Meeting Agenda

Time	*Topic*	*Speaker*
1:00pm	Opening Remarks and Introductions	NRC
1:10pm	Presentation: Building a Smarter Inspection Program	NRC
1:30pm	Stakeholder Comments and Questions	Public
2:00pm	Presentation: Building a Smarter Licensing Program	NRC
2:20pm	Stakeholder Comments and Questions	Public
2:50pm	Closing Remarks	NRC
3:00pm	Adjourn	

- Please mute your microphone and/or phone
- Please state your name and organization when speaking

Building a Smarter Fuel Cycle Inspection Program

Jonathan Marcano, P.E.
NMSS/DFM
March 5, 2020

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

Agenda

- Review approach and scope
- Results
  - Assessment of inspection procedures (IPs) and inspection areas
  - Decision-making methodology
  - Recommendations
- Next Steps
- Questions

Review approach and scope

- Included all areas of safety and safeguards as referenced in Inspection Manual Chapter (IMC) 2600 and IMC 2683
- Excluded, physical protection, classified material and information security
- Stakeholder engagement
  - Held 9 public meetings
  - Proactive engagement with stakeholders
  - Received multiple letters from NEI and UUSA

Results

- Gaps and Overlaps in current IPs
  - No major gaps
  - Increase sample and improve guidance for chemical safety
  - Overlaps: Maintenance/Surveillance, Waste Management
- Areas of major interest
  - Resident Inspector Program
  - Leveraging the Integrated Safety Analysis (ISA)
  - Corrective Action Program
  - Flexibility of core inspection hours

Decision-making methodology

- Qualitative factors used for ranking risk importance of technical areas as Tier 1, Tier 2, Tier 3
  - Integrated Safety Analysis
    - Risk insights from accident sequences and consequences for each area
  - Operating Experience
  - Regulatory Requirements
  - Reputational Risk

Decision-making methodology

	Accident Sequences	Operating Experience	Regulatory Requirements	Reputational Risk
Criticality	*High*	*High*	*Medium*	*Low*
Chemistry	*High*	*High*	*Low*	*Low*
Fire	*Medium*	*Medium*	*Medium*	*High*
Environmental	*Low*	*Low*	*Low*	*High*
Radiation Protection	*Medium*	*Low*	*Low*	*High*
Transportation	*Low*	*Low*	*Medium*	*Low*
Emergency Preparedness	*Medium*	*Medium*	*Low*	*Medium*
Material Control & Accounting	*N/A*	*Medium*	*High*	*Low*

Results of Ranking

Technical Areas (Safety)	
Criticality Safety	Tier 1
Chemical Safety	
Fire Safety	Tier 2
Emergency Preparedness	
Radiation Protection	
Transportation	Tier 3
Environmental	

Technical Areas (Safeguards)	
Material Control and Accounting	Tier 1/Tier 2*

*Category I facilities ranked Tier 1; Category III and Gas Centrifuge facilities ranked Tier 2

Results of Ranking

- Tier 1
  - Annual Frequency and minimum of 90 hours
  - Benefit from team inspections
- Tier 2
  - Biennial Frequency and minimum of 60 hours
  - Benefit from team inspections
- Tier 3
  - Triennial Frequency and minimum of 30 hours
  - Included range of hours (30 – 60)
- Corrective Action Program
  - Frequency changes for some Tier 2 and Tier 3 inspection areas

Recommendations

- In-depth assessment of resident inspector IPs
- Increase effort on chemical safety
- Frequencies and resources
  - Tier 1 areas – annual inspection frequency and a minimum of 90 hours.
  - Tier 2 areas – biennial inspection frequency and a minimum of 60 hours.
  - Tier 3 areas – triennial inspection frequency and a minimum of 30 hours (30-60)

Recommendations

- Frequency reduction for Tier 2 and Tier 3 areas for facilities with NRC-approved CAP
- Flexibility – allowed variance in core hours
- Incorporation of OpE and Self-assessments into program

Next Steps

- No decision has been made
- March 10, 2020: Regulatory Information Conference Session
- March 31, 2020: Issuance of report and final decision
- April-December 2020: Implementation of changes to inspection guidance
- January 2021: Implementation of inspections using updated inspection guidance

