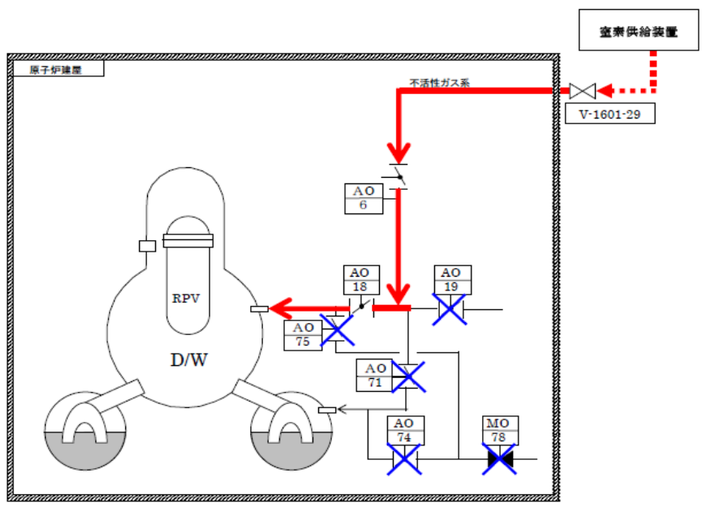
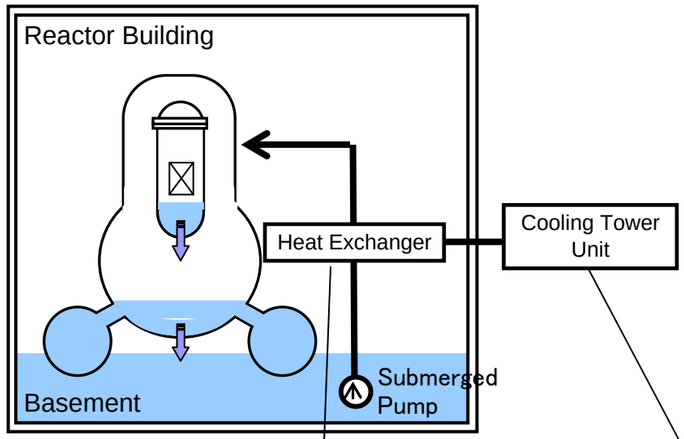
Progress Status Classified by Issues (Photos and Figures)

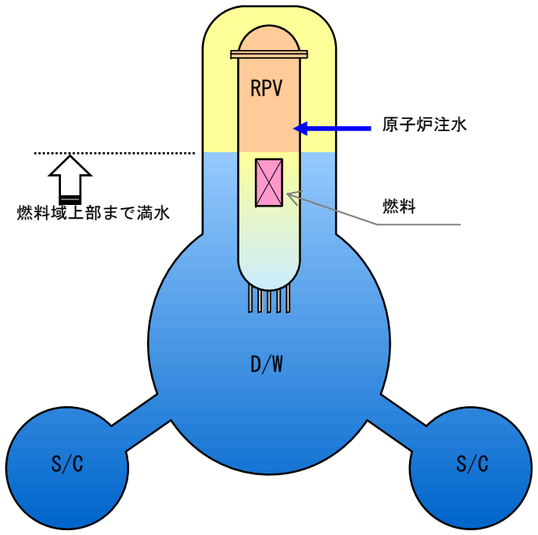
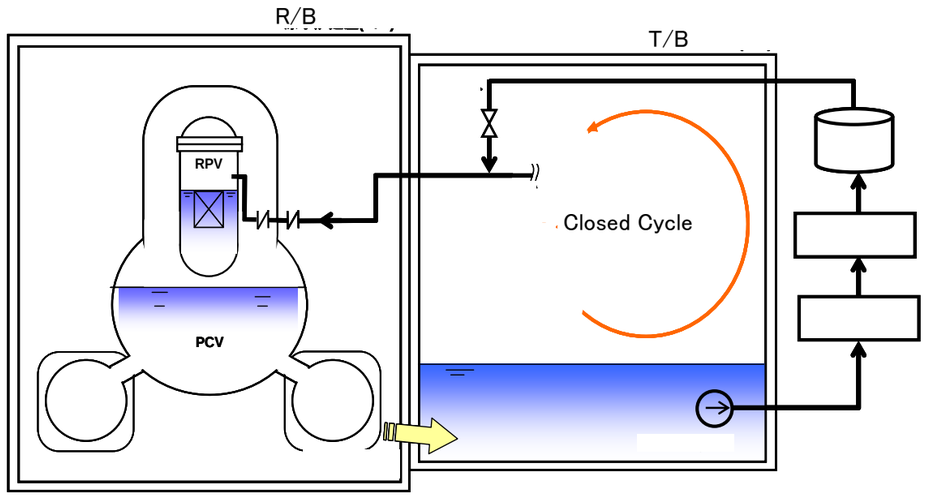
Reference

Issues			Countermeasures	Implementation Status	Reference (Photos and Figures)
I. Cooling	(1) Cooling the Reactor	Unit 1	Countermeasure [76] Improvement of work evironment	Removal of debris, Measurement of radiation dose, Enter into the building (May 9) RPV water gauge proof (May 10) PCV pressure proof (May 11) Setting water level indicator of underground in Reactor Building (May 27) Setting temporary RPV puressure indicator	 Checking inside of the reactor buildings by Packbot   Measuring radiation dose inside of reactor building Setting water level indicator
			Countermeasure [11] Inject nitrogen gas into the PCV	Implementing from April 6 Total inject of nitrogen gas : 45,000m3 (June 15)	Nitrogen supply apparatus  Syetem outline of nitrogen injection 

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures		Implementation Status	Reference (Photos and Figures)
I. Cooling	(1) Cooling the Reactors	Unit 1	Countermeasure [13] Secure heat exchange function for the reactor	- Due to the leakage from the primary containment vessel, we judged that it is difficult to secure water level of the primary containment vessel necessary to enable operation of the pump for the alternative reactor cooling system by increasing the water injection from outside into the reactor pressure vessel. - Therefore, we changed the plan to give priority to the establishment of circulating injection cooling for the reactor. - We are studying the possibility of establishing circulating cooling within the reactor building by using accumulated water in the basement of the reactor building as the water ・Establishment of cooling tower unit (May 17~)	[Under consideration] Outline of circulating cooling system within the reactor building   Plate-type heat exchanger Demolished and removed debris at the truck bay door, which would be obstacle for installation of alternative cooling system (from May 10 to May 15)  Inside reactor building of Unit 1 in front of the truck bay door  Cooling tower unit June 3, Completion of build-up of cooling unit on the trailer

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures		Implementation Status	Reference (Photos and Figures)
I. Cooling	(1) Cooling the Reactors	Unit 1	Countermeasure [14] Continue cooling by minimum water injection rate		Image of flooding the PCV  Inspection of water level gauge 
			Countermeasure [16] Seal the leakage location in the PCV		
			Countermeasure [9] Flood the PCV	- We started the flooding operationon May 6, however since leakage from the primary containment vessel was found, sealing of the leakage point is being considered.	
			Countermeasure [12,45] Consideration and preparation of reuse of processed water	- Site survey (April 26, May 11) - Work on injection line (May 21) - Operation will start when accumulated water process starts - Change Unit 1 reactor injection pump to upland pump (June 4)	 System outline of water reuse as reactor coolant by processing accumulated water
			Countermeasure [12,14,45] Establishment of circulating injection cooling	Continue to Step 2	

Progress Status Classified by Issues (Photos and Figures)

