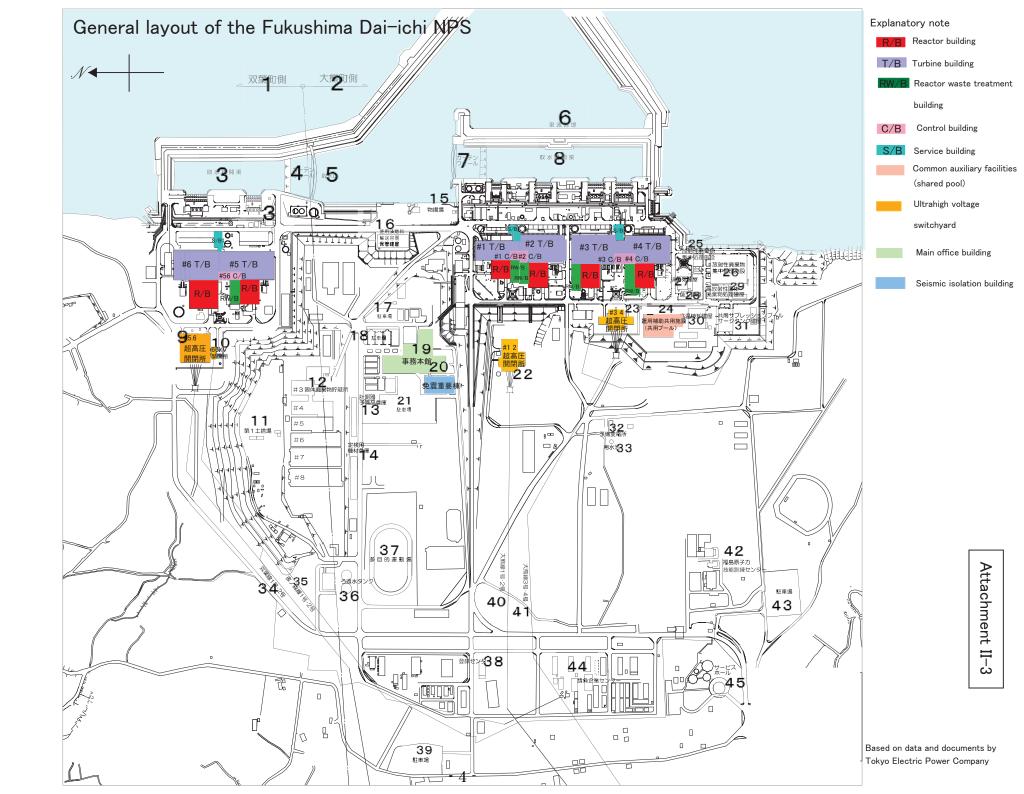
All power reactors existing in Japan are so-called light water reactors. Light water means normal water, and water is used in light water reactors in order to cool reactors when extracting thermal energy. Light water reactors are divided into boiling water reactors (BWRs) and pressurized water reactors (PWRs). As of the end of February 2011, fifty-four power reactors are in operation in Japan. In a BWR, steam produced inside the reactor directly rotates the turbine of the generator.

(2) Structure of boiling water reactor (BWR)

In a BWR, cooling water delivered by the feedwater pump and the recirculation pump flows along the fuel rods upward from the bottom of the reactor pressure vessel. Because the cooling water is heated by the fuel rods which are generating heat, the higher up it flows, the higher the water temperature becomes; it starts to boil along the way, emitting a mixture of water and steam upward. In a BWR whose electric output is comparable to 1,000,000 kW, the pressure of the cooling water is generally 7.0 MPa and the reactor exit stream temperature is 286 degrees Celsius in general. The steam separator located at the upper part of the reactor pressure vessel is to extract the steam from the boiling cooling water, and then, dry and deliver it to the turbine. The outline of a BWR nuclear power plant system is described in the figure below (the shape of the containment corresponds to that of Unit 6 in the Fukushima Daiichi Nuclear Power Station).



Based on 5-2, Graphical Flip-chart of "Nuclear & Energy Related Topics" 2011 by the Federation of Electric Power Companies of Japan



福島第一原子力発電所 配置図: General layout of the Fukushima Daiichi NPS

図上部 左⇒右

①双葉町側:Futaba-machi

②大熊町側: Okuma-machi

③取水路開渠: Intake channel open ditch

④カーテンウォール: Curtain wall

⑤取水口: Water intake

⑥東波防堤: East breakwater

⑦カーテンウォール: Curtain wall

⑧取水路開渠: Intake channel open ditch

図中央部 左⇒右

⑨超高圧開閉所: Ultrahigh voltage switchyard

⑩66KV開閉所: 66 kV switching station

⑪第1 土捨場:1st Spoil bank

⑫固体廃棄物貯蔵所: Solid waste storage

⑬計測器予備品倉庫: Storage for measurement equipment and spare items

⑭定検用機材倉庫: Storage for regular inspection equipment

⑤物揚場: Shallow draft quay

⑯使用済燃料輸送容器保管建屋: Spent fuel transportation cask storage building

①駐車場: Parking space

18駐車場: Parking space

¹⁹事務本館: Main office building

20免震重要棟: Seismic isolation building

②駐車場: Parking space

②超高圧開閉所: Ultrahigh voltage switchyard

②超高圧開閉所: Ultrahigh voltage switchyard

❷運用補助共用施設(共用プール): Common auxiliary facilities (shared pool)

⑤放射性廃棄物集中処理施設: Centralized radioactive waste treatment facilities

◎放射性廃棄物集中処理施設: Centralized radioactive waste treatment facilities

②排風気建屋: Air-exhaust ventilation building

❷焼工建屋: Combustion building

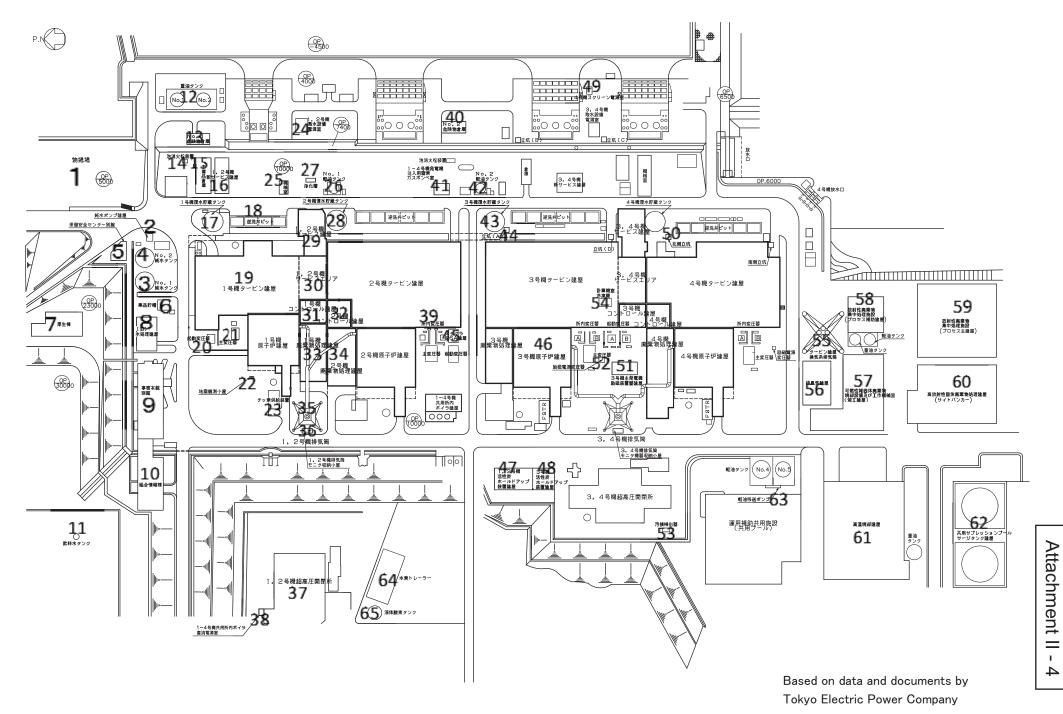
図高放射性固体廃棄物処理建屋: High activity solid waste treatment building

⑩高温焼却建屋: High temperature incineration building

- ③共用サプレッションプールサージタンク建屋: Common suppression pool surge tank building
- ②予備変電所: Auxiliary substation
- ③用水池: Reservoir

図下部 左⇒右

- 函双葉線 1 号·2 号: Futaba Transmission Line, L1 and L2
- ⑤夜ノ森線 1 号・2 号: Yorunomori Transmission Line, L1 and L2
- ㉟ろ過水タンク: Filtrate tank
- ③多目的運動場: Multi-purpose athletic field
- 38登録センター: Registration center
- ⑨駐車場: Parking space
- ⑩大熊線 1 号·2 号: Okuma Transmission Line, L1 and L2
- ④大熊線 3 号·4 号: Okuma Transmission Line, L3 and L4
- ❷福島原子力技能訓練センター: Skills Training Center
- ④駐車場: Parking space
- ⊕請負企業センター: Contractor center
- ④サービスホール: Service hall

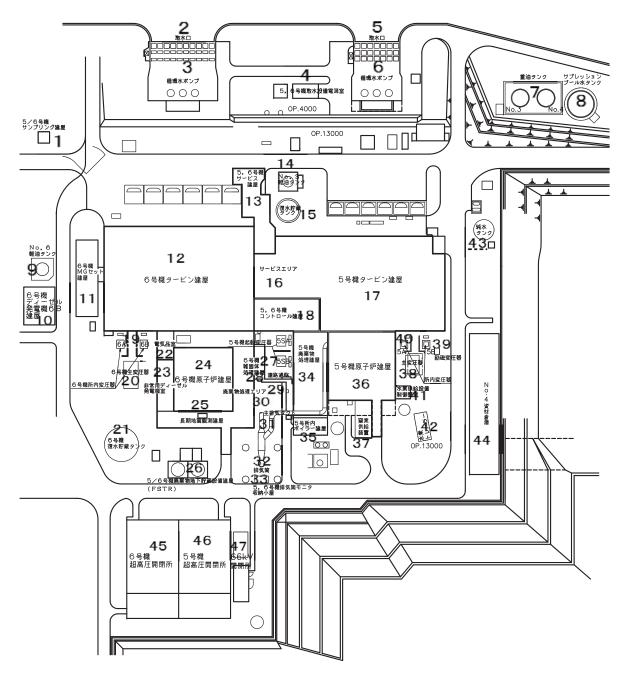


Attachment II-4: Plant layout for Units 1 to 4 of the Fukushima Dai-ichi NPS

- ①物揚場: Shallow draft quay
- ②純水ポンプ建屋: Pure water pump building
- ③No.1 純水タンク: Deionized water tank 1
- ④No.2 純水タンク: Deionized water tank 2
- ⑤保健安全センター別館: Annex of the health and safety center
- ⑥薬品貯槽: Chemical storage
- ⑦厚生棟: Welfare building
- ⑧ (旧) 水処理建屋: (Former) Water treatment building
- ⑨事務本館別館: Annex of the main office building
- ⑩総合情報等: General information building
- ⑪飲料水タンク: Drinking water tank
- ⑩重油タンク: Heavy oil tank
- ③No.1 危険物倉庫: Dangerous object storage No. 1
- ⑩泡消火栓装置: Foam fire extinguishing equipment
- ⑤予備品倉庫: Spare item storage
- ⑥新サービス建屋: Units 1 and 2 new service building
- ①1 号機復水貯蔵タンク: Unit 1 condensate storage tank
- ⑩逆洗弁ピット: Reversing valve pit
- ⑩1 号機タービン建屋: Unit 1 turbine building
- ②起動変圧器: Startup transformer
- ②主変圧器: Main transformer
- ⊚地震観測小屋:Seismic observatory
- ◎窒素供給装置: Nitrogen-supplying device
- ☑1, 2 号機取水設備電源室: Power room for the water intake facility for Units 1 and 2
- ②機械室: Machine room
- 図No.1 軽油タンク: Light oil tank No. 1
- ②浄化槽:Septic tank
- ®2 号機復水貯蔵タンク: Unit 2 condensate storage tank
- 191,2号機サービス建屋: Units 1 and 2 service building
- ⑩1, 2号機サービスエリア: Units 1 and 2 service area
- ①1 号機コントロール建屋: Unit 1 control building
- ᡚ2 号機コントロール建屋: Unit 2 control building
- ③1 号機廃棄物処理建屋: Unit 1 waste treatment building
- №2 号機廃棄物処理建屋: Unit 2 waste treatment building
- 1 2 号機排気筒: Stack for Units 1 and 2

