Effectiveness of Reactor Oversight Process Baseline Inspection Program External Report Out Meeting

February 5, 2014

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Project Goals

Enhance baseline inspection program to:

- incorporate inspection areas for the current environment,
- eliminate redundant inspection areas,
- ensure efficient and effective use of agency resources, and
- incorporate flexibility where appropriate.

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Meeting Goals

Inspection Area/Special Topics Leads present recommendations

Obtain feedback from external stakeholders

Discuss next steps and associated timeframe

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Meeting Agenda

8:00 – 8:15 AM	Opening Comments: Welcome, Overview, & Participant Introduction	M. Gamberoni
8:15 – 8:35 AM	Inspection Topic: Engineering **(20 min)**	G. Shear, A. Stone
8:35 – 8:55 AM	Inspection Topic: Maintenance **(20 min)**	K. Kennedy, N. Okeefe
8:55 – 9:00 AM	Inspection Topic: ISI **(5 min)**	R. Croteau, R. Rodriguez
9:00 – 9:10 AM	Inspection Topic: Misc **(10 min)**	R. Croteau, R. Rodriguez
9:10 – 9:30 AM	Inspection Topic: PIR **(20 min)**	M. Scott, R. Powell
9:30 – 9:35 AM	Inspection Topic: Operability **(5 min)**	M. Scott, R. Powell
9:35 – 9:50 AM	Break	
9:50 – 9:55 AM	Inspection Topic: Radiation Safety **(5 min)**	A. Howe

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Meeting Agenda

9:55 – 10:00 AM	Inspection Topic: Operations **(5 min)**	A. Howe
10:00 – 10:05 AM	Inspection Topic: Emergency Preparedness **(5 min)**	R. Kahler
10:05 – 10:25 AM	Inspection Topic Area: Safeguards **(20 min)**	S. Sullivan
10:25 – 10:40 AM	Special Topic: Aging Management **(15 min)**	H. Jones
10:40 – 10:50 AM	Special Topic: Operating Experience **(10 min)**	R. Sigmon
10:50 AM– 10:55 AM	Special Topic: Fukushima Follow-Up Items **(5 min)**	S. Campbell
10:55 – 11:00 AM	Special Topic: ISFSI **(5 min)**	M. Davis
11:00 – 11:10 AM	Holistic Review **(10 min)**	A. Howe
11:10 – 11:25 AM	Next Steps/Concluding Remarks **(15 min)**	M. Gamberoni

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Approach

- Data Gathering
- Data Analysis
- Recommendation Development
- Recommendation Consideration
- Procedure/Process Changes
- Implementation

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Inputs

- ROP Bases
- IP Owners, Inspectors, SMEs, Other Champions
- Recent Events and Inspections
- Lessons Learned, Independent Review, Audits
- External Stakeholders

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Engineering Recommendations Inspection

- Include flexibility to perform partial inspection as needed
- Broaden sample selection/topical areas
- Broaden attributes to inspect (capture operating experience)
- Decrease number of samples while deepening vertical slice
- Add or strengthen guidance for aging components, preventive maintenance, procurement, and end-of-life issues

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Engineering Recommendations Other

- Training/Knowledge Transfer
  - Enhance refresher training
  - Encourage counterpart groups/develop charters
- Inspector Aids/Tools
  - Develop standard request for information letter
  - Enhance sample selection (smart samples, TIs, INs, lessons learned AITs/SITs)
  - Develop central location for technical guidance
  - Incorporate operating experience

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Maintenance Recommendations

- Institute 1-2 vertical slice reviews per year of an on-line maintenance outage for a risk-significant system (or group of systems)

- This change affects:
  - IP 71111.04, Equipment Alignment
  - IP 71111.12, Maintenance Effectiveness
  - IP 71111.13, Maintenance Risk Assessments and Emergent Work Control
  - IP 71111.19, Post-Maintenance Testing
  - IP 71111.22, Surveillance Testing

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Maintenance Recommendations

- Introduce operating experience samples into applicable maintenance inspection procedures, including aging issues
  - Initial target IPs could include:
    - IP 71111.12, Maintenance Effectiveness
    - IP 71111.22, Surveillance Testing

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Maintenance Recommendations

- Provide specific guidance for performing PI&R reviews in each procedure. For example, in IP 71111.22:
  - Perform a review of licensee actions to address measuring and test equipment that fails calibration
  - Review samples or condition reporting database to verify that the licensee is implementing increased frequency testing in accordance with ASME Code or other requirements when degraded performance is indicated during inservice testing

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Inservice Inspection Recommendations

- Consider performing some inspection at SG off site eddy current testing facilities
- Conduct a review of updated ISI program (rather than implementation) during the first outage after the required program takes effect
- Take credit for License Renewal One Time Inspections in ISI sample
- Incorporate inspection of vessel internal program into the IP

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Adverse Weather Recommendations

- Add clarifications to conduct review of site specific actions including Fukushima and TI-187 lessons learned

- Consider adding site specific design review under the component design basis inspection procedure

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Performance Indicator Verification Recommendations

Provide additional guidance to allow a more detailed inspection review of mitigating system performance index (MSPI) values submitted by licensees.

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Follow-up of Events & Notices of Enforcement Discretion Recommendations

Based on review of all regional inputs, no changes are recommended at this time. The inspectors believe that the inspection procedure provides the right balance of guidance, requirements, resources and flexibility.