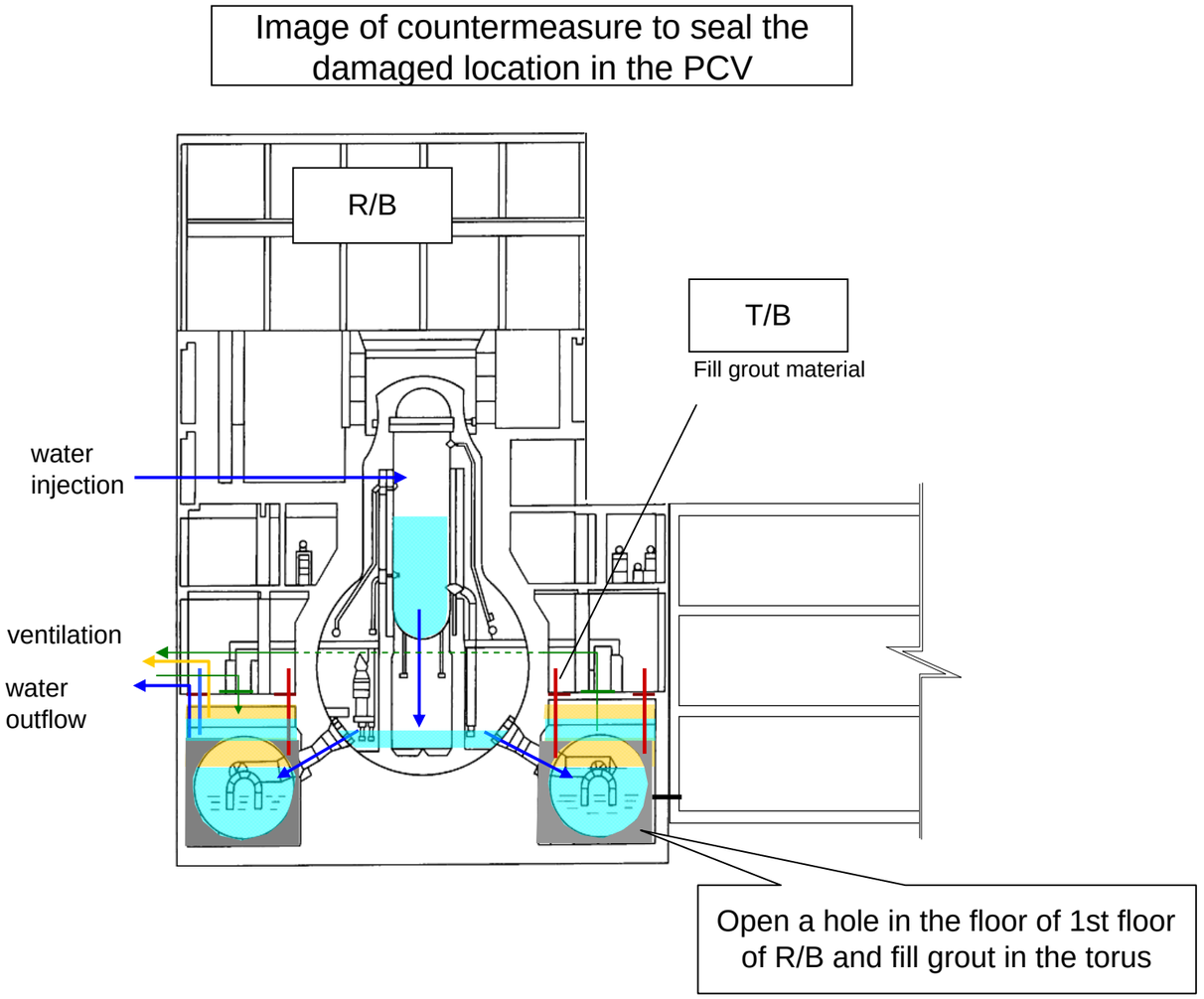
Issues		Countermeasures		Implementation Status	Reference (Photos and Figures)
I. Cooling	(1) Cooling the reactors	Unit 2	Countermeasure [76] Improvement of work environment	Measurement of radiation dose, Preparation to enter into the building	
			Countermeasure [11] Inject nitrogen gas into the PCV	Installed piping to the entrance of the building (May 7)	
			Countermeasure [13] Secure heat exchange function for the reactor	- Planning site survey for detail design after improvement of work environment	
			Countermeasure [6] Consideration of sealing the leakage location in the PCV	- Testing the sealing measure at laboratory <next step> - based on the result of test at laboratory, move on to countermeasure [16]	
			Countermeasure [16] Seal the leakage location in the PCV	- Start construction after confirming the feasibility of sealing method	
			Countermeasure [9] Flood the PCV		
			Countermeasure [14] Fuel cooling by minimum water injection rate	- Continue injecting water within the limit of storage capacity of leaked water	
			Countermeasure [12,45] Consideration and preparation of reusing processed water	- Implementing injection line work (ongoing from April 9) - Switch Unit 2 reactor injection pump to upland pump (May 30) - Inservice with the launch of accumulated water treatment	
			Countermeasure [12,14,45] Establishment of circulating injection cooling	Continue to Step 2	

Image of countermeasure to seal the damaged location in the PCV

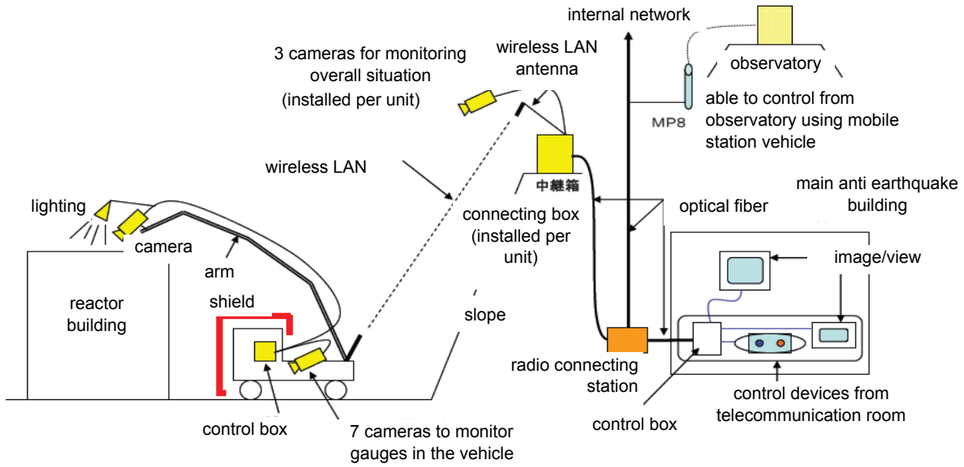
Progress Status Classified by Issues (Photos and Figures)

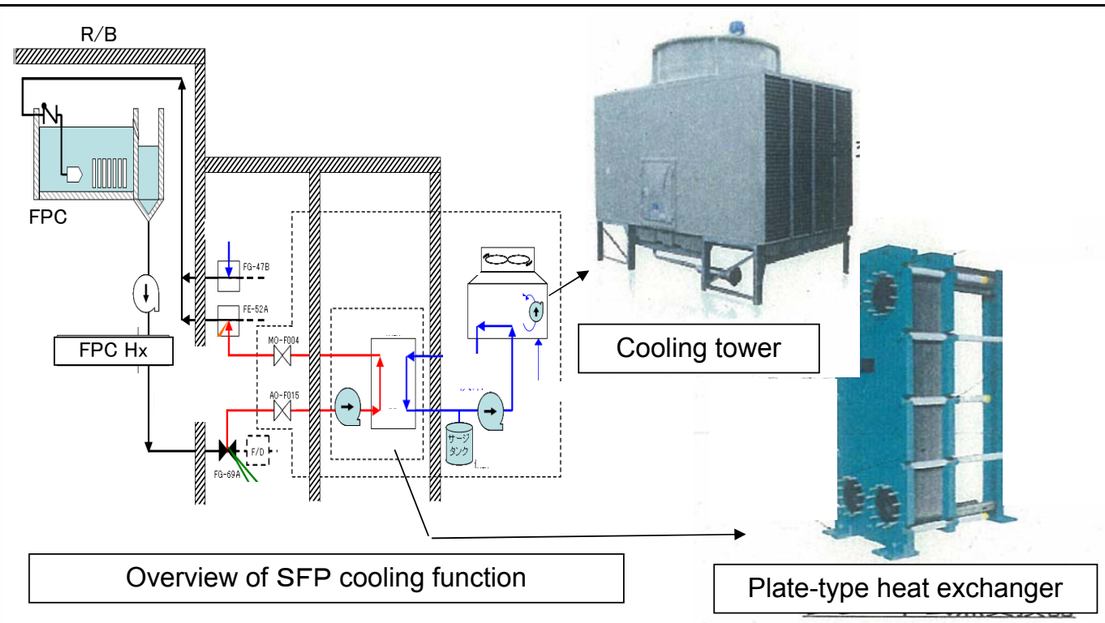
Issues		Countermeasures		Implementation Status	Reference (Photos and Figures)
I. Cooling	(1) Cooling the reactors	Unit 3	Countermeasure [76] Improvement of work environment	- Removal of debris, Measurement of radiation dose, Preparation to enter into the building	Demolished and removed debris at the truck-bay door, which would be obstacle for installation of alternative facility Truck-bay door / Broken pillars Truck-bay door / Inside Machine hatch space on the 1st floor of reactor building  (After removal May 25) (After removal May 30) (After removal June 4) Status of debris demolition and removal work  Removal of outside pillars by a radio controlled backhoe Removal of debris by "Brokk" (wired remote control) Packing into container bv a shielded forklift
			Countermeasure [11] Inject nitrogen gas into the PCV	- Installed piping to the entrance of the building (May 11)	
			Countermeasure [13] Secure heat exchange function for the reactor	- Site survey for detail design will start after the improvement of work environment	
			Increase water injection	- Will confirm the leakage status/temperature etc and choose countermeasure [16] or [14]	
			Countermeasure [16] Seal the leakage location in the PCV		
			Countermeasure [9] Flood the PCV		
			Countermeasure [14] Fuel cooling by minimum water injection rate		
			Countermeasure [12,45] Considenration and preparation for reuse of processed water	- Implementing injection line work (ongoing from April 16) - Change Unit 3 reactor injection pump to upland pump (May 27) - In service with the launch of accumulated water treatment	
			Countermeasure [12,14,45] Establishment of circulating injection cooling	Continue to Step 2	

