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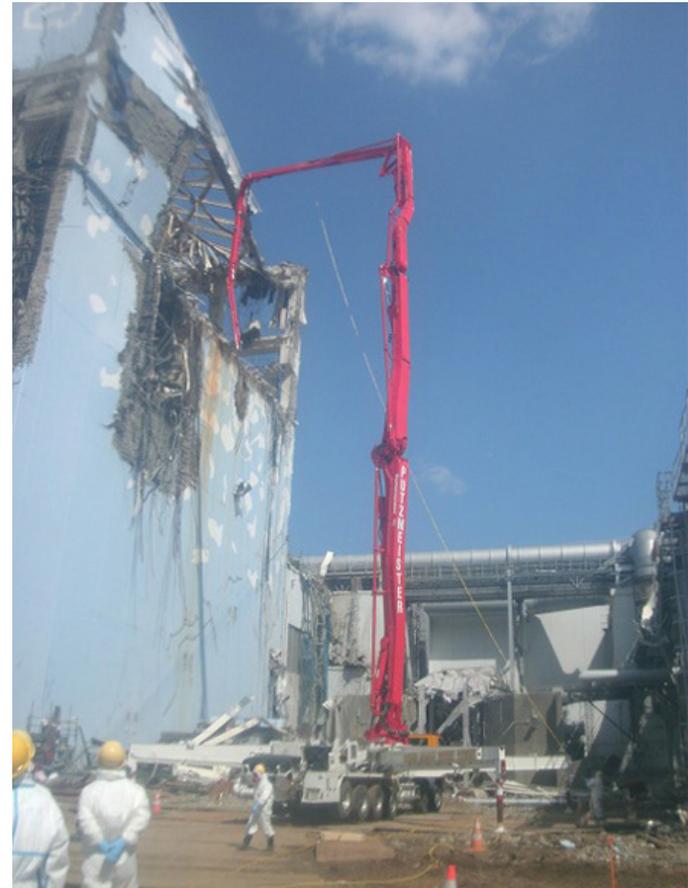
Protecting People and the Environment

Status of Fukushima Lessons Learned Task on Reliable Spent Fuel Pool Level Instrumentation (Order EA-12-051)

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Efforts Expended to Add Water to SFPs at Fukushima



Fukushima Unit 3 SFP-- Steel Beam Removal—Potential Missile Size Involved



Steel beam which fell into the pool (When being lifted) Steel beam which fell into the pool (After being removed)



Reliable Spent Fuel Pool Level Instrumentation Order/Guidance

- Commission Order EA-12-051, “Order To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation,” was issued March 12, 2012 (ML12054A679)
- NEI 12-02, Revision 1: Industry Guidance for Compliance with NRC Order EA-12-051, “To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation” was issued August 24, 2012 (ML12240A307)
- NRC Staff Interim Staff Guidance JLD-ISG-2012-03, Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation, issued August 31, 2012 (ML12221A339)

Order EA-12-051 Requirements

- Full compliance with Order requirements by 2nd refueling outage following submittal of Overall Integrated Plan, or December 31, 2016, whichever comes first.
- Must be capable of reliably monitoring 3 important level datum points:
 - Level 1: Minimum level adequate to support normal operations
 - Level 2: Level adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck
 - Level 3: Level where fuel remains covered
- Provide an initial status report 60 days after the issuance of the final ISG, and at 6-month intervals following submittal of the overall integrated plan

Order EA-12-051 Requirements

- Use of a fixed, primary instrument and a back-up instrument that may be either fixed or portable.
- Arranged in a manner that provides reasonable protection of the level indication function against missiles that may result from damage to the structure over the spent fuel pool.
- Mounted to retain design configuration during and following the maximum seismic ground motion.
- Reliable at temperature, humidity, and radiation levels consistent with the spent fuel pool water at saturation conditions for an extended period.
- Primary instrument channel shall be independent of the backup instrument channel.

Order EA-12-051 Requirements

- Provide for power connections from sources independent of the plant ac and dc power distribution systems, such as portable generators or replaceable batteries. Permanently installed primary and back-up channels to be powered from independent sources.
- The instrument channels shall maintain their designed accuracy following a power interruption or change in power source without recalibration.
- Provide for routine testing and calibration.
- Monitor spent fuel pool water level from the control room, alternate shutdown panel, or other appropriate and accessible location.

Order EA-12-051 Requirements

- Personnel to be trained in the use and the provision of alternate power to the primary and backup instrument channels.
- Procedures to be established and maintained for the testing, calibration, and use.
- Testing and calibration processes to be established and maintained for scheduling and implementing necessary testing and calibration of the primary and backup spent fuel pool level instrument channels to maintain the instrument channels at the design accuracy.

Endorsed Additional Guidance

- Augmented Quality components and processes to be implemented to maintain a high state of reliability and availability.
- Channel reliability to be demonstrated by an appropriate combination of design, analyses, operating experience, and/or testing of channel components.
- NRC ISG contains specific exceptions to aspects of the seismic, shock, and vibration-related reliability demonstration guidelines stated within the NEI guidance.

Status of Evaluation of Reliable SFP Level Instrument OIPs

- By February 28, 2013, Licensees representing 64 of the 65 reactor sites with spent fuel in on-site pools had each submitted an Overall Integrated Plan (OIP) in response to the Order requirements, outlining a schedule and a proposed conceptual design for addressing the criteria in the Order.
- The NRC staff and Industry representatives identified a prioritization for evaluating the OIPs based on the dates of their scheduled refueling outages. Evaluation process was organized into four batches—Priority Levels 1-4.
- The staff has issued RAIs for plants in Priority Levels 1-3, and is currently preparing Priority Level 4 RAIs. Expected issuance of the last of these is August 15th.



Status of Evaluation of Reliable SFP Level Instrument OIPs

- The staff is currently finalizing the content of a template to help ensure Draft Safety Evaluations (SE's) are timely and consistent. Draft SE's contain "Open Items" in the topical areas where the licensee has indicated that information to address the issue will not be available until a later date.
- Responses to the staff's RAIs for Priority 1 plants are being received and evaluated now.
- Draft SE's will be prepared for each OIP using the same prioritization--Priority Levels 1-4. The goal: All Draft SE's issued by the end of November, 2013. As Open Items are closed thereafter, SE's will be revised to indicate closure.

Status of Evaluation of Reliable SFP Level Instrument OIPs

- Inspections: The staff plans to use information supplied within the OIPs, the responses to the staffs RAIs, and the information from licensee 6-month status update letters to make a reasonable assurance determination. Where needed to confirm implementation of an unusual proposed installation or procedural process, staff will coordinate with Regional or Resident Inspectors to gain additional assurance.
- Integration with Mitigating Strategies Order Inspections
- Goal for Staff's Conclusion: "The licensee has provided sufficient information for the staff to have reasonable assurance that the requirements of Order EA-12-051 have been met."

QUESTIONS?

