



U.S. Department of Energy Office of Environmental Management Support for Fukushima Cleanup

February 26, 2013

Steve Schneider

Director, Office of Tank Waste Management

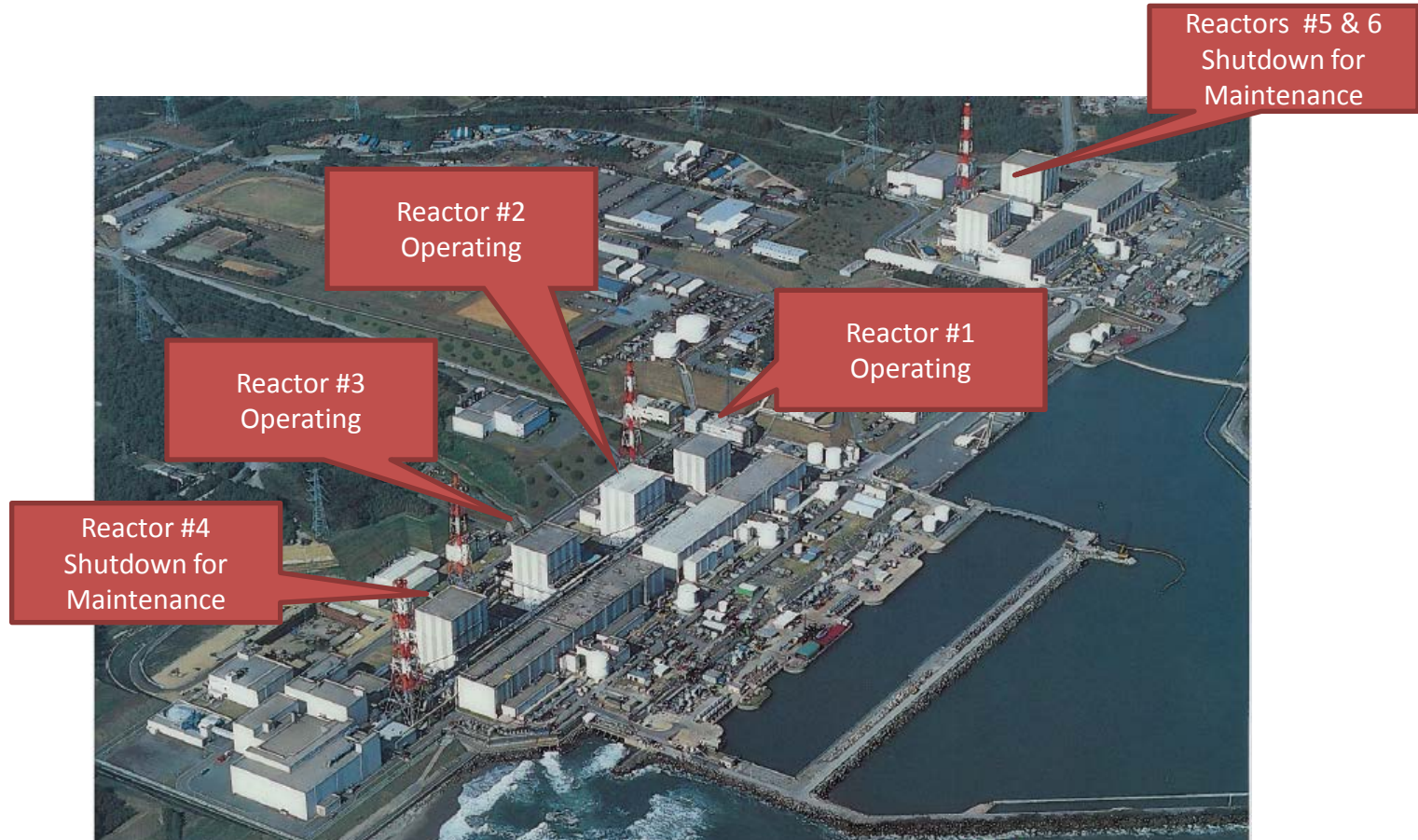


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Fukushima Daiichi Before Tsunami



Tsunami at Fukushima Daiichi



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Fukushima Daiichi Shortly After Tsunami