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation status	Reference (Photos and Figures)
I. Cooling	(2) Spent Fuel Pool	Unit 1	Countermeasure [22] Continuation of water injection by "Giraffe", etc	- Standby as backup after restoration to normal water injection line - Reliability improvement: enhanced durability of hoses - Measures to reduce radiation dose: switch to remote-controlled operation (arm, water injection operation)
			Countermeasure [24] Restoration of normal cooling system	- Radiation measurement by γcamera and robot (from April 30 to May 6) - Radiation reduction by flushing and shielding facility (from May 11 to May 15) - Water injection through normal cooling system (May 29)
			Countermeasure [25,27] Install heat exchanger	- Manufacturing heat exchanger - Circulating water cooling operation (End of June)

Image of remote control operation of concrete pumping vehicle

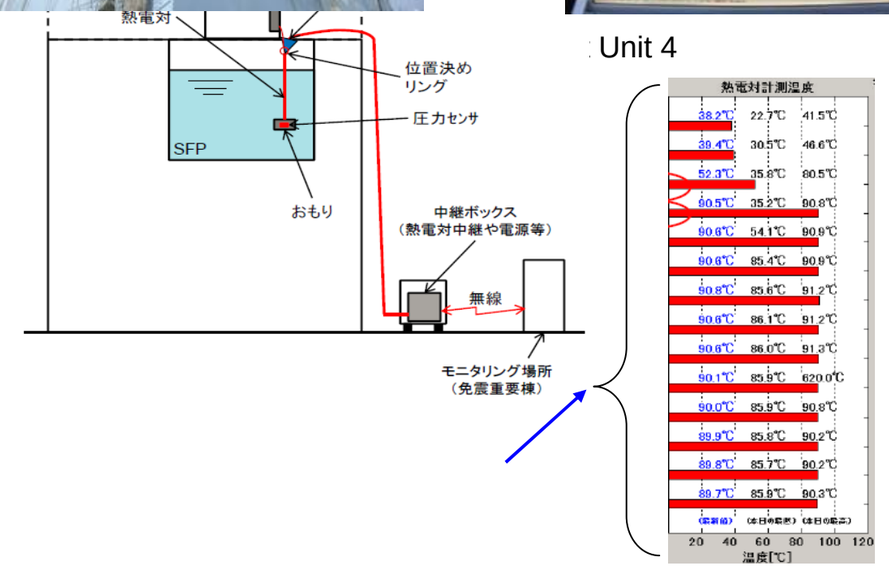
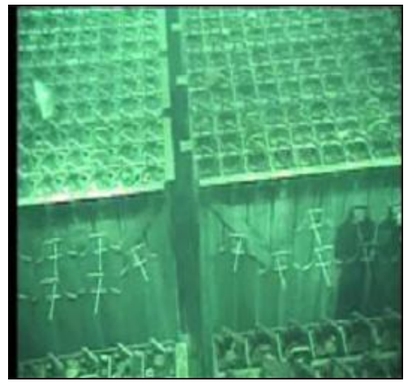




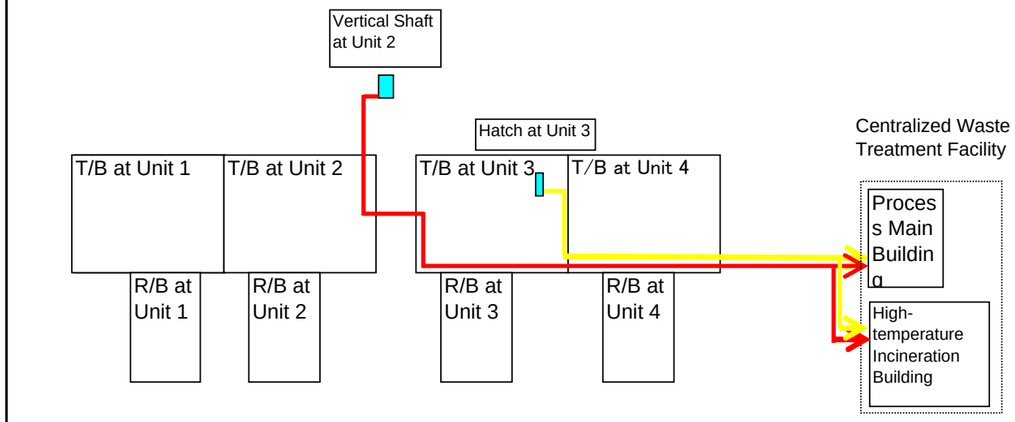
Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures		Implementation status	Reference (Photos and Figures)
I. Cooling	(2) Spent Fuel Pool	Unit 2	Countermeasure [23] Restoration of water injection through normal cooling system	- continuing	 Unit 2 Heat Exchanger Unit
			Countermeasure [23,27] Install heat exchanger	- Installed heat exchanger and operating circulating cooling system (from May 31) - Temperature of spent fuel pool: approximately 31 ℃ (as of June 6)	
		Unit 3	Countermeasure [22] Continuation of water injection by "Giraffe" etc	- Standby as backup after restoration to normal water injection line - Reliability improvement: enhanced durability of hoses - Measures to reduce radiation dose: switch to remote-controlled operation (arm, water injection operation)	Unit 3 Spent Fuel Pool 
			Countermeasure [24] restoration of normal cooling system	- Confirmation of system integrity through water level measurement by "Giraffe," etc. (from May 8 to May 15) - Water injection through normal cooling system (ongoing from May 16)	
			Countermeasure [25,27] Install heat exchanger	- Manufacturing heat exchanger. Installation work will start after transferred to the site. (from June 10) - Circulating water cooling operation (End of June)	

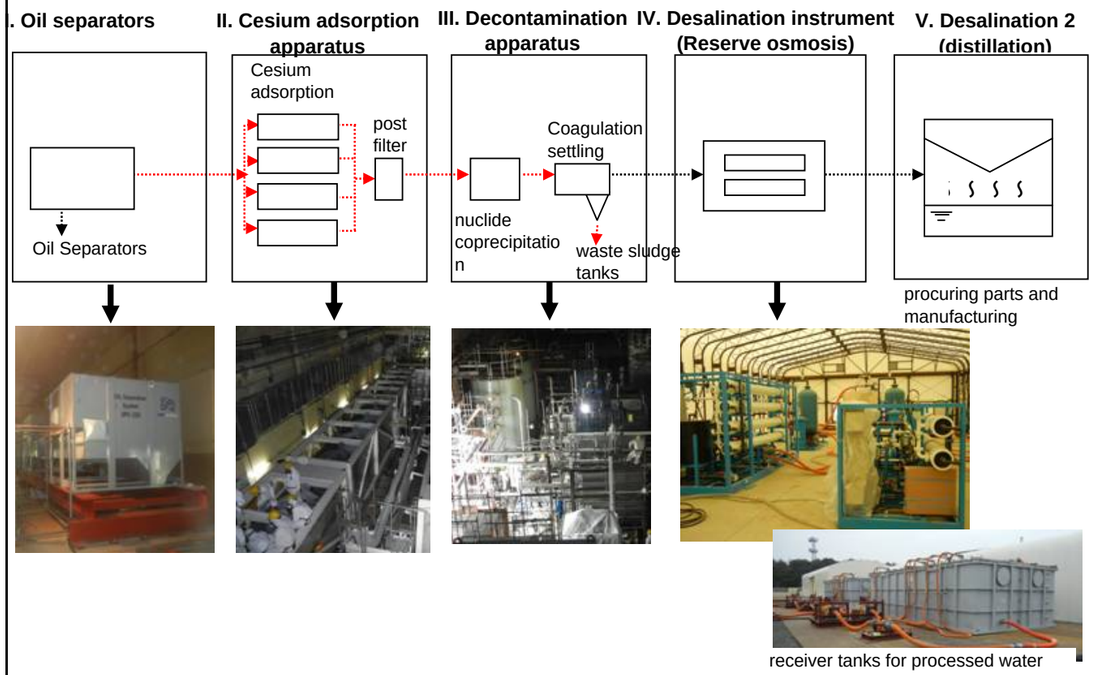
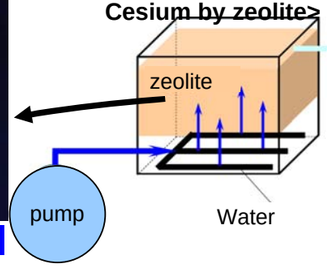
Progress Status Classified by Issues (Photos and Figures)

