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Support for the Mid- to Long-Term Roadmap for Decommissioning of TEPCO's Fukushima Daiichi NPP1

Progress in Recovery Efforts and Associated D&D at the Fukushima Daiichi NPP Site Session #4, Monday 25 February 2013

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Mid- to Long-Term Roadmap for Decommissioning of TEPCO's Fukushima Daiichi

- Roadmap for decommissioning Fukushima Daiichi first developed December 2011
 - Safety of local citizens and workers top priority
 - Stakeholder involvement and transparent communications
 - Incorporation of latest R&D
- Engage international science and engineering communities
- Address technological needs
- Conduct decommissioning in phases



Phases of Mid-to-Long Term Roadmap

Present (completion of step 2)	Within 2 years	Within 10 years	After 30-40 years
Step 1, 2	Phase 1	Phase 2	Phase 3
<achieved stable<br="">Conditions></achieved>	Period to the start of fuel removal from spent fuel pool (Within 2 years)	Period to the start of fuel debris removal (Within 10 years)	Period to the end of decommissioning (After30-40 years)
-Condition equivalent to cold shutdown -Significant Suppression of emissions	 -Commence the removal of fuels from the spent fuel pools (Unit 4 in 2 years) -Reduce the radiation impact due to additional emissions from the whole site and radioactive waste generated after the accident (secondary waste materials via water processing and debris etc.). Thus maintain an effective radiation dose of less than 1 mSv/yr at the site boundaries caused by the aforementioned. -Maintain stable reactor cooling and accumulated water processing and debris etc.) -Commence R&D and decontamination towards the removal of fuel debris -Commence R&D of radioactive waste processing and disposal 	 -Complete the fuel removal from the spent fuel pools at all units -Complete preparations for the removal of fuel debris such as decontaminating the insides of the buildings, restoring the PCVs and filling the PCVs with water. Then commence the removal of fuel debris (Target: within 10 years) -Continue stable reactor cooling -Complete the processing of accumulated water -Continue R&D on radioactive waste processing and disposal, and commence R&D on the reactor facilities decommission 	 -Complete the fuel debris removal (in 20-50 years) -Complete the decommissioning (in 30-40 years) -Implement radioactive waste processing and disposal
Actions towards systematic staff training and allocation, improving motivation, and securing worker safety will be continuously implemented			

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Fukushima Roadmap



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Bid Process for Comprehensive Dose Reduction Program

- Government-led R&D projects are seeking expertise from the international community, ensuring openness and transparency
- ATOX Co. issued an RFP on Integrated Dose Reduction Planning in late 2012 (funded by the ANRE)
- Six out of thirteen companies were selected as advisors
 - Areva (France)
 - Babcock International Group (UK)
 - CH2M HILL (US)
 - Onet Technologies (France)
 - Perma-Fix Environmental Services (US)
 - Plejades (Germany)



Integrated Dose Reduction Plan

- Each firm was awarded one element of the dose reduction plan for independent development and proposal of best-inclass approach
- The task break-down for specific building high dose conditions
 - Debris and cesium contamination caused by explosions (units 1 & 3)
 - Cesium contamination caused by venting
 - Variable PCV damage
- Ultimately, dose reduction plan is in support of reactor building decontamination required for fuel debris removal