- 〒1、2号機排気筒モニタ収納小屋: Monitoring equipment chamber for Units 1 and 2 stack
- 勁1, 2 号機超高圧開閉所 Ultrahigh voltage switching station for Units 1 and 2
- 録1~4 号機共用所内ボイラ直流電源室:DC power supply room for the common station-service boiler for Units 1-4
- ⑨所内変圧器: Auxiliary transformer
- @No.2 危険物倉庫: Dangerous object storage No.2
- ⊕1~4 号機発電機注入用窒素ガスボンベ室: Nitrogen gas cylinder room for Units 1 to 4 generators
- ⑩No.2 軽油タンク Light oil tank No.2
- ④3 号機復水貯蔵タンク: Unit 3 condensate storage tank
- ⊕立坑:Shaft
- 匈メタクラ 2 S A建屋: Metal clad switch gear 2SA building
- @3 号機原子炉建屋: Unit 3 reactor building
- ᡚ1, 2 号機活性炭ホールドアップ装置建屋: Units 1 and 2 charcoal building
- ❷ 3 号機活性炭ホールドアップ装置建屋: Unit 3 charcoal building
- ⑩4 号機スクリーン電源室: Power room of Unit 4 screen
- ⑩北側立坑: North shaft
- ③3 号機主発電機励磁装置盤建屋: Building for the energizing device of Unit 3 main generator
- ❺励磁電源変圧器: Energizing power transformer
- ⑤汚損検出器: Contamination detector
- ۞計算機室冷凍機: Computer room cooler
- ⑤タービン建屋換気系排気筒:Stack for the turbine building ventilation system
- 窗排風気建屋: Air-exhaust ventilation building
- ③可燃性雑固体廃棄物焼却設備及び工作機械室(焼工建屋): Miscellaneous flammable solid waste combustor and engineering machine room (combustion room)
- ⊗放射性廃棄物集中処理施設(プロセス補助建屋): Central radioactive waste treatment facilities (auxiliary processing building)
- ⊚放射性廃棄物集中処理施設(プロセス主建屋) : Central radioactive waste treatment facilities (main processing building)
- ⑩高放射線性固体廃棄物処理建屋(サイトバンカー): High activity waste treatment building (side bunker)
- ⑥高温焼却建屋: High temperature incineration building
- ⑩共用サプレッションプールサージタンク建屋: Common suppression pool surge tank building
- @軽油移送ポンプ: Light oil transfer pump
- @水素トレーラー: Hydrogen trailer
- ⑥液体酸素タンク: Liquid oxygen tank





福島第一原子力発電所 5 号機及び 6 号機 配置図: Plant layout for Units 5 and 6 of the Fukushima Dai-ichi NPS

図上部 左⇒右

- ① 5 / 6 号機サンプリング建屋: Units 5 and 6 sampling building
- ②取水口: Water intake
- ③循環水ポンプ: Circulating water pump
- ④ 5, 6号機取水設備電源室: Power room for Units 5 and 6 intake facilities
- ⑤取水口: Water intake
- ⑥循環水ポンプ: Circulating water pump
- ⑦重油タンク: Heavy oil tanks
- ③サプレッションプール水タンク: Suppression pool water tank

図中央部 左⇒右

- ⑨No. 6軽油タンク: Light oil tank No. 6
- ⑩ 6 号機ディーゼル発電機建屋: Unit 6 diesel generator building
- ⑩6号機MGセット建屋: Unit 6 MG set building
- ⑤ 5, 6号機サービス建屋 : Units 5 and 6 service building
- ⑭No.3軽油タンク:Light oil tank No. 3
- り 復水貯蔵タンク: Condensate storage tank
- ⑩サービスエリア: Service area
- ⑤ 5 号機タービン建屋: Unit 5 turbine building
- <sup>図 5 , 6 号機コントロール建屋: Units 5 and 6 control building
 </sup>
- ◎ 6号機所内変圧器: Unit 6 auxiliary transformers
- ②6号機主変圧器: Unit 6 main transformer
- ② 6 号機復水貯蔵タンク: Unit 6 condensate storage tank
- ②電気品室: Electrical item room
- ◎非常用ディーゼル発電機室: Emergency diesel generator room
- ❷ 6 号機原子炉建屋: Unit 6 reactor building
- 〇長期地震観測建屋: Long-term seismic observation building
- ◎ 5 / 6 号機廃棄物地下貯蔵設備建屋: Units 5 and 6 filter sludge tank room
- 5 号機起動変圧器: Unit 5 startup transformers
- ❷ 6 号機雑固体処理建屋: Unit 6 miscellaneous solid treatment building
- ②連絡通路: Passageway
- ⑥廃棄物処理エリア: Waste treatment area

①主排気ダクト: Main exhaust air duct

◎排気筒: Stack

③ 5, 6号機排気筒モニタ収納小屋: Monitoring equipment chamber for the stack of Units 5 and 6

❷ 5 号機廃棄物処理建屋: Unit 5 waste treatment building

⑤ 5号所内ボイラー建屋: Unit 5 auxiliary boiler building

◎窒素供給装置: Nitrogen-supplying device

図主変圧器: Main transformer

勁励磁変圧器: Energizing transformer

⑩所内変圧器: Auxiliary transformers

①水素供給設備制御盤室: Hydrogen-supplying facility control board room

⑪水素トレーラー: Hydrogen trailer

砂純水タンク: Demineralized water tank

⊕No. 4資材倉庫: Material storage No.4

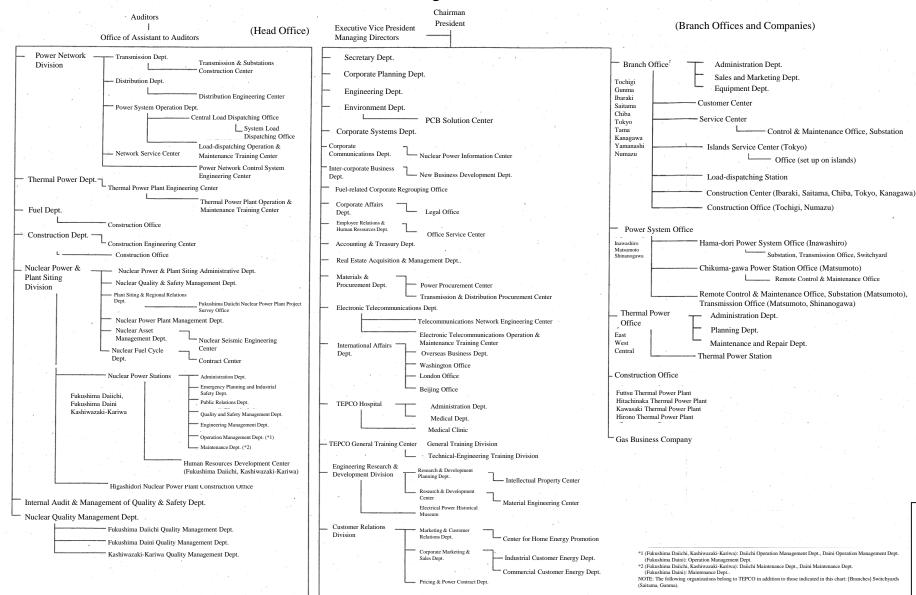
図下部 左⇒右

❸ 6 号機超高圧開閉所: Ultrahigh voltage switching station for Unit 6

❸ 5 号機超高圧開閉所: Ultrahigh voltage switching station for Unit 5

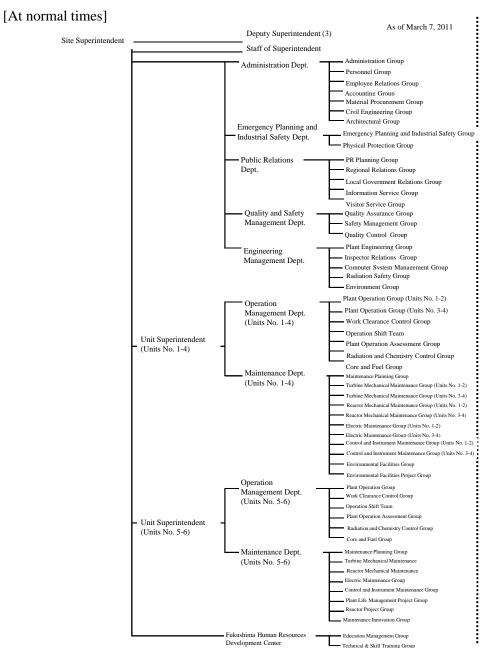
母66KV開閉所: 66kv switching station

TEPCO Organization Chart



Created by Tokyo Electric Power Company

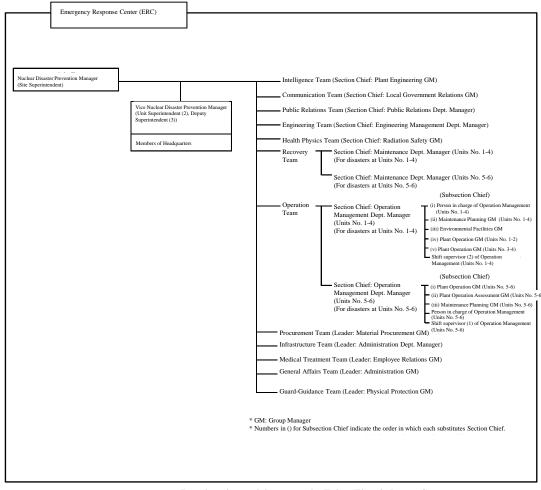
TEPCO organization at the Fukushima Dai-ichi NPS



[In a First Level Emergency] (after warning of an event specified in Article 10 of the Act on Special Measures concerning Nuclear Emergency Preparedness)

[In a Second Level Emergency] (after the occurrence of a situation specified in Section 1, Article 15 of the abovementioned Act)

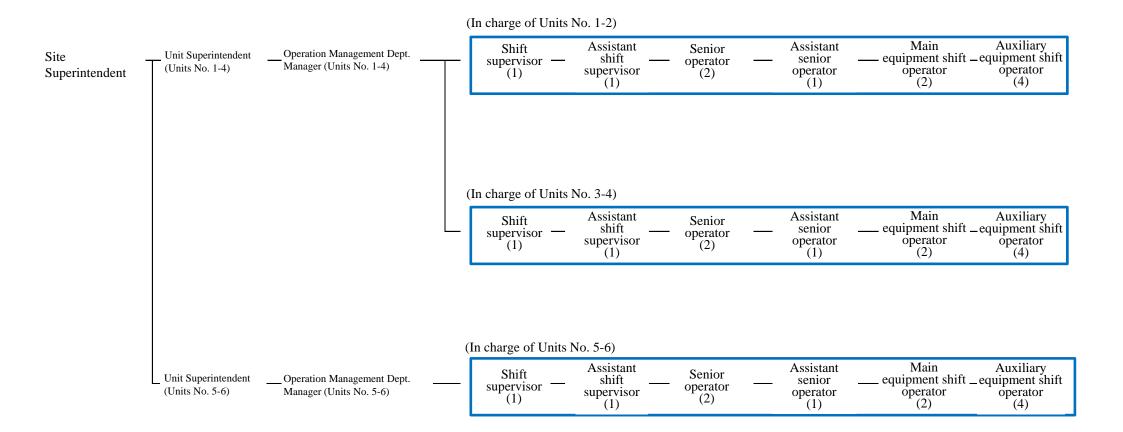
As of February 1, 2011



Based on data and documents by Tokyo Electric Power Company

Attachment II-6

Shift arrangements at the Fukushima Dai-ichi NPS

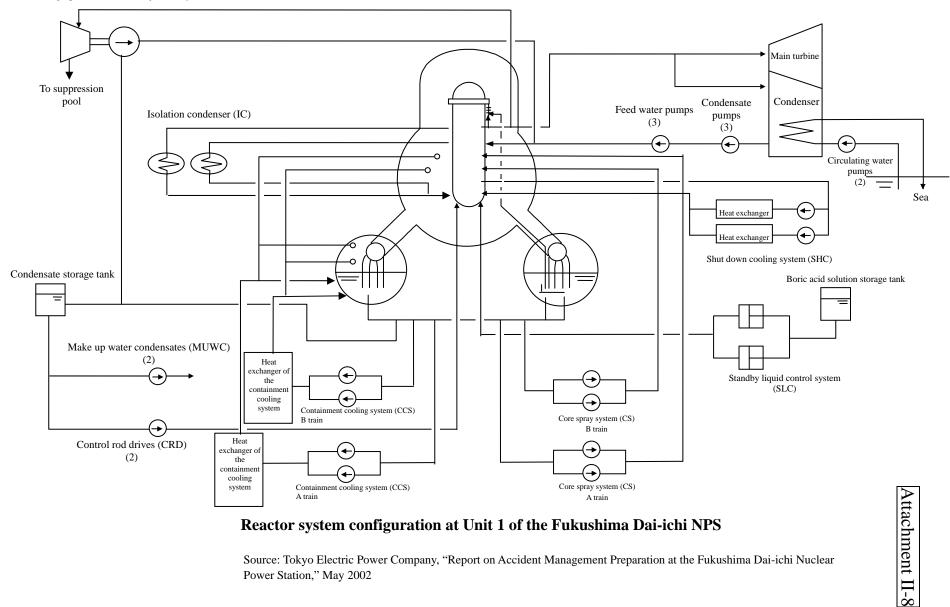


Based on the "Third Report on Regular Safety Review of the Fukushima Dai-ichi Nuclear Power Station Unit No.1" (November 2010) by Tokyo Electric Power Company

^{*1} One dedicated senior operator and main equipment shift operator are assigned to each plant.