Issues			Countermeasures	Implementation status	Reference (Photos and Figures)
I. Cooling	(2) Spent Fuel Pool	Unit 4	Countermeasure [22] Continuation of water injection by "Giraffe" etc	- Reliability improvement: enhanced durability of hoses - Measures to reduce radiation dose: switch to remote-controlled operation - Installation of water level gauge (April 22)	   Monitoring water level of SFP at Unit 4 by water level gauge (thermocouple)
			Countermeasure [24] restoration of normal cooling system	- Implementing site survey - Removing debris. Restoration work will be started after the removal.	
			Countermeasure [25,27] Install heat exchanger	- Implementing site survey (from April 19 to end of May) - Removing debris. Restoration work will be started after the removal. - Circulating water cooling operation (Begining of July)	  Status of stairs connecting 2nd and 3rd floor in Unit 4  Status of SFP inside

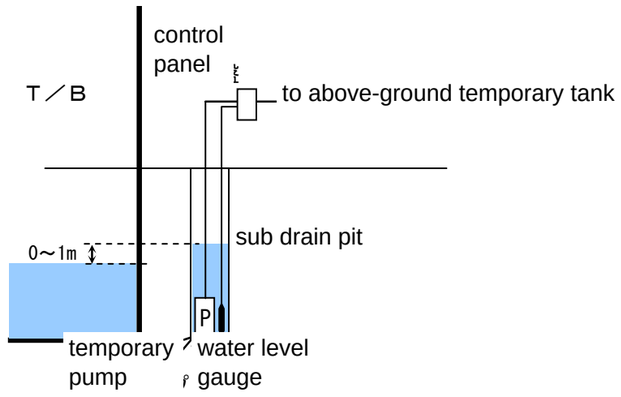
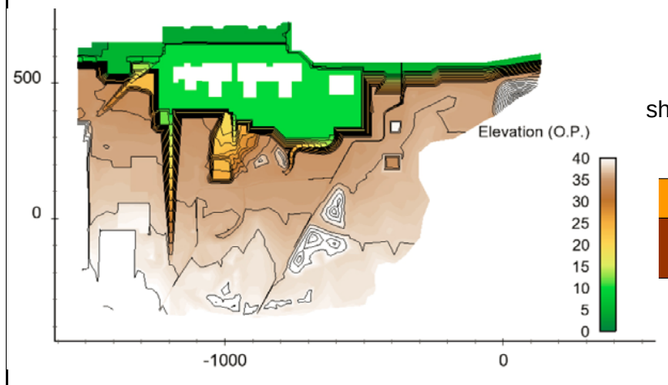
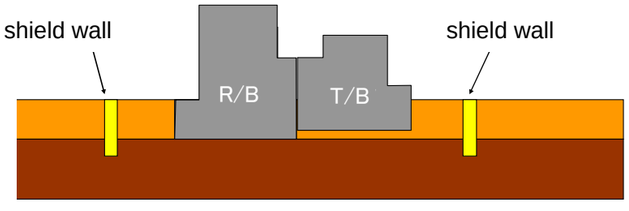
Progress Status Classified by Issues (Photos and Figures)

Issues			Countermeasures	Implementation status	Reference (Photos and Figures)
II. Mitigation	(3) Accumulated Water	High level	Countermeasure [37, 39, 42] Securing sufficient places to store contaminated water	- Transferring to Centralized Waste Treatment Facility (Process Main Building and High-temperature Incineration Building) after checking water leaking stopped o Process Main Building: After checking water leaking stopped etc., transferred accumulated water from Unit 2 Turbine Building. (April 19) o High-temperature Incineration Building: After checking water leaking stopped etc., transferred accumulated water from Unit 3 Turbine Building. (May 17) - Installation of tanks o For receiving treated water approx. 11,000t (May 10) approx. 2,000t (May 20) <Implementation hereafter> o For receiving treated water brought in and installed underground tanks approx. 20,000t (from June 4) o For receiving treated water will bring in and install underground tanks approx. 10,000t (after mid June)	**<Transferring into Centralized Waste Treatment Facility>**   Tanks to receive treated water  Underground tanks for treated water (image)
			Countermeasure [64] Mitigation of contamination in the ocean	- Setting up silt fence - Preparation work for setting up steel pipe sheet pile [removal of curtain wall] (from June 2) - Purification of sea water by circulating purification system (from June 13) - Installation of sliding concrete plate (from June 12) <Implementation hereafter> - Planning for setting up steel pipe sheet pile	 Setting up silt fence
			Countermeasure [65] Containment of high-level radioactive water	- closure of sea water pipe vertical shaft Unit 2: completed on June 2, Unit 3: completed on May 26, Unit 4: completed on April 6 - closure of pits and others Unit 1: completed on May 17 (planned) Unit 2: completed on June 9 Unit 3: completed on June 10 Unit 4: completed on June 10	 Closure of sew water pipe vertical shaft (left: before closure, right: after closure)  Closure of pit (left: before closure, right: after closure)

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures		Implementation status	Reference (Photos and Figures)
II. Mitigation	(3) Accumulated Water	High level	**Countermeasure [38, 43, 45] Installation of water processing facilities / Continuing water processing of contaminated water in the Buildings**	[Decontamination of high radiation-level contaminated water] - Cesium adsorption instruments (Kurion): installation work in progress (as of June 6) - Radioactive material treatment instruments (AREVA): installation work in progress (as of June 6) [Desalt of high radiation-level contaminated water] - Water desalinations (reverse osmosis membrane): installation work in progress (as of June 6) - Water desalinations (distillation): procuring of parts and manufacturing (as of June 6) [Storage of waste sludge] - Transportation and installation of reserve tanks for high radiation-level waste sludge Reviewing according to the progress up to June 17	<Decontamination flow of contaminated water> 
		Low level	**Countermeasure [40, 41] Increase storage capacity / decontamination**	Increase of storage capacity and continuation of decontamination of contaminated water - Installation of Tanks: F Area 2,200t (May 8) B Area 6,200t (late May) F Area 10,000t (late May) - Megafloat 10,000t (May 21) <Implementation hereafter>	<Megafloat>  <F Area Tanks> <Square shape tanks>  <Round shape tanks> 
				Utilization of decontaminant (zeolite) setting in water, self-circulation and adsorption of Cesium by zeolite decontamination of accumulated water of Unit 6 T/B after transferring to receiver tanks for low level water Run from May 1 purification of sea water by circulating purification facilities (from early June)	 Decontaminant (zeolite) <Adsorption of Cesium by zeolite>  <Outside view of the system> 

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation Status	Reference (Photos and Figures)
II. Mitigation	(4) Groundwater	Countermeasure [66] Consideration of mitigation measures of groundwater contamination	- Closing of vertical shaft of sea water pipe Unit 2: Completed on June 2 Unit 3: Completed on May 26 Unit 4: Completed on April 6 - Closing of pits, etc. Unit 1: To be completed on May 17 Unit 2: Completed on June 9 Unit 3: Completed on June 10 Unit 4: Completed on June 10	 Putting in crushed stone  Concrete placement  Mortar placement
		Countermeasure [67] Implementation of mitigation measures of groundwater contamination	- Restoration of sub drain pump Completed site survey for the prediction of restoration of the pump until the end of May. Implementing the installation of the temporary pump in the sub drain pit of turbine building. Operation will be checked until the end of June. - Sub drain management along with expansion plan of storage/processing facility.	 Image of sub drain pump management
		Countermeasure [68] Examination of shielding wall of groundwater	- Considering underground water flow based on seepage analysis <next step> -Implement most appropriate method to shield underground water by evaluating water shield effect, earthquake resistance, durability, etc. -Implement study for optimization of shielding section, installation plan and construction schedule.	 Seepage analysis model  Image of measure to shield groundwater

Progress Status Classified by Issues (Photos and Figures)

