Attachment 1

Design Basis Earthquake Ground Motion Ss Established during Seismic Safety Evaluations at Respective Nuclear Power Stations Following the Revision of the Guidelines for Seismic Design Evaluation and the Approach Used

April 16, 2008

Utilities	Power station	A. Earthquake ground motion decided by identifying a hypocenter for each site					Evaluation result for B Earthquake ground motion decided without identifying a hypocenter (*)	Design basis earthquake ground motion(*)		Approach to decision and other comments
		Earthquake for consideration								
		Hypocenter		Scale	Fault length	Main characteristics		Ss (established this time)	S2 (reference)	
Hokkaido Electric Power Company	Tomari	Shiribetsugawa Fault		M7.0	16km	Newly considered	Both earthquake ground motion for response spectrum and fault model analysis were below the design basis earthquake ground motion Ss	450 gal	550 gal	370	・To decide design basis earthquake ground motion Ss, consider additional margin to the earthquake ground motion evaluated in A and B
		F_B-2 Fault		8.2	101km	Consider continuity of multiple faults					
Tohoku Electric Power Company	Higashidori	Hypothetical Northern Sanriku-oki earthquake (interplate earthquake)		8.3	-		Both earthquake ground motion for response spectrum and fault model analysis were well below B indicated to the left	450	450	375	・For intraplate earthquake, it is not established as an earthquake for consideration since the impact to the site is minimal ・Design basis earthquake ground motion Ss is represented by B (A is well below B)
		Site eastern offshore fault (inland crustal earthquake)		6.8	14.5km	Changed fault length from the former 15km					
	Onagawa	Hypothetical multi-segment Miyagi-oki earthquake (interplate earthquake)		8.2	-		・Response spectrum Ss-D:580 gal ・Fault model analysis Ss-F:445 gal	Ss-B:450	Ss-D:580 Ss-F:445 Ss-B:450	375	・Ss-D:Establish earthquakes for consideration so that it envelopes the evaluation result of the earthquake ground motion based on response spectrum. ・Ss-F:Conduct earthquake ground evaluation based on fault model analysis for the earthquake for consideration, and select the one with the most impact.
		Site lower side earthquake (ocean intraplate earthquake)		7.1	-						
		F-6~F-9 fault		7.1	22km	Consider continuity of multiple faults					
Tokyo Electric Power Company	Fukushima Daiichi Fukushima Daini	Shiozaki-oki earthquake (interplate earthquake)		7.5 7.3	-	In addition to the earthquake ground motion evaluation of the two earthquakes to the left (M7.5, M7.3) which occurred in November 1938, included the M7.0 earthquake which occurred in May of the same year, to estabish the hypotheical Shiozaki-oki earthquake in which these 3 become a multi-segmented Shiozaki-oki earthquake group as the earthquake for consideration and conduct evaluation.	Ss-1:450	Ss-3:450	Ss-1:450 Ss-2:600 Ss-3:450	370	・Ss-1:Establish so that it exceeds the evaluation results for inland crustal earthquake/interplate earthquake ・Ss-2:Establish so that it exceeds the evaluation results for ocean intraplate earthquake
		Futaba fault(inland crustal earthquake)		7.6	47.5km	Changed fault length from the former 18km					
		2003 Miyagi-oki earthquake (ocean intraplate earthquake)		7.1	-	For evaluation, presume the hypocenter of the main earthquake to be within the ocean plate at the lower side of the site	Ss-2:600				
Chubu Electric Power Company	Hamaoka	Interplate earthquake	Hypothetical Tokai earthquake	8.0	-		・Response spectrum Ss-D_H:800 ・Fault model analysis Ss-1_H:617 Ss-2_H:588 Ss-3_H:766	Envelope Ss-D_H -	Ss-D_H:800 Ss-1_H:617 Ss-2_H:588 Ss-3_H:766	600	・ Ss-1_H:Hypothetical Tokai earthquake (empirical Green's function method) ・ Ss-2_H:Hypothetical Tokai earthquake (statistical Green's function method) ・ Ss-3_H:Hypothetical Tokai, Tonankai, Nankai earthquake(statistical Green's function method)
			Hypothetical Tokai/Tonankai earthquake	8.4	-						
			Hypothetical Tokai/Tonankai/Nankai earthquake	8.7	-						
		Suruga Tootoumi 1589 earthquake (ocean intraplate earthquake)		6.7	-						
		Senoumi ocean basin west margin fault zone		7.4	34km	Consider continuity of multiple faults					
Hokuriku Electric Power Company	Shiga	Sasanami-oki fault zone(total length)		7.6	43km	As a result of the active fault survey, considered the continuity of the Sasanami fault zone (eastern part) and the Sasanami fault zone (western part) just in case, even though they are considered to be single faults.	・Response spectrum Ss-1:600 ・Fault model analysis Ss-2:482 Ss-3:509	450	Ss-1:600 Ss-2:482 Ss-3:509	490	・Ss-2:Establish asperity based on survey results ・Ss-3:Establish asperity close to site ・Use Ss-1 as representative because B is significantly below Ss-1
Kansai Electric Power Company	Mihama	C fault		6.9	18km		- Response spectrum Ss-1_H:600 ・Fault model analysis Ss-2_H:430	Envelope both nuclear power plants Ss-1_H	Ss-1_H:600 Ss-2_H:430	405	・ Ss-1_H:Establish earthquakes for consideration so that it envelopes the evaluation result of the earthquake ground motion based on response spectrum. ・Ss-2_H:Establish separately because part of the calculation result for Mihama Power Station exceeds Ss-1_H as a result of conducting earthquake ground motion evalations by fault model analysis of the earthquake for consideration.
	Takahama	Fo-A fault		6.9	23km	Newly considered	- Response spectrum Ss-1_H:550		550	370	
	Ohi						- Response spectrum Ss-1_H:600		600	405	
Chugoku Electric Power Company	Shimane	Shinji fault		7.1	22km	Changed fault length from the former 10km	600	450	600	456	・Use A because B is enveloped by A
		Izumo 880A.D. earthquake				Evaluation based on earthquake scale and epicenter location etc. according to documentation					
Shikoku Electric Power Company	Ikata	Site frontal ocean fault group (inland crustal earthquake)		7.6	42km	Earthquake that has the most significant impact on the power plant To take uncertainty into consideration, evalute making the fault plane a slope (fault slope angle 30°)	・Response spectrum Ss-1 :570 ・Fault model analysis Ss-2NS:318 Ss-2EW:298	Envelope Ss-1	Ss-1:570 Ss-2NS:318 Ss-2EW:298	473	・Establish design basis earthquake ground motion Ss-1 so that it envelopes B and S2 based on the former guideline. ・Ss-1 enevelopes both Ss-2NS and Ss-2EW
		Hypothetical Nankai earthquake (interplate earthquake)		8.6	-	Model of the Central Disaster Prevention Council					
		Hypothetical site lower side intraplate earthquake (ocean intraplate earthquake)		7.0	-	Presume the maximum scale earthquake in the relevant region at the lower site of the site					
Kyushu Electric Power Company	Genkai	Takekoba fault		6.9	5km	Evaluated previously as not impacting the site	・Response spectrum Ss-1:500 ・Fault model analysis Ss-2:277 Ss-3:329	Envelope Ss-1	Ss-1:500 Ss-2:277 Ss-3:329	370	・Ss-2:Partially exceeds Ss-1 for horizontal motion (Shiroyama Minami fault) ・Ss-3:Partially exceeds Ss-1for vertical motion (Takekoba fault)
		Shiroyama minami fault		7.0	19km	Evaluated previously as not impacting the site					
	Sendai	Gotanda fault		6.9	19km	Evaluated previously as not impacting the site	・Response spectrum Ss-1:540	Envelope Ss-1	540	372	・The earthquake ground motion evaluation results by fault model analysis for A does not exceed Ss-1
		F-A fault		6.9	18km	Changed fault length from the former 15 km					
		F-C fault		6.8	16km	Changed fault length from the former 10 km					