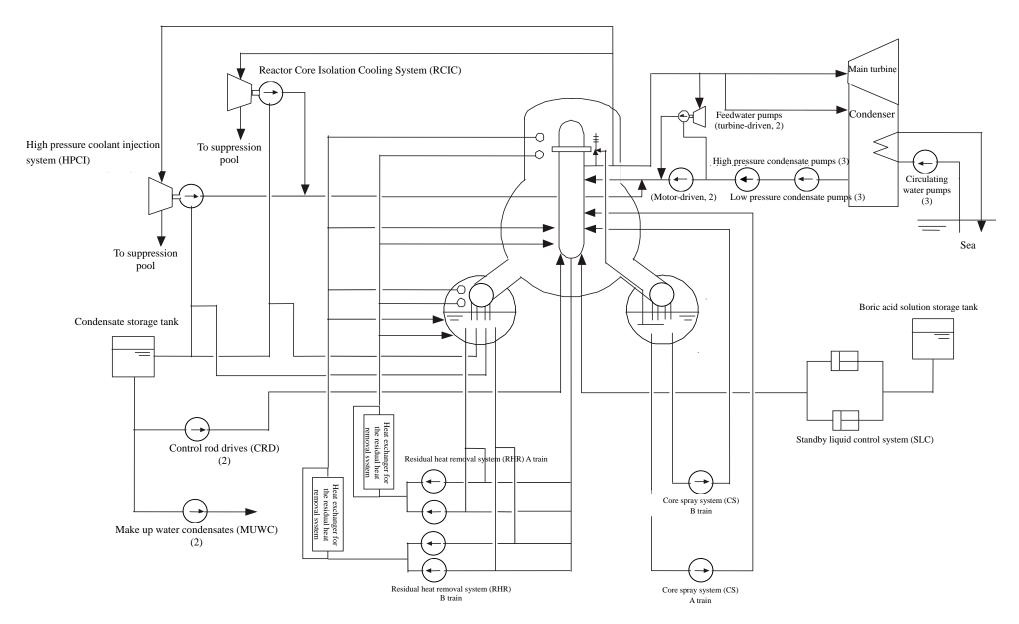
^{*2} The number of operation shift team members may change depending on the circumstances at the relevant plant.





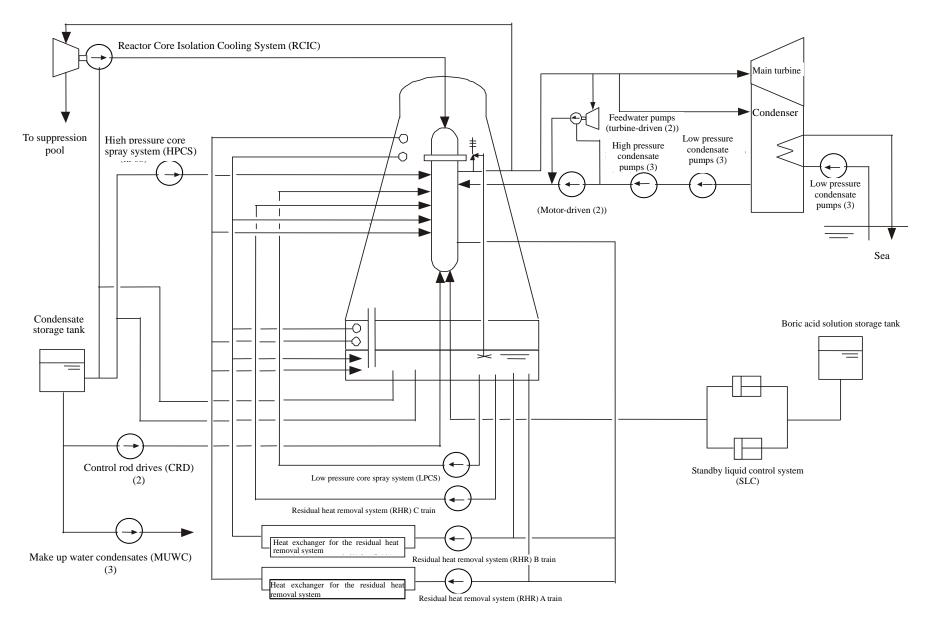
Reactor system configuration at Unit 1 of the Fukushima Dai-ichi NPS

Source: Tokyo Electric Power Company, "Report on Accident Management Preparation at the Fukushima Dai-ichi Nuclear Power Station," May 2002



Reactor system configuration at Units 2 to 5 of the Fukushima Dai-ichi NPS

Source: Tokyo Electric Power Company, "Report on Accident Management Preparation at the Fukushima Dai-ichi Nuclear Power Station," May 2002



Reactor system configuration at Unit 6 of the Fukushima Dai-ichi NPS

Source: Tokyo Electric Power Company, "Report on Accident Management Preparation at the Fukushima Dai-ichi Nuclear Power Station," May 2002

	Personnel	damage (nur	mber of persons)]	Property dan	nage (number	of buildings	3)		
Prefecture	Killed	Missing	Injured	Complete collapse	Partial collapse	Swept out	Total burn down	Partial burn down	Inundated above floor level	Inundated below floor level	Partial damage	Non- dwelling houses
Hokkaido	1		3		4				329	545	7	469
Aomori	3	1	61	311	853						121	1,194
Iwate	4,665	1,409	188	20,184	4,551		1	5	1,761	323	7,291	4,148
Miyagi	9,504	1,913	4,013	78,451	100,663		13	35	7,053	11,009	190,971	27,819
Akita			12								3	3
Yamagata	2		29	37	80							
Fukushima	1,605	221	241	18,432	57,850		77	3	62	339	133,492	1,071
Tokyo	7		90		11		3				257	20
Ibaraki	24	1	707	3,203	23,247		3	1	1,609	722	162,918	12,465
Tochigi	4		132	265	2,042						67,604	295
Gunma	1		38		7						16,154	195
Saitama			42	22	193		1	1		1	1,800	33
Chiba	20	2	251	783	9,221		1	5	153	720	34,237	660
Kanagawa	4		132		38						405	24
Niigata			3								9	7
Yamanashi			2								4	
Nagano			1									
Shizuoka			4							7	4	
Mie			1						2			9
Tokushima									2	9		
Kochi			1						2	8		
Total	15,840	3,547	5,951	121,688	198,760		28	81	10,973	13,683	615,277	48,412

Overview of damage caused by the Tohoku District - off the Pacific Ocean Earthquake and the ensuing tsunami (according to the latest information as of 16:00, December 1, 2011)

Based on the document (as of December 1, 2011) by the Emergency Disaster Countermeasures Headquarters, National Police Agency of Japan

Earthquake and tsunami data from the Japan Meteorological Agency

		Information on h	nypocenter, magnitude, seismic i	ntensity, tsunami, etc.				
Date	Time	Hypocenter	Magnitude	Seismic intensity (Futabamachi, Fukushima)				
March 11	14:46	Off the coast of Sanriku	9.0	Intensity 6 upper				
	14:49	"Major tsunami warnings" were	e issued. (Fukushima Prefecture)					
	14:50	"The estimated arrival time of t	"The estimated arrival time of the tsunami" was announced as "15:10 with a projected height of					
	14:51	Off the coast of Fukushima Prefecture	6.8	4				
	14:54	Off the coast of Fukushima Prefecture	5.8	4				
	14:55	Off the coast of Ibaraki Prefecture	5.8	3				
	14:58	Off the coast of Fukushima Prefecture	6.4	4				
	(14:)*	1.2 m backwash was observed	in Soma point, Fukushima Prefe	cture.				
	15:05	Off the coast of Fukushima Prefecture	5.9	4				
	15:06	Off the coast of Iwate Prefecture	6.4	3				
	15:11	Northen Ibaraki Prefecture	5.6	2				
	15:12	Off the coast of Fukushima Prefecture	6.1	4				
	15:14	The announcement was made theight of 6 meters." (Fukushim		mated arrival time with a projected				
	15:15	Off the coast of Ibaraki Prefecture	7.7	4				
	15:25	Off the coast of Sanriku	7.5	3				
	15:29	Off the coast of Sanriku	6.8	2				
	15:31	The announcement was made that "a tsunami arrived at the estimated arrival time with a projected height of 10 meters." (Fukushima Prefecture)						
	15:38	Off the coast of Ibaraki Prefecture	5.5	2				
	15:40	Off the coast of Iwate Prefecture	5.7	2				
	15:44	Off the coast of Miyagi Prefecture	5.3	2				
	15:46	Off the coast of Miyagi Prefecture	5.6	2				
	15:48	Off the coast of Miyagi Prefecture	5.4	2				
	15:49	Off the coast of Iwate Prefecture	5.8	2				
	15:51		or higher was observed in Some orological Agency on April 13.)	•				
	15:57	Off the coast of Ibaraki Prefecture	6.1	3				
	15:59	Off the coast of Fukushima Prefecture	6.7	2				
	16:04	Off the coast of Miyagi Prefecture	5.8	2				
	16:10	Off the coast of Fukushima Prefecture	6.0	2				
	16:14	Off the coast of Ibaraki Prefecture	6.7	3				
	16:16	Off the coast of Fukushima Prefecture	5.4	3				
	16:22	Off the coast of Fukushima Prefecture	4.4	1				
	16:25	Off the coast of Sanriku	6.4	2				
	16:29	Off the coast of Iwate Prefecture	6.5	Intensity 5 lower				
	16:34	Off the coast of Miyagi Prefecture	6.2	2				
	16:36	Off the coast of Miyagi Prefecture	5.0	1				

		Information on h	nypocenter, magnitude, seismic	intensity, tsunami, etc.
Date	Time	Hypocenter	Magnitude	Seismic intensity (Futabamachi, Fukushima)
March 11	16:40	Off the coast of Miyagi Prefecture	5.5	1
	16:54	Off the coast of Fukushima Prefecture	5.5	3
	17:05	Off the coast of Fukushima Prefecture	5.8	3
	17:12	Off the coast of Ibaraki Prefecture	6.6	3
	17:19	Off the coast of Ibaraki Prefecture	6.8	3
	17:31	Off the coast of Fukushima Prefecture	5.9	4
	17:35	Off the coast of Ibaraki Prefecture	5.2	2
	17:40	Off the coast of Fukushima Prefecture	6.1	4
	17:47	Off the coast of Fukushima Prefecture	6.0	2
	17:54	Off the coast of Fukushima Prefecture	4.8	1
	18:04	Off the coast of Ibaraki Prefecture	5.4	2
	18:15	Off the coast of Fukushima Prefecture	4.8	2
	18:19	Off the coast of Ibaraki Prefecture	5.0	1
	18:27	Off the coast of Miyagi Prefecture	5.3	2
	18:34	Off the coast of Fukushima Prefecture	4.8	2
	18:37	Off the coast of Ibaraki Prefecture	5.4	1
	18:42	Off the coast of Sanriku	5.6	1
	18:47	Off the coast of Sanriku	5.7	1
	18:52	Off the coast of Fukushima Prefecture	4.8	3
	18:55	Off the coast of Ibaraki Prefecture	5.3	2
	18:57	Off the coast of Ibaraki Prefecture	4.7	1
	18:59	Off the coast of Fukushima Prefecture	5.0	1
	19:10	Off the coast of Iwate Prefecture	6.2	2
	19:13	Off the coast of Miyagi Prefecture	5.3	1
	19:21	Off the coast of Fukushima Prefecture	5.5	3
	19:35	Off the coast of Fukushima Prefecture	5.0	2
	19:39	Off the coast of Miyagi Prefecture	4.9	1
	19:46	Off the coast of Ibaraki Prefecture	4.9	2
	20:00	Off the coast of Fukushima Prefecture	5.5	3
	20:07	Off the coast of Ibaraki Prefecture	4.7	2
	20:13	Off the coast of Ibaraki Prefecture	5.8	2
	20:17	Off the coast of Fukushima Prefecture	5.7	2
	20:20	Off the coast of Ibaraki Prefecture	5.7	2
	20:31	Southern Miyagi Prefecture	5.2	2
	20:36	Off the coast of Iwate Prefecture	6.7	3
	20:39	Off the coast of Miyagi Prefecture	5.5	2
	20:46	Off the coast of Ibaraki Prefecture	5.4	2
	20:56	Off the coast of Ibaraki Prefecture	5.4	1
	20:57	Off the coast of Iwate Prefecture	5.4	1

		Information on hypocenter, magnitude, seismic intensity, tsunami, etc.				
Date	Time	Hypocenter	Magnitude	Seismic intensity (Futabamachi, Fukushima)		
March 11	21:13	Off the coast of Fukushima Prefecture	6.1	3		
	21:15	Off the coast of Iwate Prefecture	5.9	2		
	21:21	Off the coast of Fukushima Prefecture	4.9	3		
	21:33	Off the coast of Sanriku	5.2	1		
	21:49	Off the coast of Ibaraki Prefecture	5.2	2		
	21:55	Off the coast of Miyagi Prefecture	5.1	3		
1	22:17	Off the coast of Ibaraki Prefecture	5.7	2		
	22:33	Off the coast of Fukushima Prefecture	4.5	1		
	22:34	Off the coast of Ibaraki Prefecture	5.6	1		
	22:47	Off the coast of Fukushima Prefecture	4.7	1		
	22:56	Off the coast of Fukushima Prefecture	5.3	2		
•	23:00	Off the coast of Ibaraki Prefecture	5.4	2		
	23:10	Off the coast of Fukushima Prefecture	5.1	2		
	23:44	Off the coast of Ibaraki Prefecture	4.9	2		
	23:54	Off the coast of Ibaraki Prefecture	5.9	3		
12-Mar	0:06	Off the coast of Fukushima Prefecture	5.3	2		
	0:13	Off the coast of Ibaraki Prefecture	6.6	3		
	0:15	Off the coast of Ibaraki Prefecture	5.4	2		
	0:19	Off the coast of Ibaraki Prefecture	6.2	3		
	0:24	Northern Gunma Prefecture	4.3	1		
	0:26	Off the coast of Fukushima Prefecture	5.0	1		
	0:32	Off the coast of Fukushima Prefecture	5.3	1		
	0:42	Off the coast of Ibaraki Prefecture	5.5	1		
	0:51	Off the coast of Fukushima Prefecture	5.2	1		
1	1:49	Off the coast of Ibaraki Prefecture	4.7	1		
	1:57	Off the coast of Miyagi Prefecture	4.8	1		
1	2:30	Off the coast of Fukushima Prefecture	5.0	3		
	2:56	Off the coast of Fukushima Prefecture	4.4	3		
1	3:11	Off the coast of Fukushima Prefecture	6.0	3		
	3:44	Off the coast of Fukushima Prefecture	5.0	2		
	3:59	Northern Nagano Prefecture	6.7	3		
1	4:02	Off the coast of Sanriku	6.3	2		
	4:08	Off the coast of Ibaraki Prefecture	5.2	2		
	4:09	Northern Nagano Prefecture	4.5	1		
	4:16	Off the coast of Fukushima Prefecture	4.1	1		
	4:24	Off the east coast of Chiba Prefecture	5.7	2		
	4:31	Northern Nagano Prefecture	5.9	2		
	4:45	Off the coast of Fukushima Prefecture	5.2	3		
	4:46	Off the coast of Akita Prefecture	6.4	1		