Issues	Countermeasures	Implementation Status	Reference (Photos and Figures)
II. Mitigation (5) Atmosphere / Soil	Countermeasure [52] Dispersion of inhibitors	Continue dispersion of inhibitor - Test dispersion of inhibitors in the Power Station (from April 1to April 25) - Full-fledged dispersion of inhibitors in the Power Station (from April 26) (Record of dispersion of inhibitors up to June 14) - In the Power Station (flat land and slope): Dispersion in approx. 336,000 m^2 - Around Units 1 to 4: Dispersion in approx. 121,000 m^2 - Dispersion by bending spray tower vehicles as below (from May 27) 5/27・6/1 : External wall of Turbine Building's roof at Unit 1 6/ 1・10 : External wall of Reactor Building's roof at Unit 2 6/ 2・10 : External wall of Turbine Building's roof at Unit 2 6/ 3 : External wall of Turbine Building's roof at Unit 3 6/ 4 : External wall of Turbine Building's roof at Unit 4 - Dispersion by concrete pumping vehicles (Zebras) as below (from June 6) 6/ 8・9 : External wall of Reactor Building's roof at Unit 1 6/ 9 : External wall of Reactor Building's roof at Unit 3 <Plan for further implementation> Planing to finish dispersion as below by the end of June - In the Power Station (flat land and slope): Dispersion in approx.420,000m2 by the end of June - Around Units 1 to 4: Dispersion to Reactor Building at Unit 4 after arranging area and equipments (around June 18)	 Dispersion of inhibitors in the Power Station (slope)  Dispersion of inhibitors around turbine buildings of Units 1 to 4  Dispersion of inhibitors around turbine buildings of Units 1 to 4 （Dispersion by bending spray tower vehicles to Turbine Building at Unit 1）  Dispersion of inhibitors around turbine buildings of Units 1 to 4 （Dispersion by bending spray tower vehicles to Reactor Building at Unit 1）

Progress Status Classified by Issues (Photos and Figures)

Issues	Countermeasures	Implementation Status	Reference (Photos and Figures)
II. Mitigation (5) Atmosphere / Soil	Countermeasure [53] Removal of debris	- In order to mitigate exposure dose of the workers and improve work efficiency at the site, we have started removing the debris after storing them in the containers using remote-controlled heavy machinery (hydraulic shovel, crawler dump, bulldozer). (from April 6) - Debris in highly-radioactive area (around the turbine buildings of Units 1 to 4) are removed with priority. <Record of removing debris as of June 14> - 309 containers* of debris are removed. * breakdown: 279 containers (Approx. 4m^3) 30 containers (Approx. 8m^3) <Plan for further implementation> - We will continue removing the debris which hinder outside work.	 Removing debris with remote-controlled heavy machinery  (Container: 3.2*1.6*1.1m, Approx. 4m^3)
			 Around reactor building of Unit 1 (June 9)
			 （Before removal）  （After removal） The space of Reactor Buildings between Unit 2 and Unit 3

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation Status	Reference (Photos and Figures)
II. Mitigation	(5) Atmosphere / Soil	Countermeasure [54] Installation of reactor building cover	《Unit 1》 - Start of preparation construction work ※(from May 13) ※ - Maintenance of road for crane ※ - Creation of slope for moving of crane ※ - Maintenance of Shallow Draft Quay - Start of main structure construction work（planed from June 27）	《Unit 1 progress status》

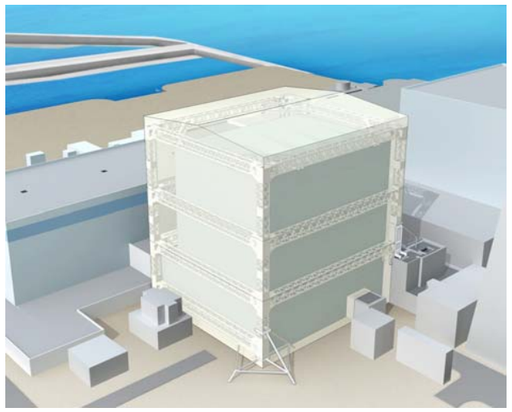


Image after installation of reactor building cover for Unit 1

Image of construction of Covering R/B

《Unit 3 and 4》
- Start of preparation construction work（planned from the end of June）

Before

laying steel plates

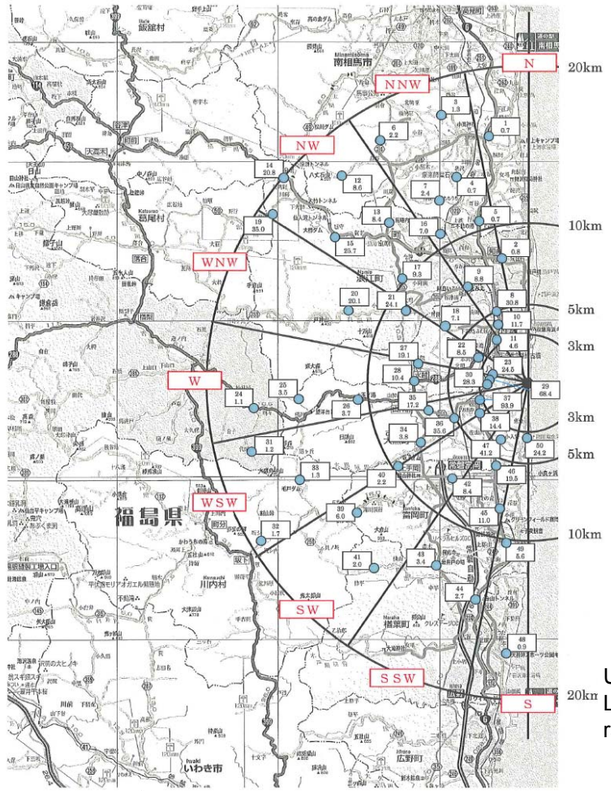
completion of laying steel plates (finished at June 11)

Preparation work (Shallow Draft Quay）

Preparation work (road for crawler crane）

Progress Status Classified by Issues (Photos and Figures)

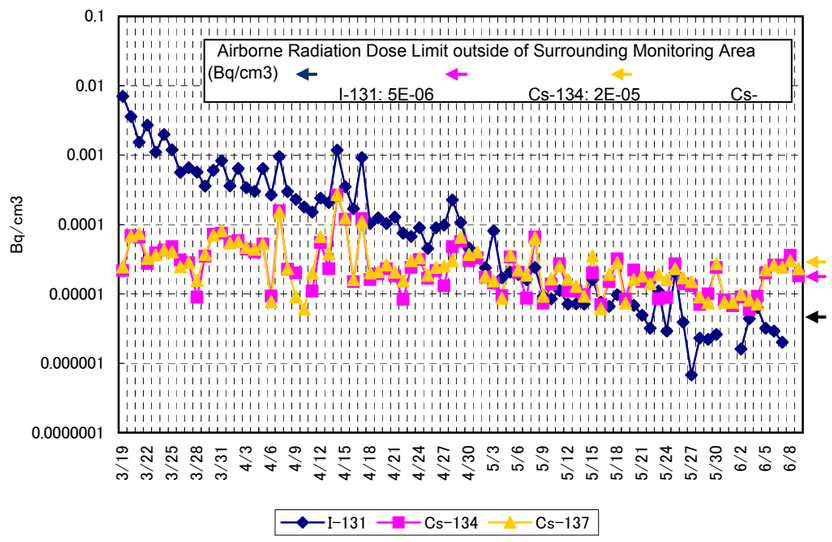
Issues		Countermeasures	Implementation status	Reference (Photos and Figures)
III. Decontamination/ Monitoring	(6) Measurement, Reduction and Announcement	Countermeasure [60,61] Expansion, enhancement and announcment of monitoring	Continue monitoring in and out of the power station [Land Area] ＜Monitoring within 20 km radius of the periphery＞ - Monitoring of airborne radiation dose rate at 50 points by Utility Support Team (once/week) - Land sampling at 50 points and additional points (approx. 50 points) by Utility Support Team (June 10 and 13, once/two months) - Monitoring at 5 points between 3km to 5 km radius of the periphery at the timing of opening air-lock doors of Unit 2 Reactor Building (June 19 and 20) ＜Monitoring within the Site＞ - Monitoring of airborne radiation dose rate around West Gate ot the SIte (everyday) - Monitoring of radiation dose rate at the uppper part of Reactor Building with water pumper trucks etc. (once/month) Unit 1 (May 22), Unit 4 (May 23), Unit 2（after June 24）, Unit 3 (June 13) - Monitoring of radiation dose rate around switching stations on the west side of Reactor Building (everyday) Unit 1 and 2 (since July), Unit 3 and 4 (since July) - Metigation measures on backgrouds of monitoring posts (mitigation from the impcat of land) MP8（May 20）, MP3（May 23）, MP2（since July）