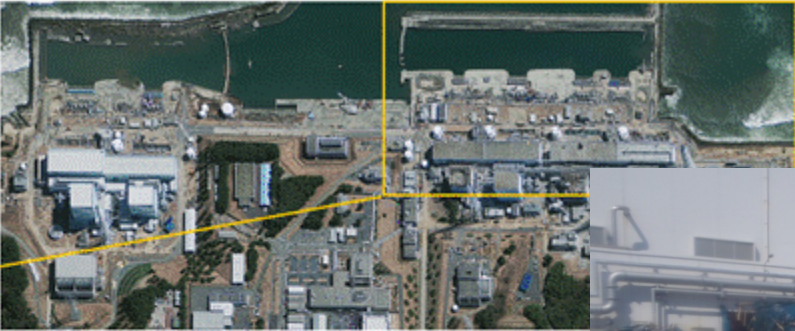
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Tsunami Damage

Heavy oil tank floated



照明灯 → 海へ流出

カーテンウォール 破損

重油タンク → 海へ流出?

コンクリートハッチ → 海へ流出?

スクリーンカバー (定検中で仮置き)

4号定検作業控室 破損

コンテナ → 海へ流出?

550tラフタークレーン

逆洗弁ピット → 漂流物あり

アーケード → 破損

PPフェンス → 海側に倒壊

循環水ポンプクーリングタワー → 海へ流出?

PPフェンス → 海側へ倒壊

PPゲート

重油タンク

船 (所在不明)

#2 R/B

#3 R/B

#4 R/B

T/B

南透 → 海

日立物流

5

DOE Immediate Response

- 33 personnel and 17,000 lbs of equipment



Aerial Monitoring

- To provide data to support evacuation, relocation, and agricultural decisions



Reactor Building Contamination

- Debris, fine particles and contaminated damaged equipment



Unit-1: Isolation Condenser Room



Unit-3: West Aisle 1st Floor



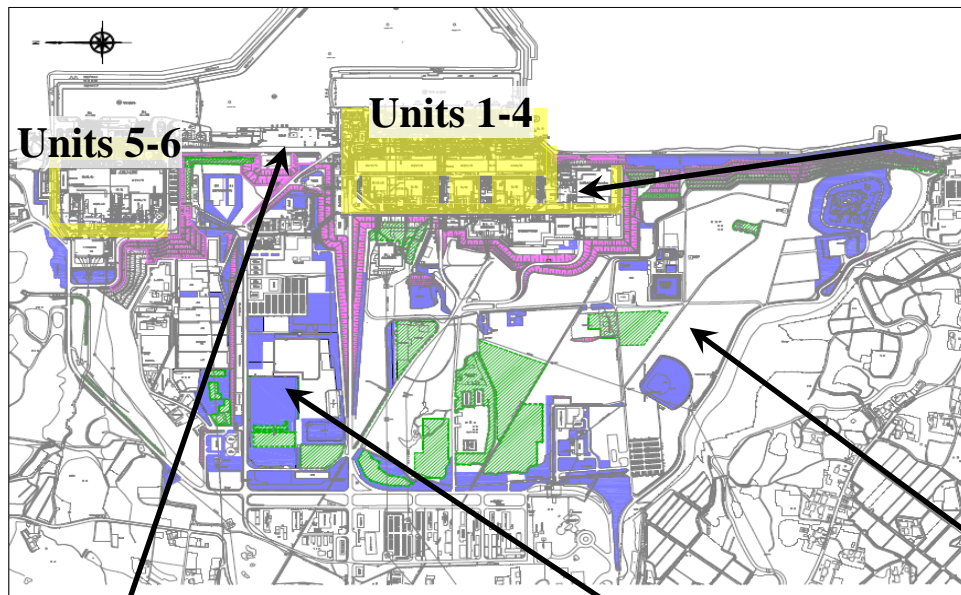
Unit-2: 5th Floor (Operating Floor)



Unit-3: Stairs to 3rd Floor



Site Contamination



Behind buildings near Units 1-4



Road and grass



Athletic field



Forest and grass



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Environmental Management (EM)

Fukushima Support

- Japan requested assistance with the cleanup of Fukushima

- Japan views EM as an important resource for this cleanup because EM has experience on issues similar to what they are challenged with now
 - Treatment and disposal of radioactive waste
 - Retrieval of damaged spent fuel from reactors
 - Deactivation and decommissioning
 - Soil and groundwater remediation
 - Technology development
 - Communication with the public
 - Planning