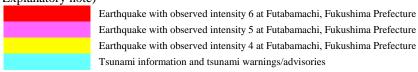
		Information on hypocenter, magnitude, seismic intensity, tsunami, etc.			
Date	Time	Hypocenter	Magnitude	Seismic intensity (Futabamachi, Fukushima)	
12-Mar	5:11	Off the coast of Sanriku	6.4	2	
	5:25	Off the coast of Fukushima Prefecture	4.9	2	
	5:34	Off the coast of Fukushima Prefecture	5.0	2	
	6:34	Off the coast of Fukushima Prefecture	4.8	3	
	8:11	Hamadori, Fukushima Prefecture	4.6	2	
	8:54	Off the coast of Fukushima Prefecture	5.0	2	
	8:59	Off the coast of Ibaraki Prefecture	5.5	2	
	9:25	Off the coast of Fukushima Prefecture	4.9	2	
	10:04	Off the coast of Miyagi Prefecture	4.8	2	
	10:12	Hamadori, Fukushima Prefecture	4.8	2	
	10:13	Off the coast of Fukushima Prefecture	4.7	3	
	10:35	Off the coast of Sanriku	5.8	1	
	10:46	Off the coast of Fukushima Prefecture	5.2	2	
	10:47	Off the coast of Fukushima Prefecture	6.8	3	
	11:34	Off the coast of Fukushima Prefecture	5.2	2	
	11:52	Off the coast of Fukushima Prefecture	5.0	2	
	12:12	Off the coast of Ibaraki Prefecture	5.6	2	
	13:06	Off the coast of Miyagi Prefecture	5.3	2	
	14:14	Northen Ibaraki Prefecture	4.9	1	
	14:45	Off the coast of Fukushima Prefecture	4.5	2	
	15:18	Off the coast of Iwate Prefecture	5.5	2	
	15:44	Off the coast of Ibaraki Prefecture	4.7	1	
	16:36	Off the coast of Fukushima Prefecture	4.7	2	
	19:53	Off the coast of Miyagi Prefecture	5.8	2	
	20:20	"Major tsunami warnings" were	e changed to "tsunami warnings	." (Fukushima Prefecture)	
	21:54	Off the coast of Sanriku	5.9	2	
	22:15	Off the coast of Fukushima Prefecture	6.2	4	
	22:24	Off the coast of Miyagi Prefecture	4.8	1	
	23:14	Off the coast of Ibaraki Prefecture	5.2	1	
	23:33	Off the coast of Ibaraki Prefecture	4.3	1	
	23:43	Off the coast of Iwate Prefecture	5.9	2	
13-Mar	3:09	Off the coast of Fukushima Prefecture	4.5	3	
	5:41	Off the coast of Fukushima Prefecture	4.7	2	
	6:58	Off the coast of Iwate Prefecture	5.4	1	
	7:13	Off the coast of Fukushima Prefecture	6.0	3	
	7:30	"Tsunami warnings" were chan	ged to "tsunami advisories." (Fu	ukushima Prefecture)	
	7:59	Off the coast of Fukushima Prefecture	4.4	2	
	8:24	Off the coast of Miyagi Prefecture	6.2	4	
	8:41	Off the coast of Fukushima Prefecture	5.2	1	

		Information on hypocenter, magnitude, seismic intensity, tsunami, etc.				
Date	Time	Hypocenter	Magnitude	Seismic intensity (Futabamachi, Fukushima)		
13-Mar	9:41	Off the coast of Ibaraki Prefecture	4.5	1		
	10:26	Off the coast of Ibaraki Prefecture	6.6	2		
	14:59	Off the coast of Fukushima Prefecture	4.7	3		
	17:58	"Tsunami advisories" were cance	elled. (Fukushima Prefecture)			
	20:37	Off the coast of Fukushima Prefecture	6.0	3		
	21:44	Off the coast of Fukushima Prefecture	4.7	2		
14-Mar	2:04	Off the coast of Fukushima Prefecture	4.4	1		
	2:55	Off the east coast of Chiba Prefecture	5.7	2		
	4:27	Off the coast of Fukushima Prefecture	4.2	1		
	8:41	Off the coast of Ibaraki Prefecture	4.7	2		
	10:02	Off the coast of Ibaraki Prefecture	6.2	3		
	13:45	Off the coast of Fukushima Prefecture	4.7	2		
ı	15:12	Off the coast of Miyagi Prefecture	6.5	3		
	15:18	Off the coast of Fukushima Prefecture	5.2	3		
	15:52	Off the coast of Fukushima Prefecture	5.2	3		
	16:25	Off the coast of Ibaraki Prefecture	4.8	1		
ı	18:07	Off the coast of Ibaraki Prefecture	4.8	2		
March 15	3:35	Off the coast of Fukushima Prefecture	4.3	2		
	3:41	Off the coast of Ibaraki Prefecture	5.6	2		
	4:28	Off the coast of Miyagi Prefecture	5.0	1		
	16:03	Northen Ibaraki Prefecture	4.9	2		
	16:48	Off the coast of Fukushima Prefecture	4.3	1		
	18:50	Off the coast of Fukushima Prefecture	6.3	2		
	20:06	Off the coast of Fukushima Prefecture	5.2	2		
	22:27	Off the coast of Fukushima Prefecture	6.2	4		
	22:31	Eastern Shizuoka Prefecture	6.4	2		
	22:37	Off the coast of Fukushima Prefecture	5.3	2		
March 16	5:53	Hamadori, Fukushima Prefecture	4.5	1		
	12:23	Off the coast of Fukushima Prefecture	4.6	2		
	12:52	Off the east coast of Chiba Prefecture	6.1	3		
	13:14	Off the coast of Fukushima Prefecture	5.6	4		
	15:29	Off the coast of Iwate Prefecture	5.6	2		
	18:15	Off the coast of Fukushima Prefecture	4.6	2		
	20:45	Off the coast of Fukushima Prefecture	4.4	2		
	22:39	Southern Ibaraki Prefecture	5.4	2		
	22:54	Off the coast of Fukushima Prefecture	4.6	3		
	23:46	Off the coast of Miyagi Prefecture	5.3	2		
March 17	3:56	Hamadori, Fukushima Prefecture	4.4	1		
	4:00	Off the coast of Fukushima Prefecture	4.5	1		

		Information on hypocenter, magnitude, seismic intensity, tsunami, etc.				
Date	Time	Hypocenter	Magnitude	Seismic intensity (Futabamachi, Fukushima)		
March 17	13:13	Off the coast of Iwate Prefecture	5.9	2		
	17:25	Off the coast of Ibaraki Prefecture	5.4	2		
	20:48	Off the coast of Fukushima Prefecture	4.4	2		
	21:35	Off the coast of Fukushima Prefecture	5.1	2		
	21:54	Off the coast of Ibaraki Prefecture	5.7	3		
March 18	3:38	Off the coast of Fukushima Prefecture	4.7	3		
	3:55	Off the coast of Fukushima Prefecture	5.7	2		
	6:18	Off the coast of Fukushima Prefecture	4.5	2		
	11:48	Off the coast of Fukushima Prefecture	5.1	2		
	17:01	Off the east coast of Chiba Prefecture	5.4	2		
March 19	4:53	Off the coast of Fukushima Prefecture	5.1	2		
	8:32	Off the coast of Iwate Prefecture	5.7	2		
	8:49	Off the coast of Fukushima Prefecture	5.3	2		
	18:56	Northen Ibaraki Prefecture	6.1	4		
20-Mar	5:48	Off the coast of Fukushima Prefecture	4.5	2		
	10:30	Off the coast of Fukushima Prefecture	5.5	3		
20-Mar	14:19	Hamadori, Fukushima Prefecture	4.6	2		
	14:55	Off the coast of Fukushima Prefecture	5.4	3		
	21:03	Off the coast of Iwate Prefecture	5.9	2		
21-Mar	4:54	Off the coast of Fukushima Prefecture	4.6	3		
	4:59	Off the coast of Fukushima Prefecture	4.2	3		
	5:05	Off the coast of Fukushima Prefecture	4.5	2		
	8:43	Off the coast of Fukushima Prefecture	4.6	1		
	14:08	Off the coast of Ibaraki Prefecture	5.2	1		
22-Mar	6:24	Off the coast of Ibaraki Prefecture	4.3	1		
Ī	16:18	Off the coast of Fukushima Prefecture	6.7	2		
Ī	17:33	Off the coast of Ibaraki Prefecture	4.7	1		
	18:19	Off the coast of Fukushima Prefecture	6.4	4		
	18:44	Off the coast of Sanriku	6.5	3		
Ī	21:04	Off the coast of Ibaraki Prefecture	5.9	3		
Ī	22:51	Off the coast of Ibaraki Prefecture	5.9	2		
23-Mar	0:03	Off the coast of Ibaraki Prefecture	5.9	1		
Ī	7:12	Hamadori, Fukushima Prefecture	6.0	4		
	7:34	Hamadori, Fukushima Prefecture	5.5	3		
	7:36	Hamadori, Fukushima Prefecture	5.8	3		
	7:53	Hamadori, Fukushima Prefecture	5.1	1		
Ī	18:55	Hamadori, Fukushima Prefecture	4.7	2		
Ī	19:43	Off the coast of Ibaraki Prefecture	5.1	2		
24-Mar	8:56	Southern Ibaraki Prefecture	4.8	1		

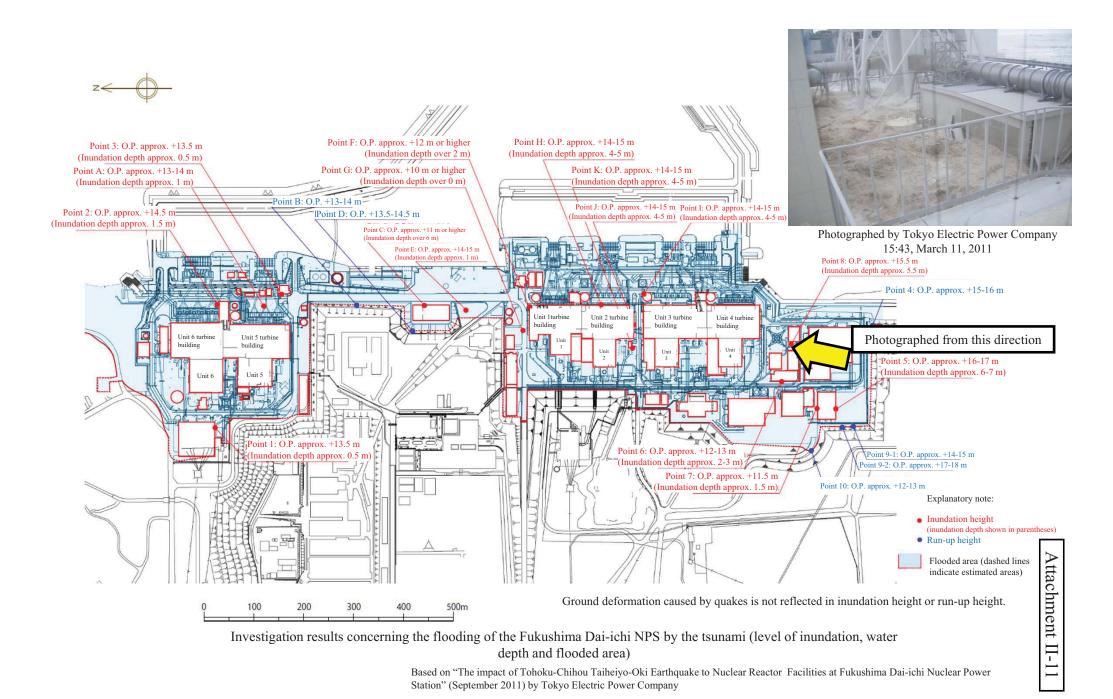
		Information on hy	ypocenter, magnitude, seism	ic intensity, tsunami, etc.
Date	Time	Hypocenter	Magnitude	Seismic intensity (Futabamachi, Fukushima)
24-Mar	17:20	Off the coast of Iwate Prefecture	6.2	3
25-Mar	2:08	Northen Ibaraki Prefecture	4.7	1
	3:16	Off the coast of Ibaraki Prefecture	4.3	1
	4:44	Off the coast of Miyagi Prefecture	4.8	1
26-Mar	19:18	Off the coast of Miyagi Prefecture	5.2	2
27-Mar	1:07	Off the coast of Ibaraki Prefecture	4.4	1
	20:08	Off the coast of Fukushima Prefecture	4.5	2
28-Mar	6:11	Off the coast of Ibaraki Prefecture	4.7	1
	7:23	Off the coast of Miyagi Prefecture	6.5	4
29-Mar	16:04	Off the coast of Fukushima Prefecture	4.3	3
	19:54	Off the coast of Fukushima Prefecture	6.6	3
30-Mar	22:00	Off the coast of Miyagi Prefecture	5.1	2
	22:19	Off the coast of Ibaraki Prefecture	5.0	2
31-Mar	16:15	Off the coast of Miyagi Prefecture	6.1	2

Explanatory note)



Based on the information on earthquakes, tsunamis and tsunami warnings/advisories

^{*} The starting time of the first waves of the tsunami was unidentified from the tidal data due to changes in tidal level caused by quakes and other factors.

