November 16, 2011 Tokyo Electric Power Company
<Draining Water on Underground Floor of Turbine Building $(T / B)>$
$\diamond$ Status of highly concentrated accumulated radioactive water treatment facility and storage tank facility [Treatment Facility]
6/17 20:00 Full operation of radioactive material removal instruments started.
6/24 12:00 Start of desalination facilities operation
6/27 16:20 Circulating injection cooling started.
8/7 16:11 Evaporative Concentration Facility has started full operation.
[8/19 19:33 We activated second cesium adsorption facility (System B) and started the treatment of accumulated water by the parallel operation of cesium adsorption instrument and decontamination instrument. At 19:41, the flow rate achieved steady state.
[Storage Facility]
6/8~ Big tanks to store and keep treated or contaminated water have been transferred and installed sequentially.
$\diamond$ Accumulated water in vertical shafts of trenches and at basement level of building

| Unit | Draining water source $\rightarrow$ Place transferred | Status |
| :---: | :---: | :---: |
| Unit 1 | Unit 1T/B $\rightarrow$ Unit 2T/B | -15:42 on November 11 -11/13 10:45 Transferring |
| Unit 2 | Unit 2T/B $\rightarrow$ Central Radioactive Waste Treatment Facility <br> Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)] | 9:10 on November 10- Transferring |
| Unit 3 | $\cdot$ Unit 3T/B $\rightarrow$ Central Radioactive Waste Treatment Facility [Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)] | -10:11 on November 2 -11/8 15:05 Transferring |
|  | $\cdot$ Unit 3T/B $\rightarrow$ Central Radioactive Waste Treatment Facility Process Main Building] | 9:25 on November 15- Transferring |
| Unit 6 | Unit 6T/B $\rightarrow$ Temporary tanks | -11/16 No plan of transfer |


| Place transferred | Status of Water Level (As of November 16 at 7:00) |
| :---: | :--- |
| Process Main Building | Water level: O.P.+ 1,485 mm(Accumulated total increase:2,702 mm) <br>  <br>  <br> 34mm increase since 7:00 on November 15 |
| Miscellaneous Solid Waste |  |
| Volume Reduction Treatment | Water level: O.P.+ 2,087 mm(Accumulated total increase:2,813 mm) |
| Building | 58mm decrease since 7:00 on November 15 |
| (High Temperature Incinerator |  |
| Building) |  |

$\diamond$ Water level of the vertical shaft of the trench, T/B and R/B(As of November 16 at 7:00)

|  | Vertical Shaft of Trench | T/B | R/B |
| :---: | :---: | :---: | :---: |
| Unit 1 | O.P. <+ 850 mm | O.P.+ 3,532 mm | O.P.+ 4,539 mm |
|  | (No change since 7:00 on | (46mm increase since 7:00 on | (36mm decrease since 7:00 on |
|  | November 15) | November 15) | November 15) |


| Unit 2 | O.P.+ 3,131 mm <br> （18mm decrease since 7：00 on November 15） | O．P．＋3，141 mm <br> （14mm decrease since 7：00 on November 15） | O.P.+ 3,241 mm <br> （13mm decrease since 7：00 on November 15） |
| :---: | :---: | :---: | :---: |
| Unit 3 | O．P．＋3，308 mm <br> （13mm decrease since 7：00 on November 15） | O.P.+ 3,083 mm <br> （27mm decrease since 7：00 on November 15） | O.P.+ 3,286 mm <br> （18mm decrease since 7：00 on November 15） |
| Unit 4 | － | $\text { O.P. }+3,099 \mathrm{~mm}$ <br> （1mm increase since 7：00 on November 15） | O.P.+ 3,094 mm <br> （15mm decrease since 7：00 on November 15） |

## ＜Monitoring of Radioactive Materials＞

Nuclide Analysis of Seawater（Reference）※Since Oct 24，an approach to decrease the detection limits of radioactivity density was started．

| Place of sampling | Date of <br> sampling | Time of <br> sampling | Ratio of density limit（times） |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Approx．30m North of Discharge Channel <br> of 5－6U of 1F | $11 / 15$ | $8: 45$ | ND | 0.10 | 0.07 |
| Approx 330m South of Discharge Channel <br> of 1－4u of 1F | $11 / 15$ | $8: 30$ | ND | 0.02 | 0.02 |
| 3km offshore of northern Iwaki City（upper <br> layer） | $11 / 14$ | $7: 10$ | ND | 0.02 | ND |

