



# **U.S. Nuclear Regulatory Commission – China Cooperation on New Nuclear Construction**

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September 17, 2010

# Topics

- NRC Background
- New Reactors
- Construction Inspection Program
- Vendor Inspection Program
- Interactions with China on Construction and Vendor Inspections



# Mission

The NRC's mission is to regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment.

# Major Activities

- Focused on:
  - reactor safety oversight and reactor license renewal of existing plants,
  - licensing and construction oversight of new reactors,
  - materials safety oversight and materials licensing for a variety of purposes, and
  - waste management of both high-level waste and low-level waste

# New Reactors

- No applications for new reactors from 1979 – 2007
- Current Applications
  - 18 Combined License Applications (COL) Applications
  - 3 Design Certifications (DC) Applications
  - 3 Amended DC Applications
- Issued
  - 4 DCs
  - 4 Early Site Permits

# New Reactors Construction Oversight Program

## Objectives:

- Ensure that plants are constructed in accordance with approved designs and safety regulations
- Ensure operational readiness
- Communicate results to all stakeholders
- Ensure that a well constructed unit is ready for safe operation

# New Reactors Construction Oversight Program

- Construction officially began at Vogtle Unit 3 under the Limited Work Authorization (LWA)



Vogtle Site – August 2010



Sanmen Site – April 2010

# Vendor Inspections

- Vendor inspection program for new reactors was established in 2007.
- Verify effective implementation of quality assurance requirements
- Conduct a minimum of 10 inspections per year
- As supply chain becomes more global, seeking collaborative relationships with peer regulators



# **NRC and NNSA-China Cooperation on Nuclear Safety**

# 30+ Years of Cooperation

- NRC-NNSA Protocol for Cooperation in Nuclear Safety Matters (1981...Present)
- Memorandum of Cooperation on Nuclear Safety for the AP 1000 (2007)
- Agreement for Participation in the NRC CAMP and CSARP Programs (2009)
- Memorandum of Further Cooperation on Nuclear Safety for the AP 1000 (includes Cooperation on Construction and Vendor Inspection) (2010)

# Forum of Cooperation

- Annual US-SINO (NRC/NNSA) Steering Committee Meeting (Nuclear Safety)
- Biennial US-China Joint Commission Meeting on Science and Technology Cooperation (JCM)
- Annual US-China Meeting on Peaceful Uses of Nuclear Technology (PUNT)

# Activities Since 2007

- NRC/NRO- Led training seminars on Design Review and Certification of AP 1000
- Cooperation through the Multinational Design Evaluation Program (MDEP)
- NNSA staff at NRC Headquarters and Regional Office
- NRC staff at NNSA Shanghai Regional Office and Sanmen AP 1000 construction site.
- Annual and Semi-Annual Meetings and Video Conferences



# Insights Gained From Cooperation

- China will be the proving ground for AP1000 technology
- NNSA review of AP1000 design relies on the work done by the NRC
- Work being done to complete AP1000 detailed design for Sanmen will be utilized for U.S. applications
- While ITAAC are part of the license requirements in China, not clear how they will be implemented



# Future Construction and Vendor Inspection Cooperation With NNSA

- Additional construction inspectors scheduled to observe Sanmen construction activities
- Planned cooperation on vendor inspections in U.S. and in China
- Possible assignment of vendor inspector to NNSA to observe vendor inspections