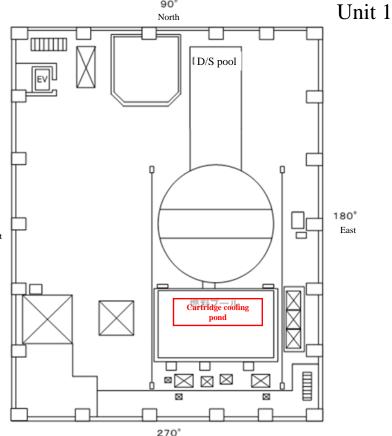


Attachment: II-12

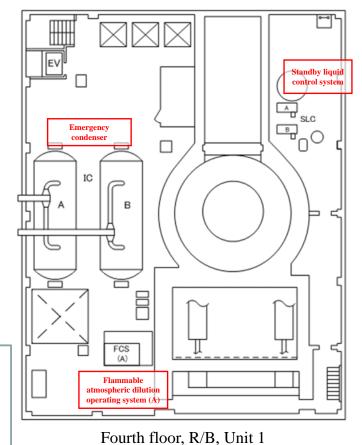
Radiation dose in R/B, T/B, etc., and the location of facilities housed therein

- This document describes the latest dose information provided by Tokyo Electric Power Company (TEPCO) while being based on the "Survey Map" which TEPCO created in order to organize past dose data for the purpose of radiation control.
- In addition, the document indicates the main facilities inside each building.
- The numbers in the figures indicate the radiation doses (mSv/h) measured o° at the respective spots. The colors circling the numbers correspond to the measurement dates listed in the margins of the figures.
- The radiation dose measurements were conducted for thirty-three days, from July 22 to October 1.

Unit for numbers in the document -Dose: mSv/h



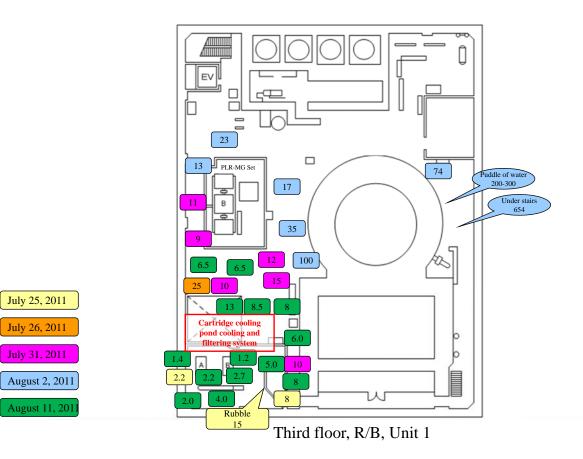
Fifth floor, R/B, Unit 1

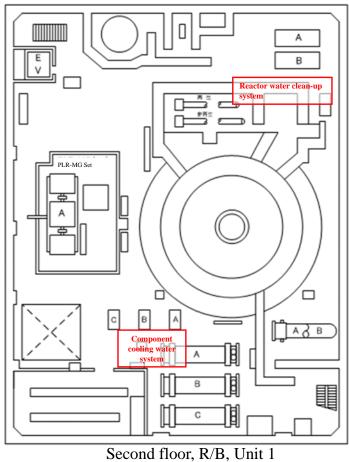


documents on Units 1 to 4 indicate the areas considered to have been under water based on the level of residual water inside buildings as of October 4.

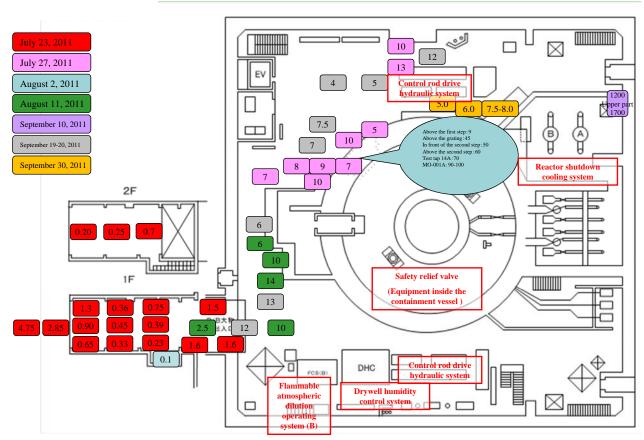
The parts colored in pale-blue in the

Based on data and documents by Tokyo Electric Power Company

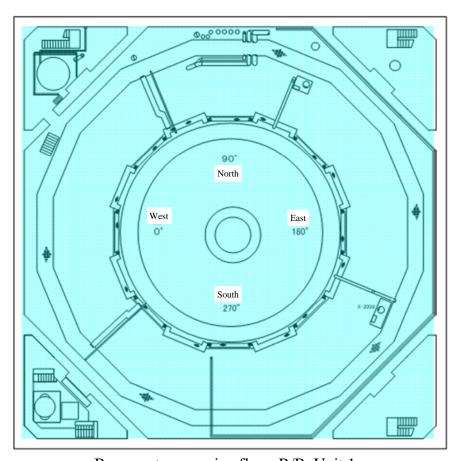




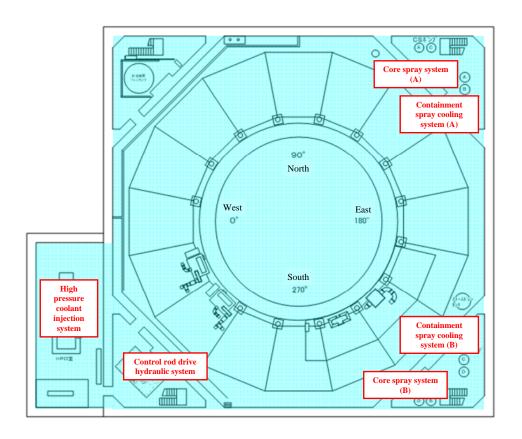
Based on data and documents by Tokyo Electric Power Company



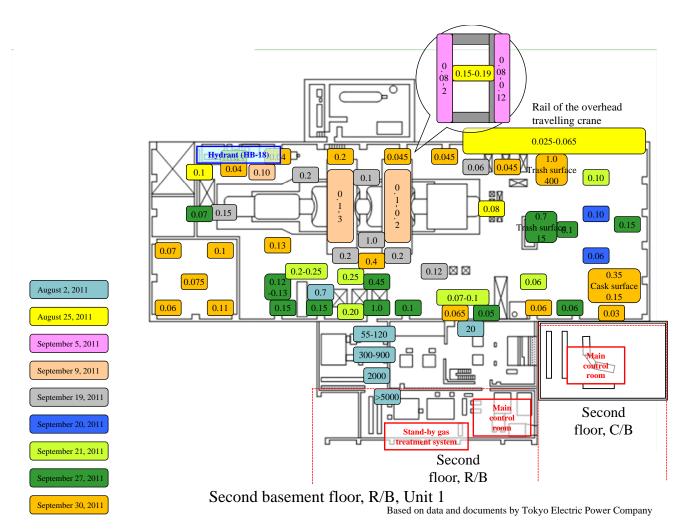
First floor, R/B, Unit 1

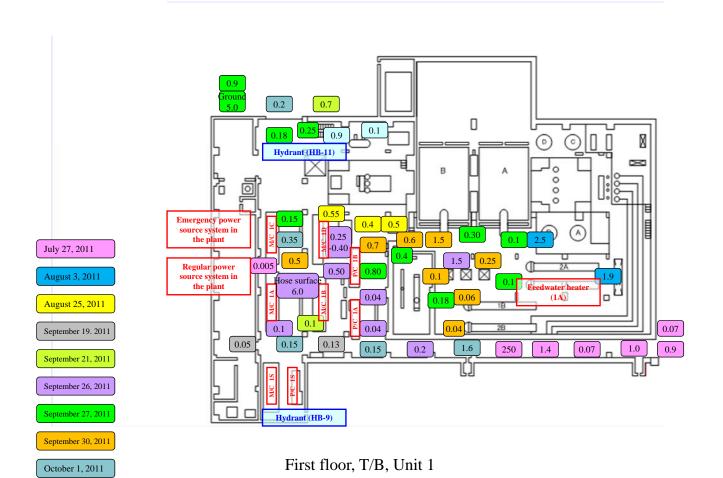


 $Basement\ mezzanine\ floor,\ R/B,\ Unit\ 1\\ Based\ on\ data\ and\ documents\ by\ Tokyo\ Electric\ Power\ Company$



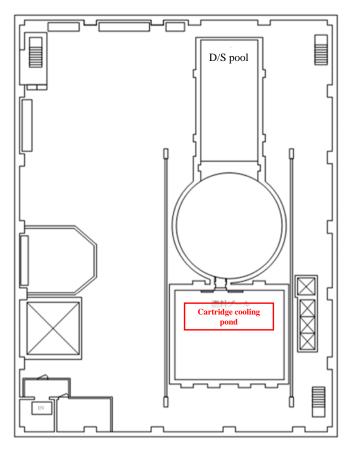
Basement floor, R/B, Unit 1



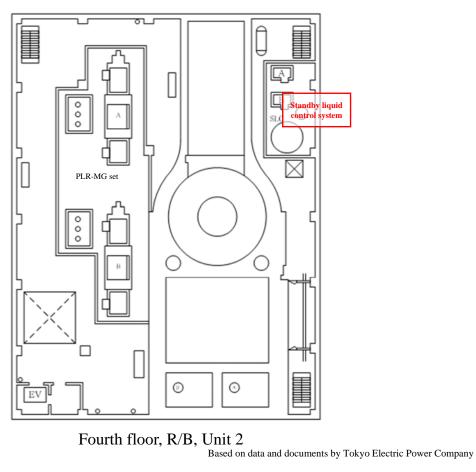


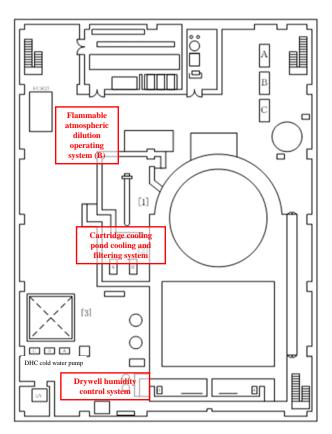
September 13, 2011 Diesel generator 0 oŏ 5.5 (stair landing) water/ pure water Diesel generator (A) Condenser Feedwater system ompressed air Condensate system Emergency power source system in First basement floor, C/B First basement floor, T/B Unit 1 Based on documents and data created by TEPCO

Unit 2

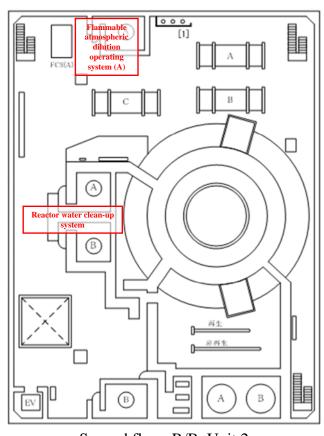


Fifth floor, R/B, Unit 2



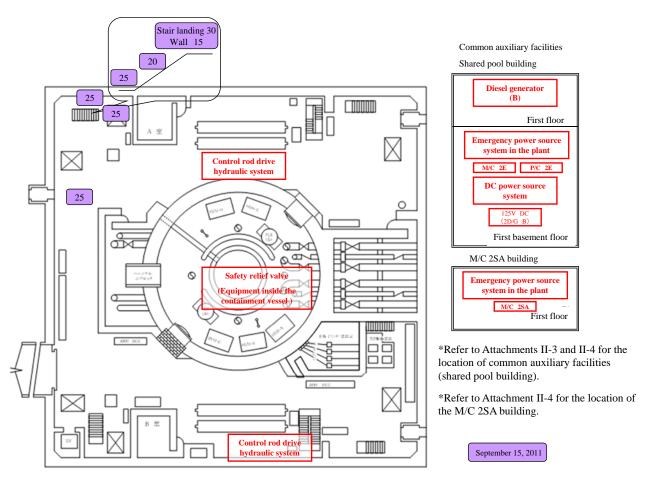


Third floor, R/B, Unit 2

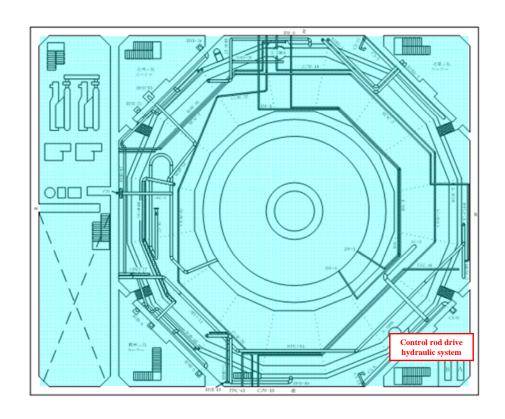


Second floor, R/B, Unit 2

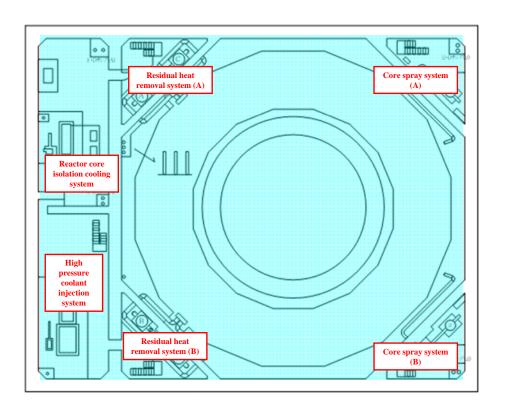
Based on data and documents by Tokyo Electric Power Company