Questions

Working Group Proposed Recommendation

		Category I Fuel Facility		Category III Fuel Fabrication Facility		Uranium Conversion Facility		Gas Centrifuge Facility				Laser Enrichment Facility	
Function/ Program Areas	Procedure or Procedure Suite	Inspection Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)	Approved CAP Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)
SAFETY OPERATIONS													
Plant Operations	88020 (OPR)	~~-~~ Annual	~~-~~ 105	Annual (2 per year)	~~80~~ 120	Annual (2 per year)	~~80~~ 90	Annual (2 per year)	~~80~~ 90	Annual (2 per year	90	-	-
	88135* (Resident Inspection Program)	Annual	~~707~~ 752	-	-	-	-	-	-	-	-	-	-
Criticality Safety	88015	Annual (2 per year)	~~102~~ 120	Annual (2 per year)	~~64~~ 60	-	-	Annual (2 per year)	~~64~~ 60	Annual (2 per year)	60	-	-
Fire Protection	88055 (FPB)	Biennial ~~-~~	30	~~Annual~~ Biennial	~~32~~ 60	~~Annual~~ Biennial	~~32~~ 60	~~Annual~~ Biennial	~~32~~ 60	Triennial	60	-	-
	~~88054 (FPT)~~	~~Triennial*~~	~~00~~	~~Triennial*~~	~~00~~	~~Triennial*~~	~~00~~	~~Triennial*~~	~~00~~	-	-	-	-

Working Group Proposed Recommendation

		Category I Fuel Facility		Category III Fuel Fabrication Facility		Uranium Conversion Facility		Gas Centrifuge Facility		Laser Enrichment Facility	
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SAFEGUARDS											
MC&A	Procedures as in IMC 2683	Annual	~~152 196~~ 120	~~Annual~~ Biennial	~~54 72~~ 60	-	-	~~Annual~~ Biennial	~~62 84~~ 60	-	-
	MC&A Observation	Triennial	30	Triennial	30	-	-	Triennial	30	-	-

Working Group Proposed Recommendation

		Category I Fuel Facility		Category III Fuel Fabrication Facility		Uranium Conversion Facility		Gas Centrifuge Facility				Laser Enrichment Facility	
Function/ Program Areas	Procedure or Procedure Suite	Inspection Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)	Approved CAP Frequency	Estimated Resources per IP (hrs)	Inspection Frequency	Estimated Resources per IP (hrs)
RADIOLOGICAL CONTROLS													
Radiation Protection	88030 (RP)	Biennial ~~with annual subsections~~	~~64~~ 60	Biennial ~~with annual subsections~~	~~64~~ 60	Biennial ~~with annual subsections~~	~~64~~ 60	Biennial ~~with annual subsections~~	~~64~~ 60	Triennial	60	-	-
Environmental Protection	88045 (Effluent Control and Env.)	~~Annual~~ Triennial	~~32~~ 30-60	~~Annual~~ Triennial	~~32~~ 30-60	~~Annual~~ Triennial	~~32~~ 30-60	~~Annual~~ Triennial	~~32~~ 30-60	5 Years	30-60	-	-
~~Waste Management~~	~~88035 (WM)~~	~~Biennial~~	~~32~~	~~Biennial~~	~~32~~	~~Biennial~~	~~32~~	~~Biennial~~	~~32~~	-	-	-	-
Transportation	86740 (T)	~~Biennial~~ Triennial	~~32~~ 30-60	~~Biennial~~ Triennial	~~32~~ 30-60	~~Biennial~~ Triennial	~~32~~ 30-60	~~Biennial~~ Triennial	~~32~~ 30-60	5 Years	30-60	-	-
FACILITY SUPPORT													
~~Maintenance/ Surveillance~~	~~88025 (MS)~~	-	-	~~Annual~~	~~30~~	~~Annual~~	~~30~~	~~Annual~~	~~30~~			-	-
Emergency Preparedness	88050 (EP)	~~Annual~~ Biennial	~~32~~ 30	~~Annual~~ Biennial	~~32~~ 30	~~Annual~~ Biennial	~~32~~ 30	~~Annual~~ Biennial	~~32~~ 30	Biennial	30	-	-
	88051 (Exercise Observation)	Biennial	48	Biennial	48	Biennial	48	Biennial	48	Biennial	48	-	-
Plant Modifications (Annual)	88070	Annual unless 88072 is performed	~~32*~~ 30*	Annual unless 88072 is performed	~~32*~~ 30*	Annual unless 88072 is performed	~~32*~~ 30*	Annual unless 88072 is performed	~~32*~~ 30*	~~Annual unless 88072 is performed~~	~~32*~~	-	-
Plant Modifications (Triennial)	88072	Triennial	~~96*~~ 90*	Triennial	~~96*~~ 90*	Triennial	~~96*~~ 90*	Triennial	~~96*~~ 90*	Triennial	90*	-	-
Corrective Action Program	88161	-	-	-	-	-	-	-	-	Triennial	90	-	-