Upper: Point No.
Lower: Airborne radiation dose（μSv/h）

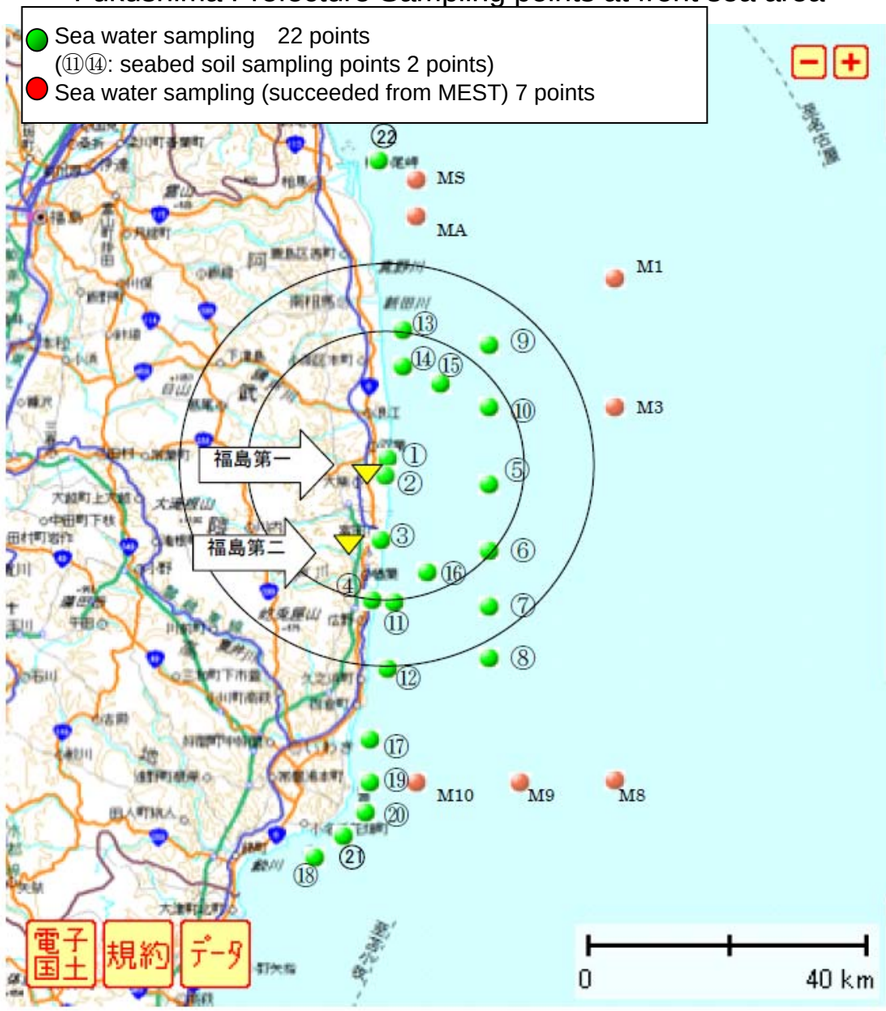
Measurement Result of Airborne Radiation Dose Rate of 20 km Radius of the Periphery (date: June 3, 2011)

Trend of Airborne Radiation Dose Rate at Fukushima Daiichi



Land Sampling by Utility Support Team (20 km radius of the periphery)

Progress Status Classified by Issues (Photos and Figures)

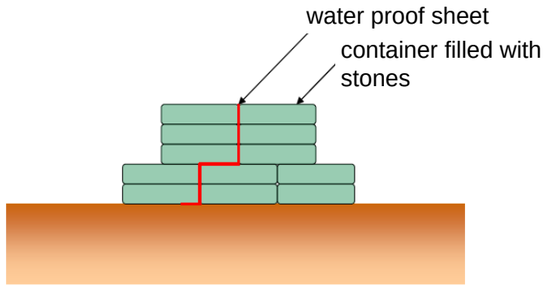
Issues		Countermeasures	Implementation status	Reference (Photos and Figures)
III. Decontamination/Monitoring	(6) Measurement, Reduction and Announcement	Countermeasure [60,61] Expansion, enhancement and announcement of monitoring	[Ocean Area] <Fukushima Prefecture> - Monitoring sea water at 16 points (from 4/17) ↓ - Monitoring sea water at 22 points (from May 5), and 2 points for marine soil (from April 29) ↓ - Succeeded 7 points from MEXT* within 30 km radius, additional sampling at 11 points at lower layer of 30 km radius of the periphery, revision of the frequency of monitoring (from June 4) <Ibaraki Prefecture> - Seawater at 5 points (from April 29, once/week) ↓ from June 7, twice/week <Miyagi Prefecture> - Seawater at 6 points (from 6/21, twice/month)	―Fukushima Prefecture Sampling points at front sea area― Sea water sampling 22 points (⑪⑭: seabed soil sampling points 2 points) Sea water sampling (succeeded from MEST) 7 points  - Ibaraki Prefecture Sampling points at front sea area - Seawater sampling 5 points 

*: MEXT: Ministry of Education, Culture, Sports, Science and Technology, Japan

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation status	Reference (Photos and Figures)
IV. Countermeasures against aftershocks, etc.	(7) Tsunami, reinforcement, etc.	Countermeasure [69] Countermeasures against Tsunami	- Temporary DG was moved to the upland (April 15) - Securing redundancy of water injection line (by April 15) - Setting fire engines in the upland (by April 18)	
		Countermeasure [70] Enhancement of countermeasures against tsunami	- Starting installation of temporary tide barrier from May 18 Completeion Target : end of June	

Planned Temporary Tide Barrier (white dotted line)

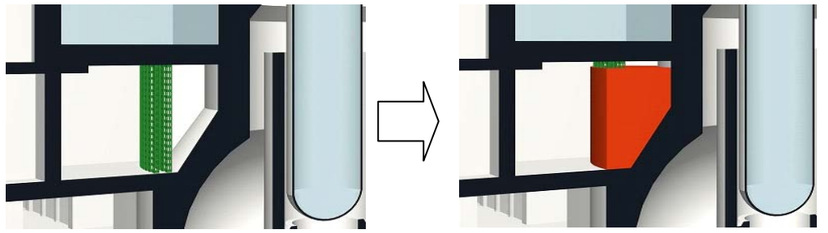
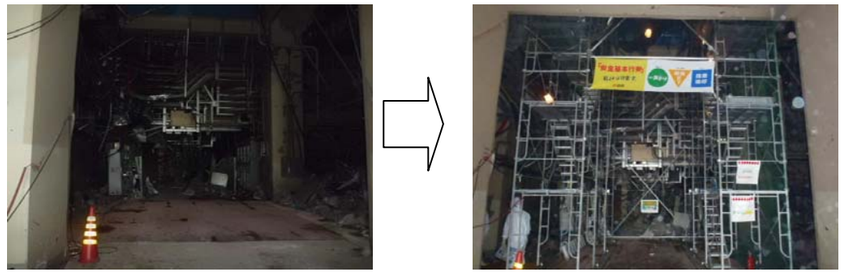


Corss-Section of Temporary Tide Barrier (image)

Temporary Tide Barrier (1)

Temporary Tide Barrier (2)

Progress Status Classified by Issues (Photos and Figures)

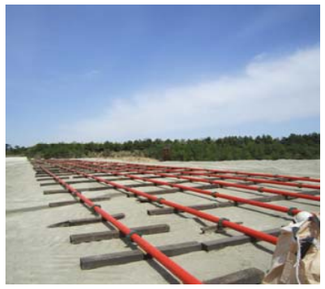
Issues	Countermeasures	Implementation Status	Reference (Photos and Figures)
IV. Countermeasures against aftershocks, etc (7) Tsunami, Reinforcement, etc. Unit4	Countermeasure [26] Installation of supporting structure under the bottom of spent fuel pool	- Soundness of structure was analyzed and evaluated - Secure the route to the area to install supporting structure （removing debris・establish a foothold at hatch・removing shield block） ・Removing obstacle at the area・install shielding ・Steel pillar installation is progressing（as of June 15） ＜Next Step＞ ・Steel pillar installation ・Pour concrete and grout（～until the end of July）	Outline of supporting structure installation  Steel pillar installation　Concrete wall Removing debris  Removing debris at truck-bay door Securing route  Establish a foothold at hatch Installation of supporting structure under the bottom of spent fuel pool  Before the work　Removing obstacle・install shielding　Steel pillar installation（as of June 15）