Electric Power Company	Power station	A. Earthquake ground motion decided by identifying a hypocenter for each site					Evaluation result for B Earthquake ground motion decided without identifying a hypocenter (*)	Design basis earthquake ground motion(*)		Approach to decision and other comments
		Earthquake for consideration				Evaluation results(*)		Ss (established this time)	S2 (reference)	
		Hypocenter	Scale	Fault length	Main characteristics					
Japan Atomic Power Company	Tokai Daini	Kagoshimanaga 1896 earthquake (interplate earthquake)	7.3	-		・Response spectrum Ss-D_H :600 ・Fault model analysis Ss-1_H①:516 Ss-1_H(2):475	Envelope Ss-D_H	Ss-D_H :600 Ss-1_H①:516 Ss-1_H(2):475	380	
		Southern area of Ibaraki pref. intraplate earthquake (ocean intraplate earthquake)	7.3	-						
		Kanto plains northwest margin fault zone (Inland crustal earthquake)	8.0	82km	Consider continuity of multiple faults					
	Tsuruga	Kaburaki fault	6.8	19km		・Response spectrum Ss-D_H :650 ・Fault model analysis Ss-1_H①:498 Ss-1_H(2):478	Envelope Ss-D_H	Ss-D_H :650 Ss-1_H①:498 Ss-1_H(2):478	532	
		Urasoko-Uchiikemi	6.9	18km	Evaluated previously as having minimal impact on the site					
		Urasoko-Ikenokochi	6.9	25km	Evaluated previously as having minimal impact on the site					
		Northern side of Utsurogi Pass-Ikenokochi	6.9	23km	Changed fault length from the former 16 km					
		C fault series	6.9	18km	Evaluated previously as having minimal impact on the site					

(*)Ss has both “horizontal motion” elements and “vertical motion” elements. The values indicated are representative values for “horizontal motion” for 0.02 sec. period.

Attachment 2