



RIC 2008

Emerging Issues: Materials and Mechanical Cranes

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Cranes and Heavy Load Issues

- Heavy load handling safety and operating experience insights
- Clarity of heavy load handling licensing basis at current operating reactors
- Above items addressed in Regulatory Issue Summary 2005-25 and Supplement

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Safety and Operating Experience

- Fuel storage cask lifts and reactor head lifts are most safety-significant
- Single-failure-proof handling systems used for most fuel storage cask operations
 - Crane upgrades often found to not require NRC review
 - Lifting devices and crane maintenance and testing important
- Traditional handling systems used for most reactor vessel head lifts
 - Adherence to operating restrictions derived from load drop analyses is important
 - Operator training and procedure quality of greater importance

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Clarity of Licensing Basis

- Industry (through NEI) Proposed Heavy Load Handling Initiative
 - Ensure heavy load lifts continue to be conducted safely
 - Ensure plant licensing bases consistent with operational practices
- Supporting NRC Enforcement Guidance
 - EGM 2007-006 provides enforcement discretion during implementation of industry initiative
 - Updated temporary inspection guidance consistent with initiative and enforcement guidance

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Cranes

- Reactor Head Lifts
 - NEI developing guidance for single-failure-proof equivalence (for reactor head lifts only)
 - NRC concern focused on potential causes of load drops from high elevations over reactor vessel
- Fuel Storage Cask Lifts
 - Most facilities using single-failure-proof cranes designed to NUREG-0554 or ASME NOG-1
 - Load drop analyses may be used with cranes designed to typical industrial standards

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Load Drop Analyses

- NEI has developed draft load drop analysis guidance for reactor heads
- Public meetings between NEI and NRC on December 13, 2007 and February 1, 2008
 - NRC agrees with ultimate acceptance criterion being adequate cooling of fuel
 - NRC Staff expressed concerns with values proposed for subsidiary strain-based acceptance criteria

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Future NRC Activities on Initiative

- NRC expects future meetings will be held to narrow differences in load drop analysis acceptance criteria
- NRC anticipates endorsement of acceptable NEI guidance through either a second supplement to RIS 2005-25 or some other means
- Heavy load issues planned to be an ongoing part of the refueling baseline inspection procedure