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Refueling and Other Outage Activities Recommendations

- Allow the review of worker schedules to be performed after the outage
- Clarify containment closeout inspection requirements to focus on assessment of the licensee's program
- Allow certain activities to be reviewed as part of other IPs
  - System walkdowns to IP 71111.04
  - Risk assessment reviews to 71111.13
  - Control room observation of cooldown and startup activities to IP 71111.11
  - Reactor Physics Testing to IP 71111.22

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Refueling and Other Outage Activities Recommendations

- Minor clarifications and editorial corrections:
  - Clarify the purpose of containment entry following shutdown
  - Expand guidance for heavy load lifts

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Problem Identification & Resolution Recommendations

Inspection Recommendations:

- Focus procedure on inspection of corrective action program (CAP) and CAP implementation (may require changes to objectives and guidance)
- Enhance guidance for safety conscious work environment assessment portion of biennial inspection
- Enhance guidance for semiannual trend reviews
- Include guidance for review of long-standing issues and sampling of historical generic communications
- Adjust resources based on acceptance and implementation of the above recommendations

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

PI&R Recommendations

Assessment Recommendations:

- Define a clear threshold for CAP effectiveness
- Incorporate results of the other inspections into overall CAP assessment
- Enhance the incorporation of the CAP assessment into the overall assessment of plant performance (e.g., regulatory actions for less than effective programs)

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Operability Recommendations

Remove the semiannual operator work around sample from IP 71152 and add an annual 71111.15 sample to confirm operability of systems impacted by operator workarounds/burdens and review the aggregate impact of operator workarounds/burdens.

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Radiation Safety Recommendations

- Realized significant improvement from 2010 revision of procedure
- Need further IP revision to:
  - incorporate feedback forms
  - extend the range of allowable inspection hours within each procedure (flexibility)
  - allow inspectors to select focused samples based on plant conditions and problems

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Operations Recommendations

- Restructure control room observation requirement from one per quarter to four per year requiring observation of different plant evolutions as they occur
- Clarify examination failure rate calculation guidance
- Consider relaxing the 10% re-exam failure rate threshold
- Add collecting re-exam failure rates to annual collection of pass/fail results

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Emergency Preparedness Recommendations

- Extensive review and revisions to IP 71114 conducted in CY2011 in support of emergency preparedness rulemaking

- No further IP revisions recommended at this time
  - IP 71114.07 may be revised based upon lessons learned during CY2013 implementation

- No recommended EP program changes recommended at this time

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Safeguards Recommendations

- Revise IPs to establish new sample numbers and ranges for completion
- Increase inspection program flexibility
- Revise IPs to better align inspection efforts, gain efficiencies and reduce redundancies
- Maintain current overall inspection program resources
- Creation of the Cyber Security Directorate

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Aging Management Recommendations

- Recommendations were made to update the following IPs

Engineering	71111.05A/Q/T	Fire Protection
	71111.06	Flood Protection Measures
	71111.17	Evaluations of Changes, Tests, or Experiments
	71111.18	Plant Modifications
Maintenance	71111.04	Equipment Alignment
	71111.12	Maintenance Effectiveness
	71111.19	Post Maintenance Testing
	71111.22	Surveillance Evaluations
Operability	71111.07A/T	Heat Sink Performance
ISI	71111.08	Inservice Inspection Activities
PI&R	71152	Problem Identification and Resolution
Misc.	71111.01	Adverse Weather Protection
	71111.20	Refueling and Other Outage Activities

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Aging Management Recommendations

- Update applicable procedures to ensure
  - Inspections occur at plants in the period of extended operation
  - Verify the continued implementation and updates of AMPs and/or implementing procedures
  - Verify issues related to aging of equipment are identified and resolved in a timely manner

- Minimal resource impact
  - Performed as small part of existing sample hours
  - For example, Fire Protection Inspection allots 4hrs/sample
  - 5-10% of the 4 hours may focus on aging management
  - May be performed on one sample a year

- Develop aging management technical guidance document to aid inspectors in performing the inspection

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Operating Experience Recommendations

- Use the flexibility inherent in the ROP to provide OpE-informed updates associated with selected IPs
  - Consider recent events as well as relevance to past NRC actions (generic communications/issues, task force reports, significant events etc.)
- IP OpE updates would be publicly available, linked directly from the applicable IPs
- Frequency of updates would depend on the IP and the applicability of recent events

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Fukushima Recommendations

- Incorporate changes to existing flood-related IPs based on TIs and generated feedback forms
- Use information from future TIs for potential changes to IPs
- Continue to evaluate long-term actions commensurate with rulemaking and licensees implementation schedules

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

ISFSI Recommendations

- Include all aspects of ISFSI operations into the ROP through the development of a IMC 0609 SDP process associated with construction and operation of an ISFSI.

- Develop a screening process that uses a series of logic questions to determine the level of safety significance of a finding. Allow all performance issues to be assessed for cross-cutting issues.

- Develop a mechanism that would allow performance of inspections without needing regional administrator approval as currently required by Appendix C inspections.

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Next Steps

- Recommendations summarized in public report
- Simple changes processed with feedback forms
- Recommendations requiring additional development will require working groups
- Capture lessons learned to incorporate into future BIP assessments

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Concluding Remarks

Thank You!!!