# Westinghouse Columbia Fuel Fabrication Facility (CFFF) Seismic Improvement Program

February 24, 2014

Westinghouse






## Agenda

Recap – public meeting, January 2013

Meeting the license condition by January 31, 2014

Results
- Assessed building code of record
- Met performance requirements

Post-Fukushima upgrades
- Methodology
- Actions completed
- Actions planned

Succeeding actions

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# Recap – public meeting, January 2013

Problem statement

- Address two open unresolved items (URI's)
- Meet license condition: complete enhanced analyses by January 31, 2014

Objectives

- Create seismic improvement plan
- Update documentation
- Submit safety basis to NRC
- Perform upgrades, as needed

Scope of work

- Gather initial information on plant design
- Select analysis method
- Perform code comparison
- Perform structural, seismic and criticality safety analysis
- Update Integrated Safety Analysis (ISA)



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# Meeting the license condition

*License Condition S-7: The licensee shall complete additional enhancements to the structural and seismic response analysis and related additional criticality safety evaluations as outlined in LTR-RAC-12-27 by January 31, 2014.*

- Consistent with NUREG-1520, Westinghouse applied DOE-STD-1020/IBC 2012 to its building and equipment
- Westinghouse completed its "Seismic Evaluation of the CFFF" in October 2013, and submitted the proprietary report to the NRC per LTR-RAC-14-11
- Westinghouse issued its "Criticality Safety Evaluation (CSE) for the CFFF Analysis Basis Seismic Event" and completed its implementation by December 31, 2013
- Westinghouse submitted its ISA Summary to reflect these changes per LTR-RAC-14-8 on January 28, 2014

# Results

- Determined the building code of record and completed code comparison
- Completed documentation to address two URI's
- Met the requirements of the license condition
  - Per DOE-STD-1020-2002, the building was determined to be a seismic performance category of PC 2 (essential facility) with an importance factor, I > 1
  - The building remains standing
  - Performance requirements met
  - Submitted seismic report and updated ISA's






# Post-Fukushima upgrades

Methodology – criticality safety

- Nuclear Criticality – High Consequence Event [10 CFR 70.61(b)(1)]
- Required to be Highly Unlikely [10 CFR 70.61(b)] {CFFF = 10-4}
- Initiating Event ~10-4 for analysis based earthquake
- Very conservatively designed upgrades such that criticality is highly unlikely even assuming an initiating frequency of 1 {encompasses lower frequency earthquake damage (e.g., pipe damage)}

Actions completed

- Vaporizer safety valves, protective covers, and redesigned lids to prevent UF6 release from wall failure and/or pipe ruptures
- Final Assembly Inspection Pit equipped with structure on inspection stands to preclude lateral movement
- Completed Emergency Preparedness upgrades (FLEX)
- Completed Emergency Preparedness procedure changes to improve response

Actions planned

- Improvement actions - not required to meet regulatory requirements – are planned to enhance chemical safety, e.g., additional anchoring for chemical storage tanks

# Succeeding actions

- The CFFF will remain committed to a strong safety culture and continuing to increase safety margin.
- Westinghouse will validate that sufficient documentation has been provided to the NRC to close the two URI's.
- Westinghouse along with Nuclear Energy Institute (NEI) will continue to participate in The NRC's development of a generic letter.
- Westinghouse will continue to be conservative in our decision making and to aggressively improve in all aspects of our operations including preventive measures and emergency response for seismic events.