Appendix B – Current and Proposal

	Category I Fuel Facility		Category III Fuel Fabrication Facility		Uranium Conversion		Gas Centrifuge Facility			Laser Enrichment Facility	
Function Areas Core Hours	Current Program	Proposal	Current Program	Proposal	Current Program	Proposal	Current Program	Proposal	Proposal CAP	Current Program	Proposal
Resident Inspector	797	752									
Plant Operations	0	105	60	120	60	90	60	90	90	0	0
Criticality Safety	192	120	64	60	0	0	64	60	60	0	0
Fire Protection	30	15	51	30	51	30	51	30	20	0	0
MC&A	196	120	72	30	0	0	64	30	30	0	0
MC&A Observation	10	10	10	10	0	0	10	10	10	0	0
Security	241	241	8	8	8	8	184	184	184	136	136
Radiation Protection	32	30	32	30	32	30	32	30	20	0	0
Environmental Protection	32	10	32	10	32	10	32	10	6	0	0
Waste Management	16	0	16	0	16	0	16	0	0	0	0
Transportation	16	10	16	10	16	10	16	10	6	0	0
Maintenance/Surveillance	0	0	30	0	30	0	30	0	0	0	0
Emergency Preparedness	56	39	56	39	56	39	56	39	34	0	0
Plant Modifications	53	50	53	50	53	50	53	50	30	0	0
Corrective Action Program	0	0	0	0	0	0	40	30	30	0	0
Total Annualized Hours =	**1672**	**1502**	**500**	**397**	**354**	**267**	**708**	**573**	**520**	**136**	**136**

Building a Smarter Fuel Cycle Licensing Program

Donnie Harrison
NMSS/DFM
March 5, 2020

Agenda

- Review approach and scope
- Results
  - Recommendations
  - Prioritization
- Next Steps
- Questions

Review approach and scope

Objective: Identify areas that would improve the efficiency and effectiveness of the Fuel Cycle Licensing Program

- Working Group members from fuel cycle, spent fuel, and NRR
- Stakeholder engagement
  - Held numerous public meetings
  - Proactive engagement with internal and external stakeholders
  - Received multiple letters: NEI and UUSA

Results

37 Suggestions

- Considered principles of good regulation (Openness, Clarity, Efficiency, Reliability, Independence)
- Considered additional working group insights
- Identified recommended actions to address suggestions
- Prioritized individual suggestions (using 3-step process)
  - Recognize that many suggestions are inter-related and should be implemented together

Matrix of Suggestions

Focus Area	High Priority Suggestions	Medium Priority Suggestions	Low Priority Suggestions
Guidance and Tool Development	19, 31, 32	14, 15, 20, 23, 24, 25a, 25b, 26, 30	10, 16, 17
Planning and Processing	1, 2, 3, 4, 6a, 7b, 18, 27	5, 28, 29	6b
Performance and Documentation	7a, 8, 9a, 9b, 11, 12, 13a, 13b, 21	22	

Next Steps

- Today: Collect any additional insights
- March 11, 2020: NRC RIC Session
- March 31, 2020: Issuance of final report
- April 15, 2020: Decision on recommended actions
- April 30, 2020: Develop integrated implementation plan for approved recommended actions
- May-December 2020: Implementation of approved near-term recommendations
- January 2021 and beyond: Implement longer-term recommendations consist with the implementation plan

Questions