Others：Results of nuclide analysis（iodine－131，cesium－134 and cesium－137）of seawater sampled at 2 points at the seashore in Fukushima Prefecture on November 15 and at 10 points offshore Fukushima Prefecture on November 14 are all ND for the 3 major nuclides．
$\leq$ Cooling of Spent Fuel Pools $>$（As of November 16 at 11：00）

| Unit | Cooling type | Status of cooling | Temperature of water in <br> Pool |
| :---: | :---: | :---: | :---: |
| Unit 1 | Circulating Cooling System | Under operation（11：22 on August $10-$ ） | $19.5^{\circ} \mathrm{C}$ |
| Unit 2 | Circulating Cooling System | Under operation（17：21 on May $31-$ ） | $20.8^{\circ} \mathrm{C}$ |
| Unit 3 | Circulating Cooling System | Under operation（18：33 on June $30-$ ） | $20.3^{\circ} \mathrm{C}$ |
| Unit 4 | Circulating Cooling System | Under operation（10：08 on July 31－） | $29^{\circ} \mathrm{C}$ |

【Unit 2】 11／6～We started operation of radioactive material decontamination instrument of spent fuel pool．
Unit 6】11／15～From November 15，due to cleanup work in order to prevent performance deterioration of pump caused by inletting sand or other materials piled up at the bottom of pump room of intake channel，Residual Heat Removal System（A）was shutdown，and stopped cooling the reactor．And Seawater pump of Equipment Water Cooing System（A）was shutdown，and stopped cooling the spent fuel pool．The stop is scheduled from 7：00 am to 5：00 pm everyday， and reactor water temperature will rise by approx． $12^{\circ} \mathrm{C}$ per day，and spent fuel pool water temperature will rise by approx． $3^{\circ} \mathrm{C}$ per day．（The cleanup work is planned to be finished in a week．）
＜Water Injection to Pressure Containment Vessels＞（As of November 16 at 11：00）

| Unit | Status of injecting water | Feed－water <br> nozzle <br> Temp． | Reactor pressure <br> vessel <br> Bottom temp． | Pressure of <br> primary <br> containment <br> vessel |
| :---: | :---: | :---: | :---: | :---: |
| Unit 1 | Injecting freshwater <br> （Feed Water System：Approx． $7.7 \mathrm{~m}^{3} / \mathrm{h}$ ） | $35.5^{\circ} \mathrm{C}$ | $36.5^{\circ} \mathrm{C}$ | 123.0 kPaabs |
| Unit 2 | Injecting freshwater <br> （Feed Water System：Approx． $2.8 \mathrm{~m}^{3} / \mathrm{h}$, Core <br> Spray System：Approx． $7.3 \mathrm{~m}^{3} / \mathrm{h}$ ） | $65.8^{\circ} \mathrm{C}$ | $68.1^{\circ} \mathrm{C}$ | 109 kPaabs |


| Unit 3 | Injecting freshwater <br> （Feed Water System：Approx． $2.7 \mathrm{~m}^{3} / \mathrm{h}$, Core <br> Spray System：Approx． $8.1 \mathrm{~m}^{3} / \mathrm{h}$ ） | $57.4^{\circ} \mathrm{C}$ | $68.8^{\circ} \mathrm{C}$ | 101.5 kPaabs |
| :---: | :--- | :--- | :--- | :--- |

【nit 4】【nit 5】【nit 6】 No particular changes in parameters．
＜Others＞
$.10 / 7 \sim$ Continuously implementing water spray using water after purifying accumulated water of Unit 5 and Unit 6 to prevent spontaneous fire of trimmed trees and diffusion of dust．
－11／16 9：33－11：41 Additional flow control valves were installed to the emergency water injection line to Unit 3 reactor to improve controllability of the flow rate．The water is injected through the permanent injection line，therefore the installation work gave no impact on the water injection．