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation Status	Reference (Photos and Figures)
IV. Countermeasures against aftershocks, etc	(7) Tsunami, Reinforcement, etc.	Countermeasure [72] Preparation for various countermeasures for radiation shielding	＜Utilization of slurry＞ ・Slurry production facility・transfer pipe、concrete pumping vehicle has been installed (as of May 17)	**Installation of equipment at Fukushima Daiichi Nuclear Power Station**
			・maintenance of equipment ・carry out water injection training by connecting slurry production facility and concrete pumping vehicle"zou-san 3"（June 16，17）	**Placement of device at Fukushima Daiichi Nuclear Power Station**

Overview of the facility

Slurry production facility

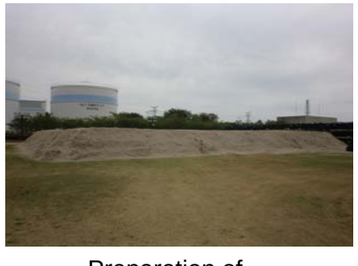


Installation of slurry plant

Concrete pumping vehicle"zou-san 3"

High pressure concrete pumping vehicle

Transfer pipe



Preparation of

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation status	Reference (Photos and Figures)
V. Environment Improvement	(8) Life/work environment	[Countermeasure 74] Improvement of workers' like/work environment	- Improvement of meals, upgrade of lodging facility - Securing daily life water	 Bunk bed（whole）  Shower room
		[Countermeasure 75] Continuing and enhancement of improvement o workers' life/work environment	- Expansion of temporary dormitory - Increasing available amount of daily life water	 Bunk bed  Drinking water

Fukushima Daini Gym

Progress Status Classified by Issues (Photos and Figures)

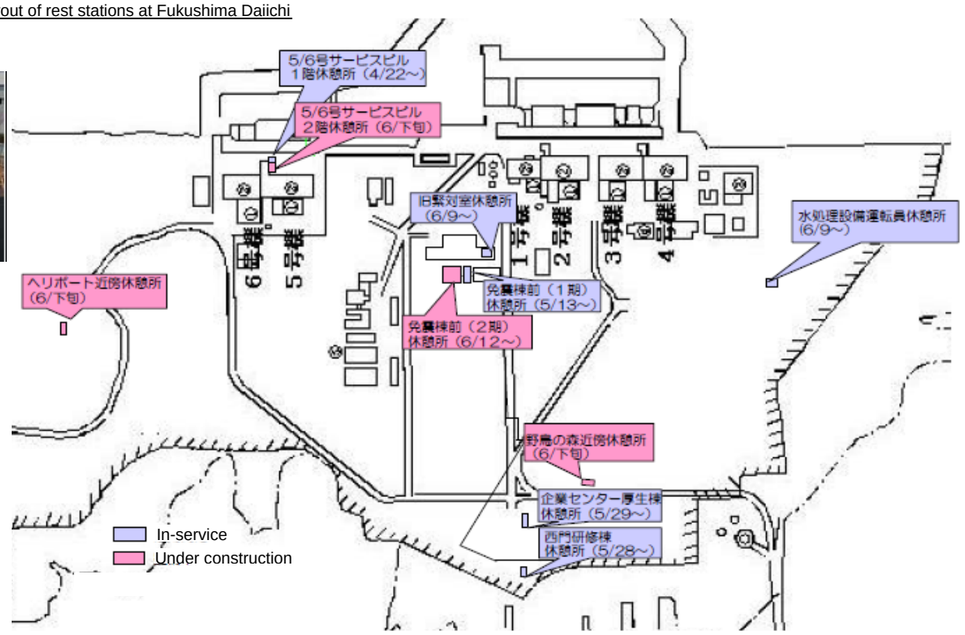
Issues	Countermeasure	Implementation Status	Reference (Photos and Figures)
V. Environment Improvement / (8) Life/work environment	[Countermeasure 74] Improvement workers' life/work environment [Countermeasure 75] Continuing and enhancement of improvement of workers' life/work environment	- Installation of rest stations at the site - Expansion of rest stations at the site and restoration of original rest stations	Rest stations installation status

Rest stations installation status at Fukushima Daiichi

date	Place	Width	Capacity	Spec	Remark
4/22	5/6号ｻｰﾋﾞｽﾋﾞﾙ1F	120m2	40人	既設	
5/13	免震棟前（第1期）	90m2	30人	プレハブ	
5/28	企業ｾﾝﾀｰ研修棟	190m2	60人	既設	
5/29	企業ｾﾝﾀｰ厚生棟	180m2	60人	既設	
6/ 9	旧緊対室	560m2	180人	既設	
6/ 9	水処理設備制御室	180m2	12人	プレハブ	
6/12	免震棟前（第2期）	360m2	120人	プレハブ	
6/下旬	ﾍﾘﾎﾟｰﾄ近傍	90m2	20人	コンテナ	
6/下旬	野鳥の森近傍	90m2	20人	コンテナ	
6/下旬	5/6号ｻｰﾋﾞｽﾋﾞﾙ2F	280m2	90人	既設	
累計			632人		

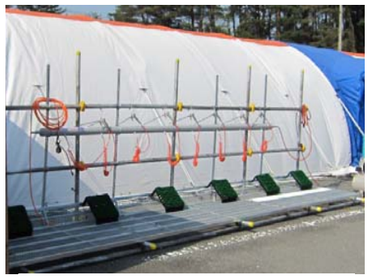
Rest stations in front of Main Anti-Earthquake Building

Layout of rest stations at Fukushima Daiichi



Inside the rest station (1)

Drinking water



Foot-wash station

Drinking water

Inside the rest station

Inside the rest station (2)

Rest station in front of Main Anti-Earthquake Building

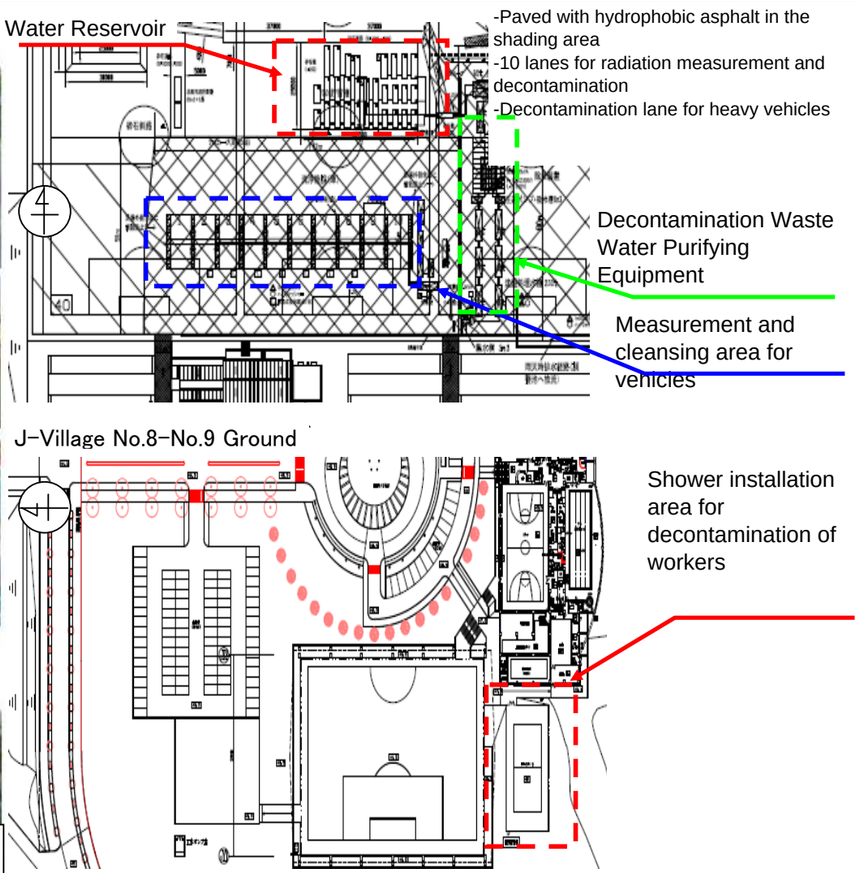
Appearance of the rest station

Rest station for a cooperative firm (Toshiba)