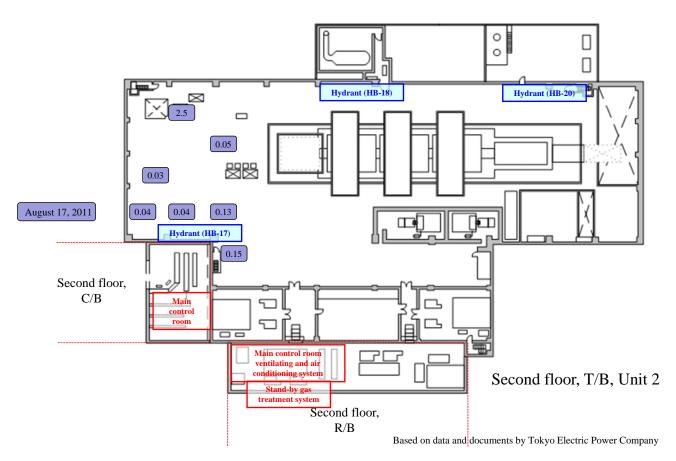
First floor, R/B, Unit 2

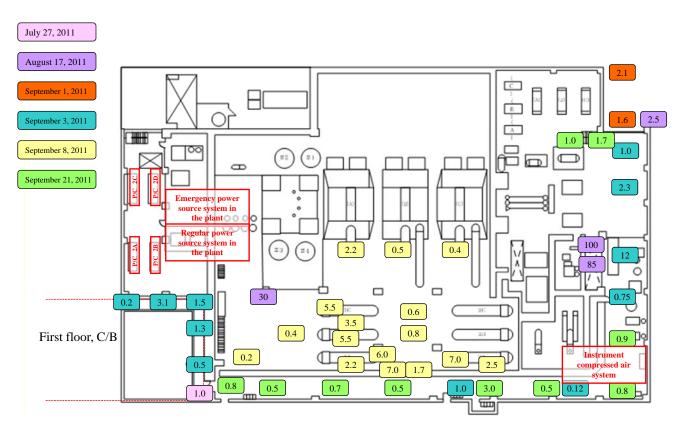


Basement mezzanine floor, R/B, Unit 2

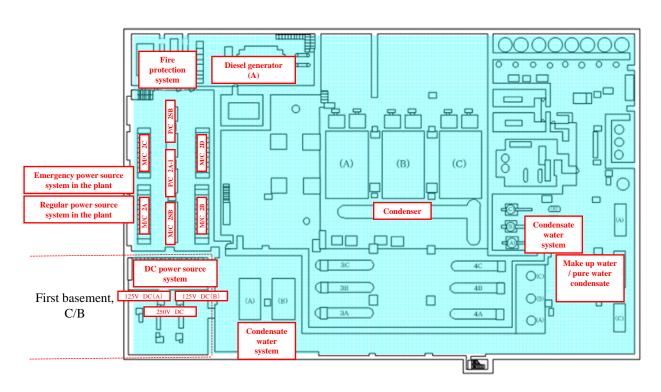


First basement floor, R/B, Unit 2



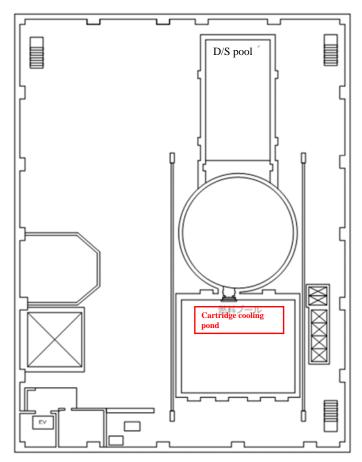


First floor, T/B, Unit 2

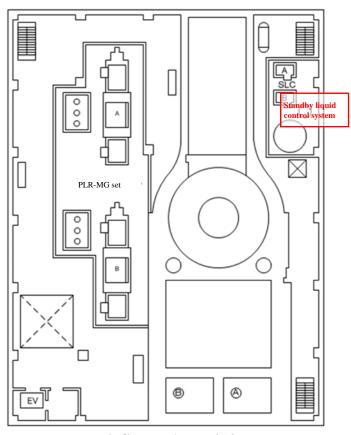


First basement floor, T/B, Unit 2

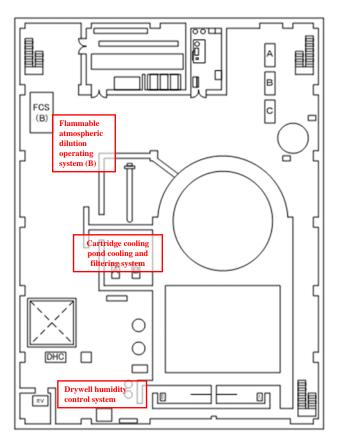
Unit 3



Fifth floor, R/B, Unit 3

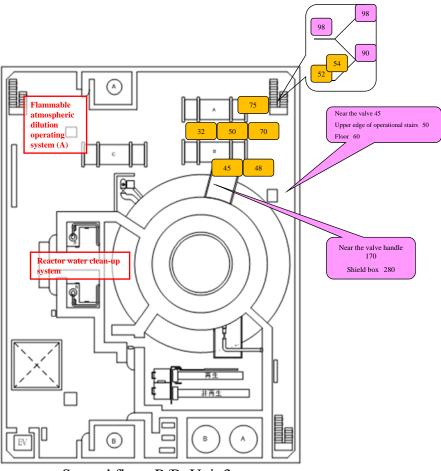


Fourth floor, R/B, Unit 3

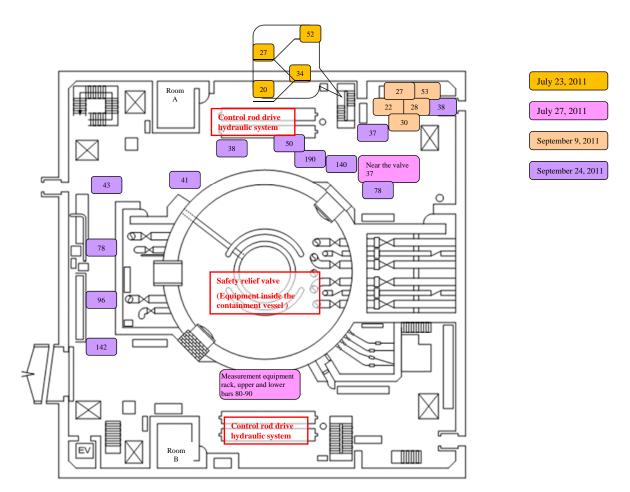


Third floor, R/B, Unit 3

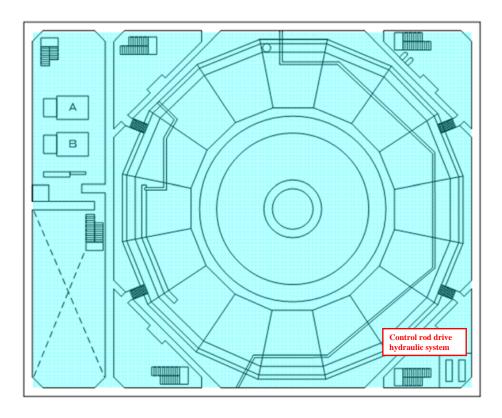
July 26, 2011 July 27, 2011



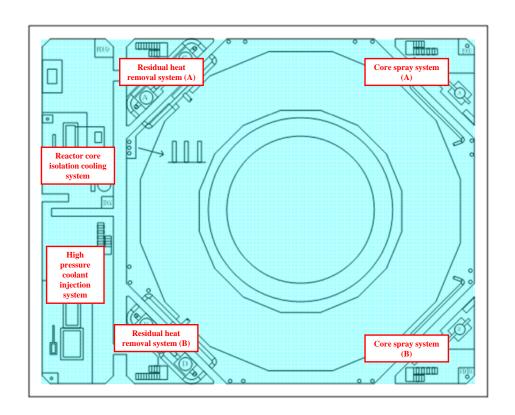
Second floor, R/B, Unit 3



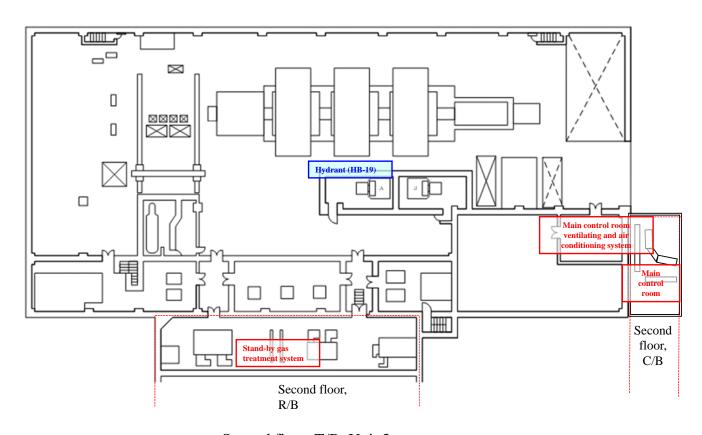
First floor, R/B, Unit 3



Basement mezzanine floor, R/B, Unit 3



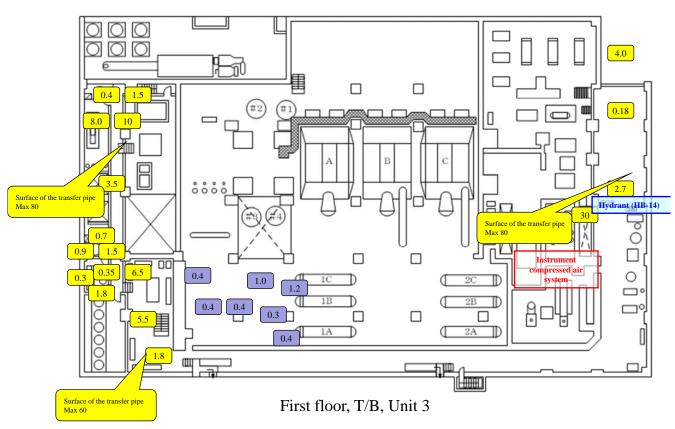
First basement floor, R/B, Unit 3



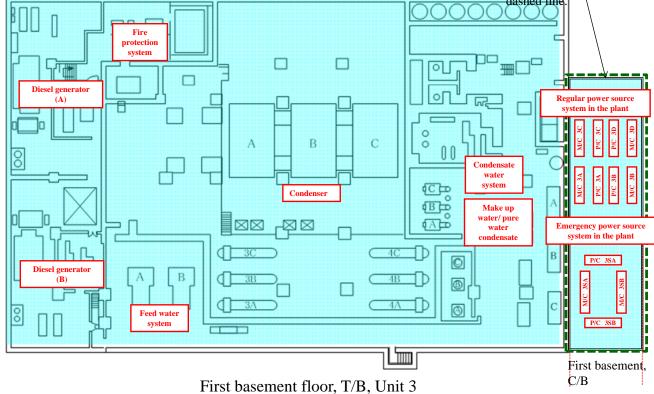
Second floor, T/B, Unit 3

July 22, 2011

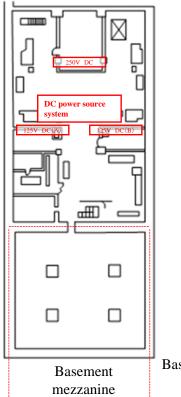
September 15, 2011



The basement mezzanine floor, T/B, Unit 3 is located above the area in the green dashed line.

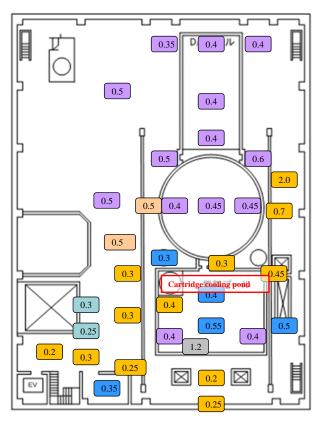


This basement mezzanine floor is located above the area in the green dashed line on the first basement floor, T/B, Unit 3.



