

# Nuclear Renaissance – New Nuclear Plants Hot Topics

## Waste Management Symposium March 2, 2011

# US New Nuclear Plants

- 17 companies and consortia considering building 30 units
- 12 combined license applications (COLAs):  
11 companies and consortia for 20 units
- 4 Early Site Permits issued (2 active COLAs, 1 “inactive” COLA)
- 2 Early Site Permits under review

# New Nuclear Plant Worldwide

- 15 countries with 60 units under construction
- Most reactors on order or planned are in Asia; additional reactors in Europe, US, Russia

Source: World Nuclear Association website

# Reactor Designs

- Design Certification
  - ABWR: 3,926 MWt (DC renewals by Toshiba and GE-Hitachi)
  - Westinghouse AP1000: 3,400 MWt
  - GE-Hitachi ESBWR: 4,500 MWt
  - AREVA U.S. EPR: 4,500 MWt
  - Mitsubishi US-APWR: 4,451 MWt

# Reactor Designs - continued

- SMRs (“Small Modular Reactors” in US, “Small and Medium Reactors” at IAEA)
  - NuScale: Integral PWR; 160 MWt (45 Mwe)
  - Pebble Bed Modular Reactor: HTGR; 400 MWt (165 Mwe)
  - Toshiba Super-Safe, Small and Simple (4S): SFR; 30 MWt (10 MWe)
  - Hyperion: LBE; 70 MWt (25 MWe)
  - GE-Hitachi Power Reactor Innovative Small Module: SFR; 840 MWt (311 Mwe)
  - B&W mPower: Integral PWR; 400 MWt (125 Mwe)
  - Next Generation Nuclear Plant: HTGR (various participants)

# Panel

- New nuclear plant perspective from AREVA
- Decontamination & Decommissioning considerations in new nuclear plant design
- Security/Safeguards aspects of new nuclear plant designs