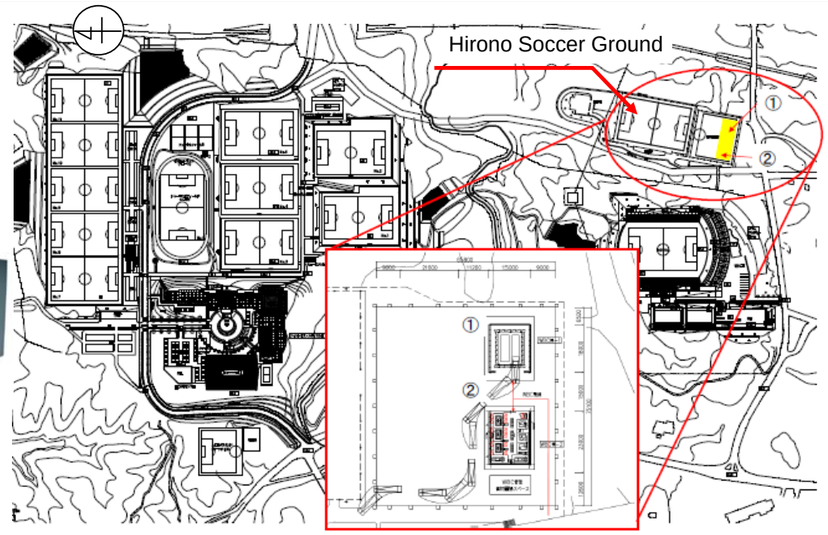
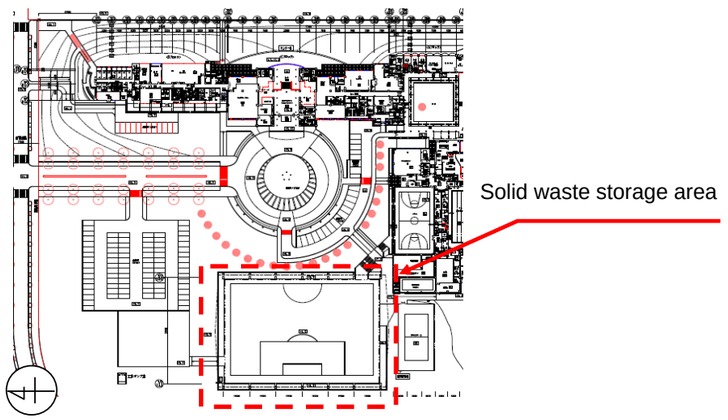
Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasure	Implementation Status	Reference (Photos and Figures)
V. Environment Improvement	(9) Radiation control / Medical care	[Countermeasure 77] Improvement of radiation control [Countermeasure 78] Continuing improvement of radiation control	- Improvement of protective equipment Protective equipment according to work environment is provided in order to secure safety during radiation work.	 **Special protective gear:** **Protective suit which can be expected to shield beta ray and low-energy gamma ray**  **Closed-circuit oxygen breathing apparatus:** **It can realize a long 120-minute usage, circulating aspirated air with oxygen inside the cylinder.** **It's suitable for usage in oxygen-less hazardous area.**    **Under consideration for introduction** **Half-faced mask:** **In case that radioactivity density is low and stable, workers put half-face masks, not full-face, on (with goggles), which enables to lighten the workload of workers.**   **Respiratory protective device with electric fan:** **The mask can blow in cleaned air which is filtered using electric fan. Internal pressure is kept higher than environmental pressure in order to reduce the risk of inhaling particulate. Also, it realizes to breathe freely and lighten loss of bodily strength.**

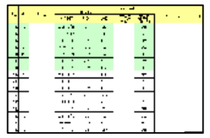
Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation status	Reference (Photos and Figures)
V. Environment Improvement	(9)Radiation control/medical care	[Countermeasure 77] Improvement of radiation control [Countermeasure 78] Continuing improvement of radiation control	**Installation of decontamination facility in J-Village** [Screening control] -Setting the screening figure and implementing decontamination when necessary in order to prevent contamination expansion. -Changed the screening figure that is arranged with relevent ministries and local municipalities (6,000cpm⇒ 100,000cpm) *Setting 13,000cpm as a voluntary standard separately [Decontamination facility] Intalled decontamination facility for people and vehicles that exceed the screening figure as the result of radiation measurement at J-village -Decontamination Shower for people: 3 units in opperation (1unit borrowed from Fire Defense Agency, 2 units borrowed from Japanese Red Cross Society) -Decontamination place for heavy vehicles : operated from April 4th *By April 3rd, installated of temporary contamination place *Decontamination waste water is filtered through purifier and stored in the reservoir. -Installation of decontamination place on the rainy day: operated from June 27th -Installation of oil washing and detergent decontamination place : by the beginning of July [Individual examination certificate] -Inssuing individual examination certificate at J-Village, Fukushima Daini Nuclear Power Station and Shinfukushima Substation after setting the controlled area（from May 7th）	 Decontamination place for heavy vehicles    Shower units for decontamination of workers  Decontamination Waste Water Reservoir -Paved with hydrophobic asphalt in the shading area -10 lanes for radiation measurement and decontamination -Decontamination lane for heavy vehicles Decontamination Waste Water Purifying Equipment Measurement and cleansing area for vehicles J-Village No.8−No.9 Ground Shower installation area for decontamination of workers J-Village West-side of Center house

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation Status	References (Photos and Figures)
V. Environment Improvement	(9) Radiation control/Medical care	Countermeasure [77] Enhancement of radiation control Countermeasure [78] Continuing enhancement of radiation control	○Increasing the number of whole-body counters as internal exposure measuring instrument In order to evaluate internal exposure of workers engaged in emergency operation, installation of survey place at J-village etc. and installation of 13 whole-body counters will be implemented. [Site] 1. HIRONO football court（indoor training center） 2. Metropolitan area ［Number of equipment］ 1. 13：onboard type（lent by JAEA) 2, stationary type 11※ 2. 1：onboard type（lent by JAEA)1 ※Relocation from Fukushima Daiichi and Daini:4, newly purchased 6, lent by other company :1 ［Schedule］ ・From the beginning of July Relocate four stationary type equipment from Fukushima Daiichi and Daini, and operate them at the end of July Transport and operate two onboard type equipment (lent by JAEA) from Onahama CC ・From the beginning of October Install and operate six newly purchased and one lent by JAEA stationary type equipment Install and operate one onboard type equipment (lent by JAEA) at metropolitan area ※Two onboard type equipment (lent by JAEA) at Onahama	  ①Onboard WBC ②Stationary WBC 
			○Appropriate management of radioactive waste ［Liquid waste (Decontamination fluid)］ Recover decontamination fluid and purify by purification facility at JV Planning reuse of purified fluid after the test of pollution level ※Installation and operation of purification facility ：from April 4, Reuse of fluid：planned from July ［Solid waste］ Keep solid waste like used protection wear from JV and screening site in Fukushima pref. at JV Separate and keep waste in the exclusive metal container for each burnable, resistance to flame and noninflammable waste	  

Progress Status Classified by Issues (Photos and Figures)

Issues		Countermeasures	Implementation status	Reference (Photos and Figures)
V. Environment improvement	(9) Radiation control and medical care	Countermeasure [77] Enhancement of radiation control Countermeasure [78] Continuing enhancement of radiation control	-Reinforced Radiation Controlling Pocket dosimeter had been lent through signing in the book or entering the data manually into database, but workers identification cards with barcodes were provided since June 8 so that it became possible to enter the data directly into the database with barcode readers. We are planning to introduce a system which can automatically acquire the radiation exposure data of workers hereafter. (Workers identification cards system are in operation and personal radiation exposure data have been automatically acquired at Main Anti-Earthquake Building of Fukushima Daiichi, but not yet at J-Village due to lack of equipment.	[Aftermath of the Earthquake (Before)] ① Lending Alarm Pocket Dosimeter and signing in the book  - lending pocket dosimeter and signing the names, time, etc. in the book to manage personal ② Working, carrying pocket dosimeter and measuring  - Measurement with pocket dosimeter for every work ③Entering measurement results in the book and PC  - Entering data of time, radiation exposure, etc. in the book or PC when leaving the area [After improvement (from June)] Main Anti-Earthquake Building Manage personal in-and-out of the Site Measure personal radiation exposure - Lending pocket dosimeter - Record manual data entry (until April 13) →Barcodes (from April 14)  Working Area  J-Village Manage personal in-and-out of the Site Measure personal radiation exposure - Lending pocket dosimeter - Record：manual data entry in the book since May 8
		Countermeasure [79] Enhancement of medical system Countermeasure [80] Continuing enhancement of medical system	- Regarding medical care at Fukushima Daiichi, one of the supporting doctors, who have been mainly dispatched from University of Occupational and Environmental Health, Japan, has been working at a cycle of two or three days during the daytime (10 am to 4 pm). During night and early morning, the doctors of daytime might have stayed, but there were cases when no doctors attended due to the change-over, etc. - Since May 29, other supporting doctors of Japan Labor Health and Welfare Organization, who have been mainly dispatched from Rosai Hospitals, have complemented the vacancy. Thus, 24 hours caring system has been established.	  Consultation Room at Fukushima Daiichi Power Station  Cooling vest   Mask with blower  Cooling scarf