Basement mezzanine floor, T/B, Unit 3

 $\begin{array}{c} \text{floor, C/B} \\ \text{Based on data and documents by Tokyo Electric Power Company} \end{array}$



August 2, 2011

August 9, 2011

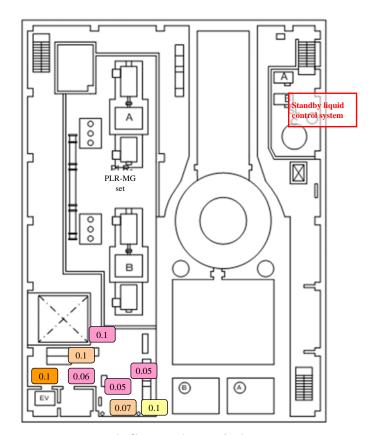
August 26, 2011

September 19, 2011

September 20, 2011

September 30, 2011

Fifth floor, R/B, Unit 4



July 25, 2011

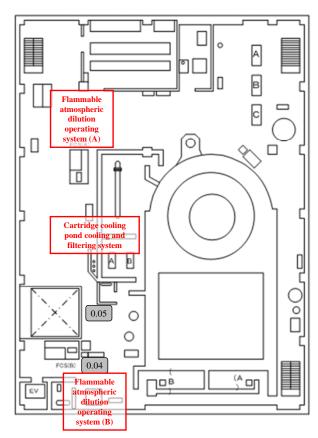
July 26, 2011

July 29, 2011

July 31, 2011

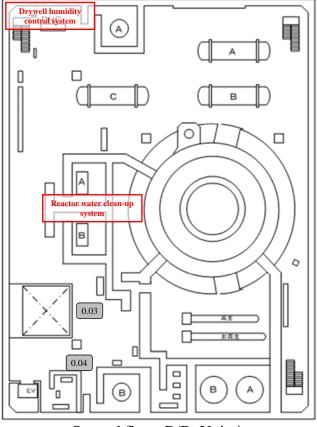
Fourth floor, R/B, Unit 4

July 28, 2011

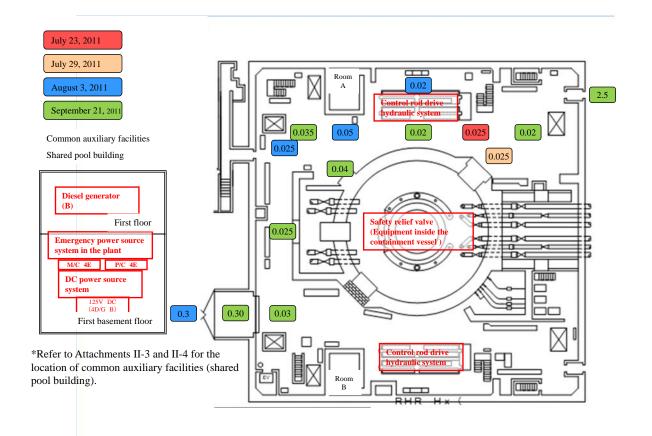


Third floor, R/B, Unit 4

July 28, 2011

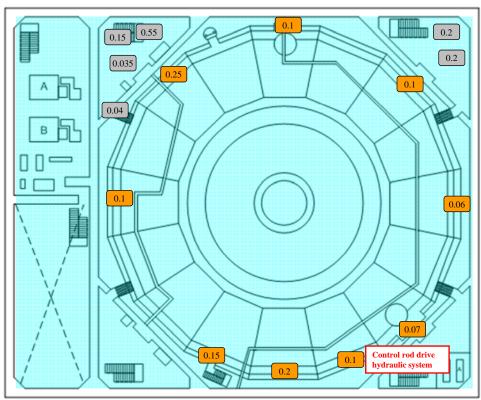


Second floor, R/B, Unit 4

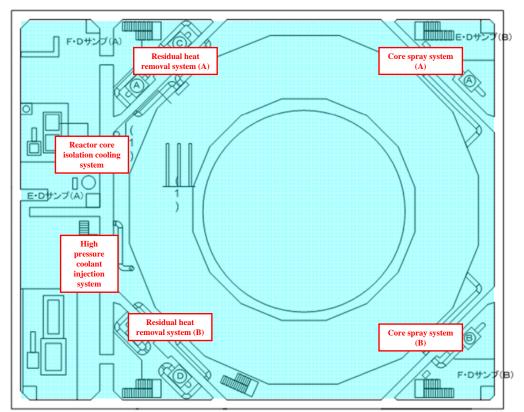


First floor, R/B, Unit 4

July 26, 2011 July 28, 2011

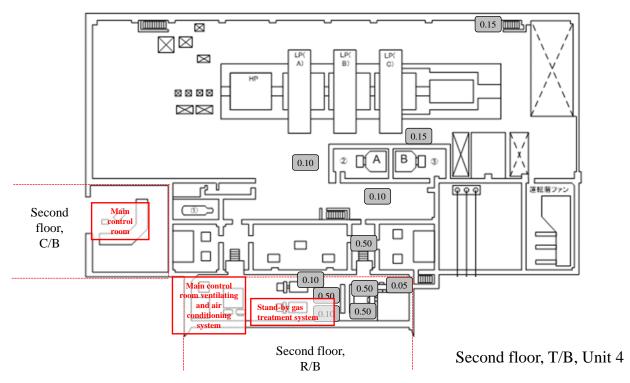


Basement mezzanine floor, R/B, Unit 4

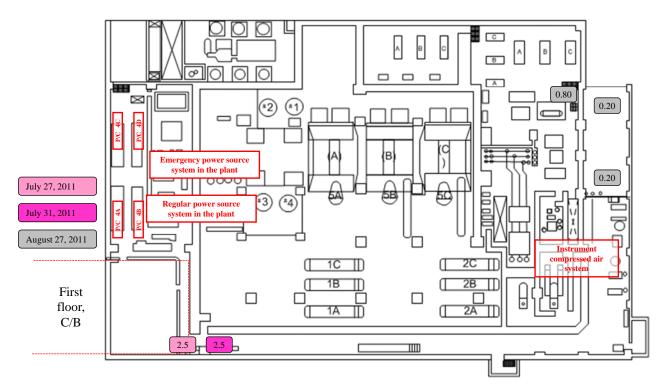


First basement floor, R/B, Unit 4

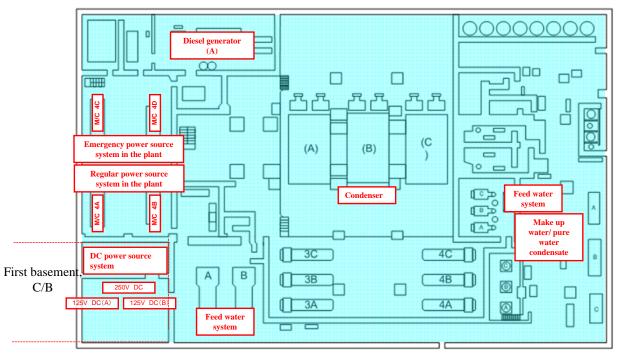
August 27, 2011



Based on data and documents by Tokyo Electric Power Company

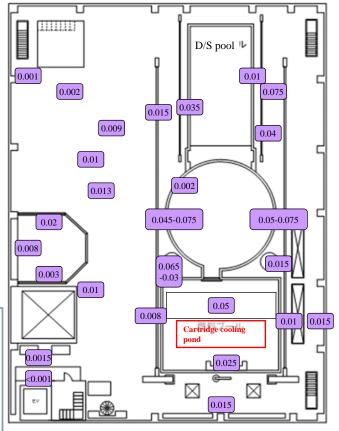


First floor, T/B, Unit 4



First basement floor, T/B, Unit 4

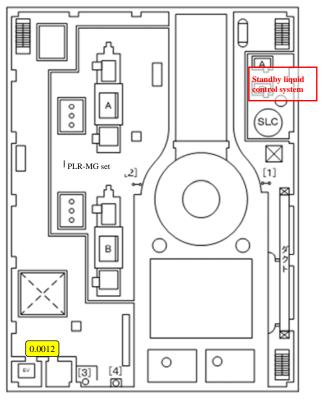
September 26, 2011



The parts colored in pale-blue in the document indicate the areas where workers of Tokyo Electric Power Company confirmed residual water puddles from August 18 to 30.

Fifth floor, R/B, Unit 5

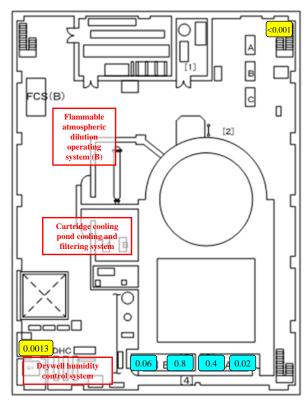
July 22, 2011



Fourth floor, R/B, Unit 5

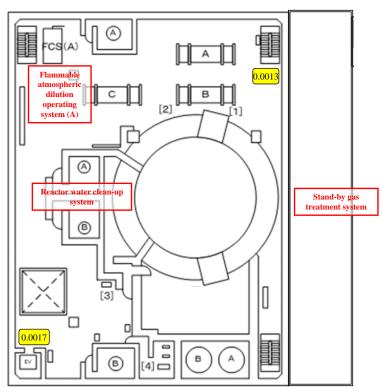
July 22, 2011

September 29, 2011

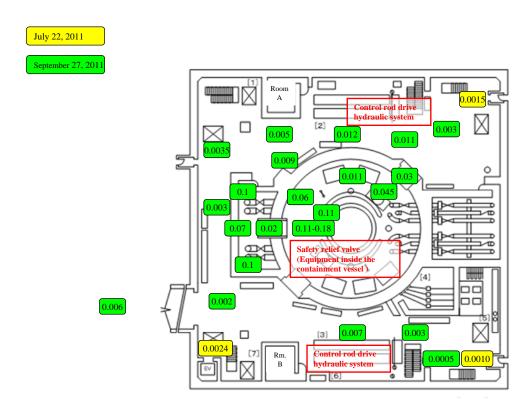


Third floor, R/B, Unit 5

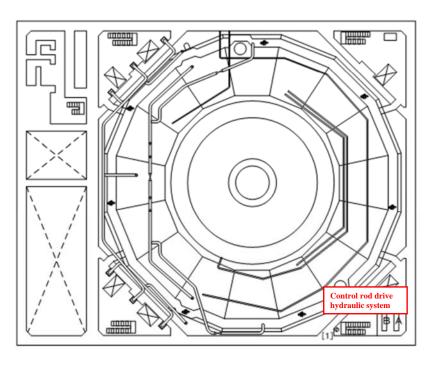
July 22, 2011



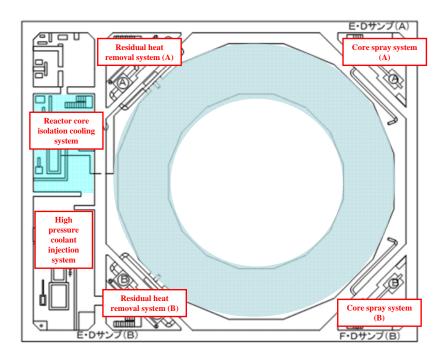
Second floor, R/B, Unit 5



First floor, R/B, Unit 5

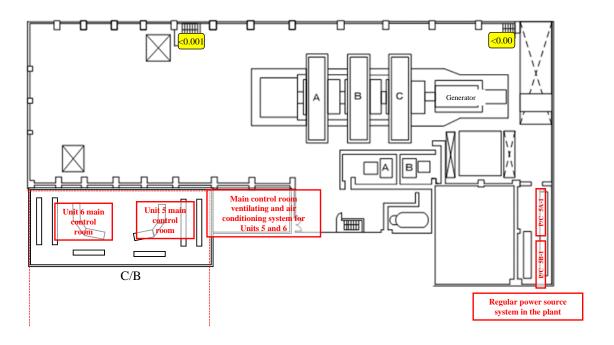


Basement mezzanine floor, R/B, Unit 5

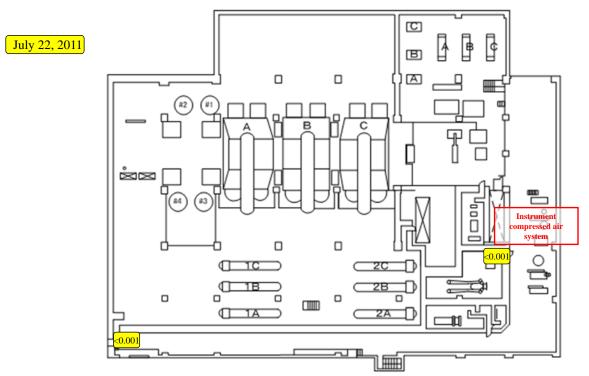


First basement floor, R/B, Unit 5

July 22, 2011



Second floor, T/B, Unit 5

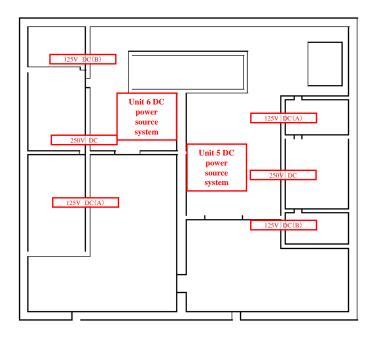


First floor, T/B, Unit 5

The basement mezzanine floor, T/B, Unit 5 is Diesel generator (B) Diesel generator (A) located above this HFF purple area. Fire Condensate Make up water / pure water condensate BBB B Feedwater system Emergency power source system in the plant Regular power source system in the plant First basement floor, T/B, Unit5 First basement, C/B

Based on data and documents by Tokyo Electric Power Company

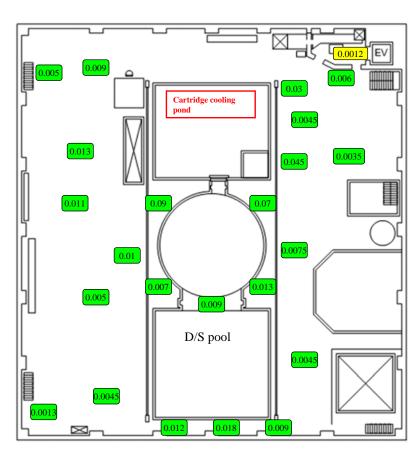
July 22, 2011 September 21, 2011



Basement mezzanine floor, T/B, Unit 5

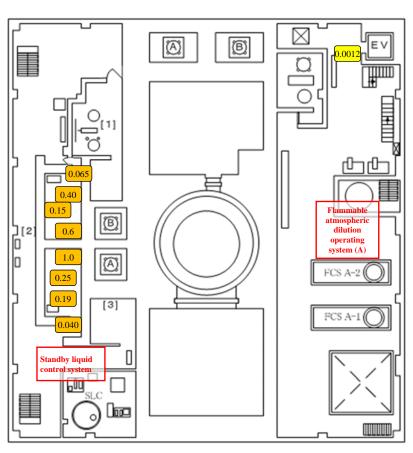
- This basement mezzanine floor is located above the purple area on the first basement floor, T/B, Unit 5.
- The Unit 6 DC power source system is also installed on this floor.