Environmental Management (EM)

Fukushima Support

- Provided options for contaminated water cleanup
 - o Retrieval, Storage, Treatment and Disposal options included

- Provided answers to questions on environmental cleanup
 - o Storage, Treatment and Disposal
 - o Three Mile Island experience
 - o Deactivation and Decommissioning
 - o Soil and Groundwater
 - o Cesium Treatment



Cleanup in Fukushima City



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Cleanup in Fukushima City



Power Washing Houses and Trees



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Japan's Environmental Cleanup



Cleaning up areas surrounding the Fukushima site



Waste Storage Sites Planned

- Temporary Local Sites for about 3 years
- Interim Regional Sites for about 30 years in Fukushima Prefecture
- Final Disposal Site outside Fukushima Prefecture



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Low Level Waste Storage in Fukushima



June 2012

December 2012



Environmental Management (EM)

Fukushima Support

- EM led two cleanup workshops with Japan
 - First workshop held in October 2011 in Tokyo
 - Japan Lead: Ministry of Economy, Trade, and Industry (METI)
 - Discussed cleanup of the Fukushima reactor site
 - Second workshop held in February 2012 at Hanford
 - Japan Lead: Japan Ministry of Environment (MOE)
 - Discussed offsite cleanup
 - Conducted tour of Hanford site
- Facilitated with the Department of Commerce an opportunity for U.S. companies to support cleanup
 - Over 30 U.S. companies visited Japan in June 2012
- U.S. Embassy in Japan provided vital support and coordination



U.S. - Japan Bilateral Commission on Civil Nuclear Cooperation

- In April 2012, President Obama and Prime Minister Noda agreed to create U.S. - Japan Bilateral Commission
 - Standing forum for bilateral consultation and cooperation on issues affecting the global development of civilian nuclear energy
- First Commission meeting held July 2012 in Tokyo
- Five Working Groups
 - Nuclear Security
 - Civil Nuclear Energy Research and Development
 - Emergency Management
 - Safety and Regulatory Issues
 - Decommissioning and Environmental Management



Decommissioning and Environmental Management Working Group

- Decommissioning and Environmental Management Working Group
 - Focuses on bilateral cooperation to address the long-term consequences of the Fukushima accident, including lessons learned related to facility decommissioning, spent fuel storage and decontamination, and managing the longer term consequences of a nuclear incident, such as monitoring and remediating contaminated areas.

- Co-led by:
 - US:
 - The Department of Energy (DOE) Office of Environmental Management
 - The Environmental Protection Agency (EPA)
 - Japan:
 - The Ministry of Economy, Trade and Industry (METI)
 - The Ministry of Environment (MOE)



Decommissioning and Environmental Management Working Group

- First meeting held December 2012 in Tokyo

- Key Outcome – Third Joint U.S.- Japan Cleanup Workshop
 - To be held Spring 2013
 - Planning for this workshop is underway
 - Will focus on Japanese priorities, including Behavior of Cesium, Environmental Monitoring, and Stakeholder Communication

- Key Outcome – Conduct Staff Exchanges
 - Initiated staff exchanges from U.S. National Laboratories to Japanese Government Organizations under State Department's Embassy Fellows Program
 - Began in February 2013
 - Japanese scientists will visit U.S.



Decommissioning and Environmental Management Working Group

- Working Group is supporting direct partnerships between U.S. National Laboratories, U.S. companies and Japan
- The Savannah River National Laboratory (SRNL) and the Tokyo Electric Power Company (TEPCO) signed a Work for Others contract that addresses key Fukushima site cleanup issues
 - Pacific Northwest National Laboratory is partner
 - Other labs may participate



SUMMARY

- Japan has significant environmental challenges at Fukushima

- U.S. - Japan Bilateral Commission established to facilitate discussions on nuclear energy, safety, security, emergency preparedness, and decommissioning and decontamination

- Decommissioning and Environmental Management Working Group will address Fukushima cleanup issues
 - Near-term U.S. technical assistance to be provided through the third joint U.S. - Japan cleanup workshop

 - Long-term plans for the Working Group will be developed



Contact Information

Steven P. Schneider

Director, Office of Tank Waste Management

Office of Environmental Management

U.S. Department of Energy

steve.schneider@em.doe.gov

Phone: 301-903-2328



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