Sixth floor, R/B, Unit 6





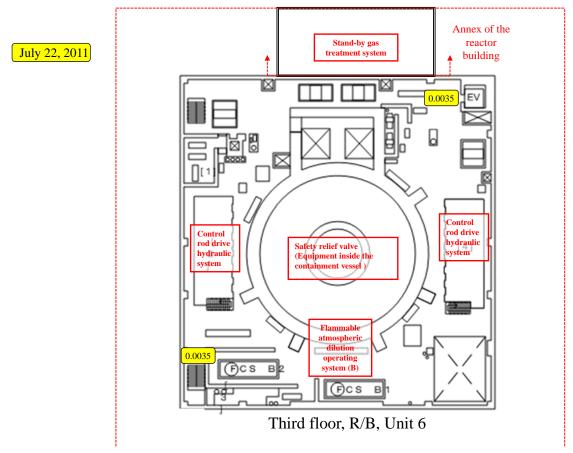
Fifth floor, R/B, Unit 6

July 22, 2011

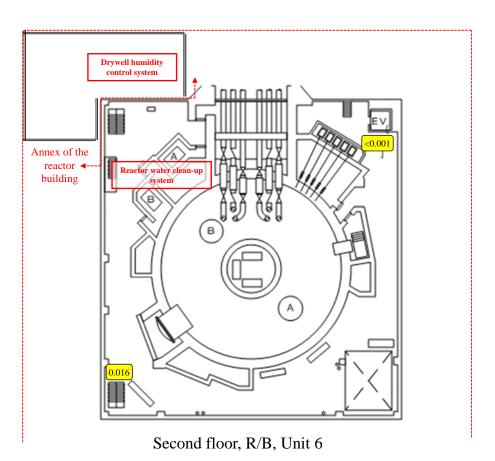
Cartridge cooling pond cooling and fiftering system

(4)

Fourth floor, R/B, Unit 6



July 22, 2011



Diesel generator building

Diesel generator
(B)

IF

Emergency power source system in the plant

P/C 6E 1BF

* Refer to Attachment II-4

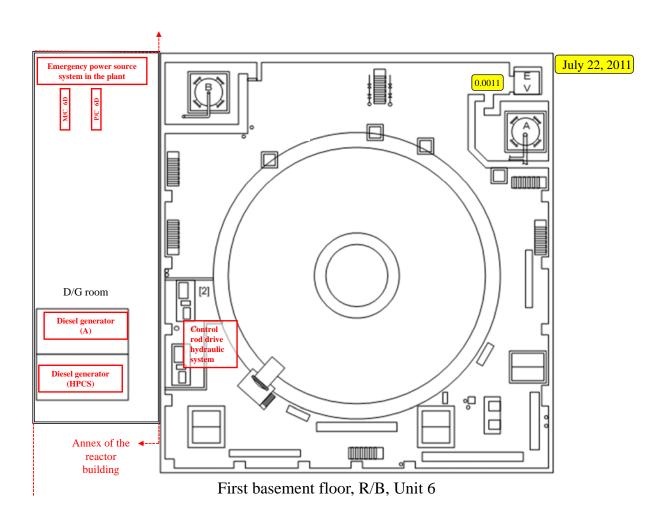
for the location of the diesel generator building.

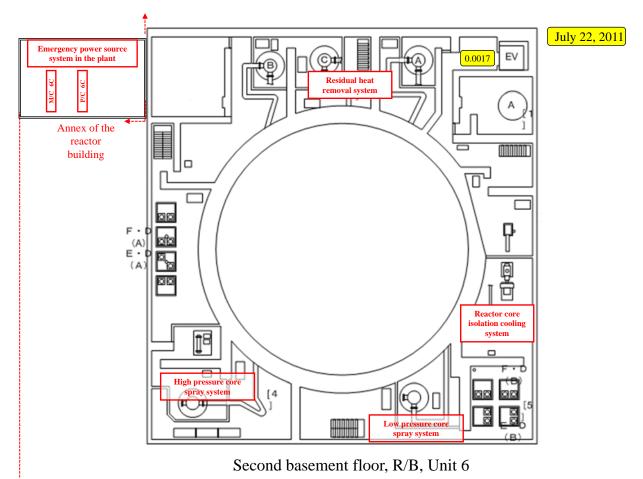
Emergency power source system in the plant

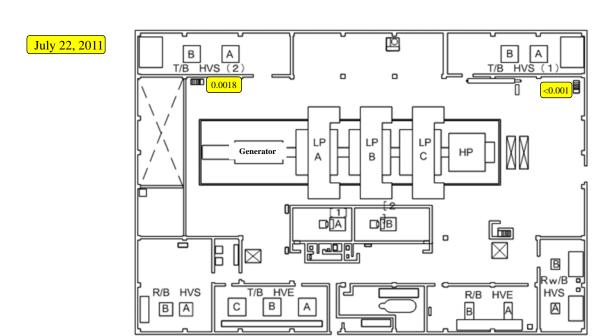
DC power source system

Annex of the reactor building

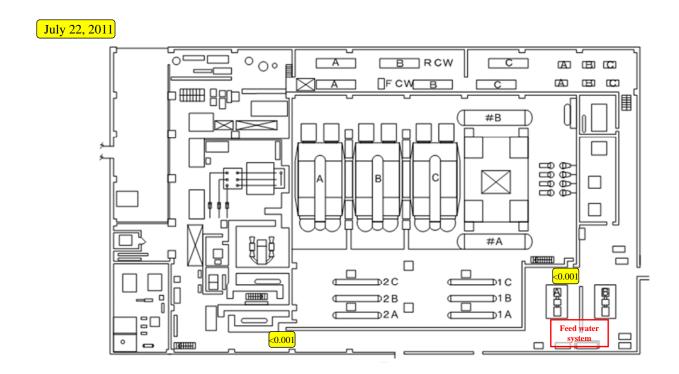
First floor, R/B, Unit 6







Second floor, T/B, Unit 6



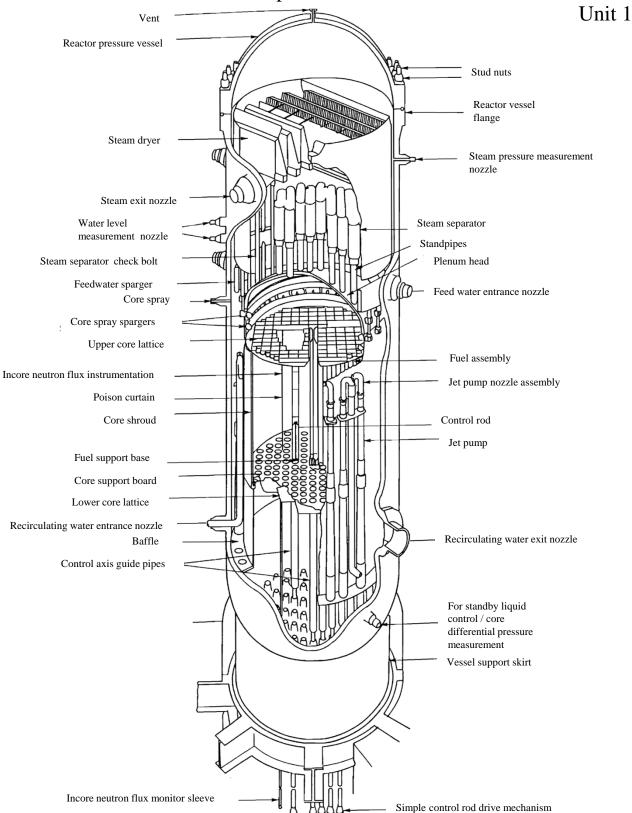
First floor, T/B, Unit 6

July 22, 2011 HFF 00 Instrument compressed air system 0000 **5**[<0.001 Make up vater / pure water condensate 器 復 水 C b O ⊗ <0.001 Regular power source system in the plant [1] C HPCP T/B В Unit 5 A

First basement floor, T/B, Unit 6

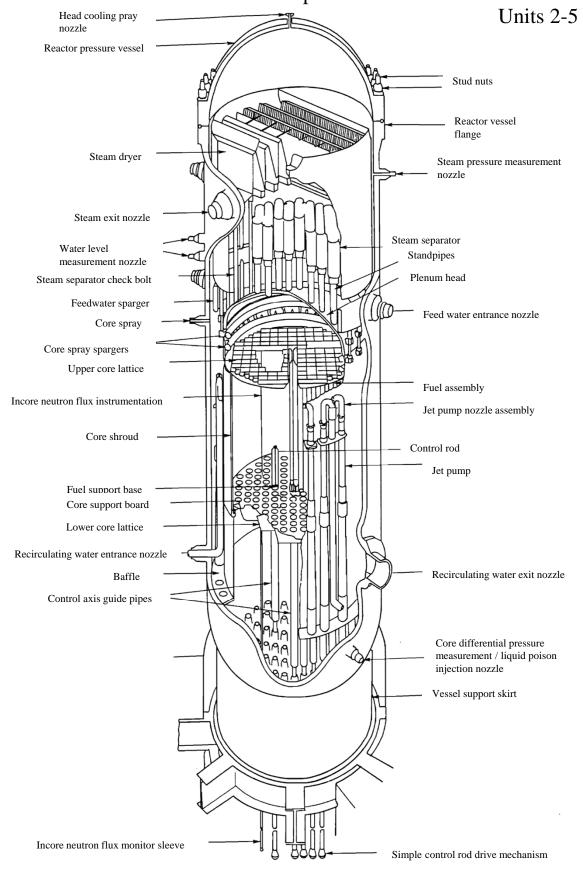
Attachment II-13

Structures and components inside the reactor pressure vessel



Source: Tokyo Electric Power Company, "Fukushima Dai-ichi NPS: Application for reactor establishment permit," April 2002

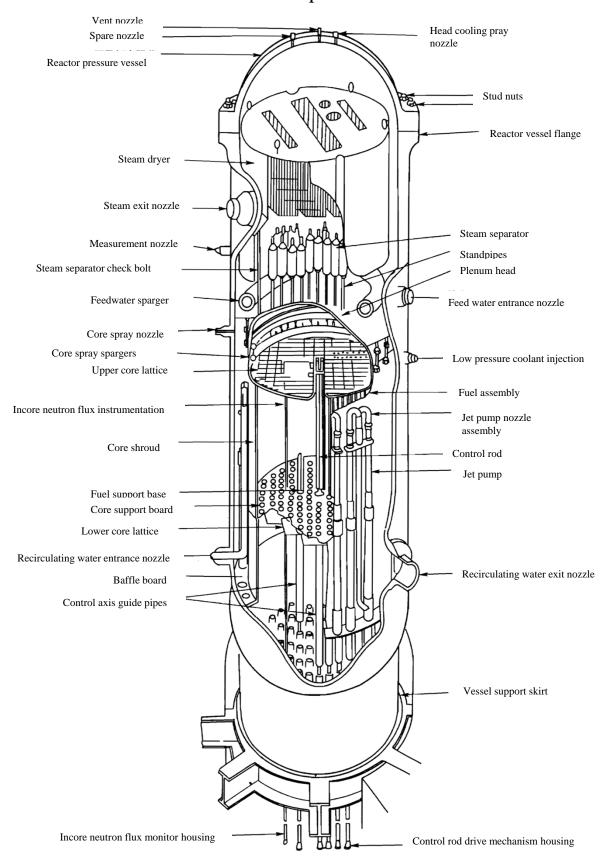
Structures and components inside the reactor pressure vessel



Source: Tokyo Electric Power Company, "Fukushima Dai-ichi NPS: Application for permit for changes to reactor establishment" (as of June 2003)

Structures and components inside the reactor pressure vessel

Unit 6



Source: Tokyo Electric Power Company, "Fukushima Dai-ichi NPS: Application for permit for changes to reactor establishment" (as of December 2010)

Principle of measurement by reactor water level and reactor pressure instrumentation systems

