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**DECOMMISSIONING PLANNING RULE:
ACTIVITIES RELATED TO RESIDUAL
RADIOACTIVITY IN THE SUBSURFACE**

2015 NRC Regulatory Information Conference
March 10, 2015

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Takeaways For Today

- The key word in the Decommissioning Planning Rule (DPR) is **PLANNING**
- NRC guidance is available to help with implementation and other questions
- Prompt remediation has not disappeared

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**Fundamentals of
Decommissioning Planning**

- Have a plan
- Pay attention
- Make sure you have the money
- Evaluate often

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History of the License Termination Rule, Groundwater, and the DPR

- Licensed material identified in subsurface soils and groundwater at decommissioning facilities – Late 1990s - Mid 2000s
- NEI establishes industry task force on groundwater contamination – November 2005
- [NRC Liquid Radioactive Release Lessons Learned Task Force](#) – March 2006
- [NEI 07-07, "Industry Groundwater Protection Initiative"](#) – August 2007
- [EPRI Groundwater Protection Guidelines for Nuclear Power Plants](#) – January 2008
- [NRC TI 2515/173, "Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative"](#) – October 2008
- [NEI 08-08, "Generic FSAR Template Guidance for Life Cycle Minimization of Contamination"](#) – October 2009
- NRC Groundwater Contamination Task Force – March 2010
- [NRC Inspection Procedure 71124.06, "Radioactive Gaseous and Liquid Effluent Treatment"](#) – June 2013


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The Decommissioning Planning Rule

- **Effective on December 17, 2013**
- Minimization of contamination
 - Adds language to §20.1406(c)
- Site surveys and monitoring
 - Modifies §20.1501(a) regarding subsurface surveys
- Retain records of residual radioactivity and other surveys
 - Adds section §20.1501(b)
- Update financial assurances accordingly


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DPR Guidance Documents

- Regulatory Guide (RG) 4.21, "Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning" (June 2008)
- RG 4.22, "Decommissioning Planning During Operations" (December 2012)
- NUREG-1757, "Consolidated Decommissioning Guidance," Volume 3, "Financial Assurance, Recordkeeping, and Timeliness," Rev. 1 (February 2012)

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Ongoing Activities from the DPR

- Commission Direction: Create a technical basis for a potential rule on prompt remediation that would
 - Address remediation during operations
 - Incorporate feedback gained from stakeholder involvement
 - Define criteria that would require prompt remediation
- Technical basis explores alternatives to prompt remediation
 - NRC staff prefers the “analyze before action” approach
- New Commission Direction: Decide whether or not to proceed with rulemaking or collect additional data before deciding
 - Collecting two years of additional data was selected


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Prompt Remediation: Next Steps

- Collect data on unplanned releases
 - Routine licensee communications and event reports
- Evaluate the information to assess licensee response
 - Justification for delayed or partial remediation
 - Provisions for additional remediation funding
- Make a rulemaking recommendation to the Commission
 - Go, don't go, or go for some licensees or license types


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BACKUP SLIDES AND ADDITIONAL INFORMATION ON THE DECOMMISSIONING PLANNING RULE AND PROMPT REMEDIATION ACTIVITIES

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FUNDAMENTALS OF DECOMMISSIONING PLANNING

- APPLIES DURING THE **ENTIRE LIFE CYCLE OF THE FACILITY**
- MONITOR, SURVEY, AND SAMPLE TO DETERMINE THE EXTENT OF RESIDUAL RADIOACTIVITY PRESENT AT THE SITE
- ESTIMATE THE COST TO REMEDIATE THE AFFECTED AREA(S)
- THEN EITHER:
 - REMEDIATE SOON TO MINIMIZE THE NEED FOR ADDITIONAL FINANCIAL ASSURANCE
 - INCREASE FINANCIAL ASSURANCE PER THE REGULATIONS TO REMEDIATE LATER


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BACKGROUND

- LICENSE TERMINATION RULE ISSUED IN 1997
- THE COMMISSION DIRECTED AN IMPLEMENTATION REVIEW IN 2000
- SECY-03-0069 RECOMMENDED RULEMAKING IN TWO AREAS:
 - FINANCIAL ASSURANCE
 - IDENTIFICATION OF CONTAMINATION
- THE COMMISSION APPROVED THE STAFF RECOMMENDATION FOR RULEMAKING
- PRELIMINARY RULE INCLUDED REMEDIATING "SERIOUS CONDITIONS" PROMPTLY


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DECOMMISSIONING PLANNING RULE

- **EFFECTIVE DECEMBER 17, 2013**
- MINIMIZE INTRODUCTION OF RESIDUAL RADIOACTIVITY
- RULE ADDS TO §20.1406(c)
 - OPERATE IN A WAY TO MINIMIZE INTRODUCTION OF RESIDUAL RADIOACTIVITY TO THE ENVIRONMENT
 - PROCEDURES TO REDUCE LEAKS AND SPILLS
 - SURVEILLANCE TO FIND THEM PROMPTLY
 - FACILITATE DECOMMISSIONING
 - REDUCE WASTE GENERATION AS PRACTICAL
 - DISPOSE OF WASTE EARLY WHEN PRACTICAL


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DECOMMISSIONING PLANNING RULE

- SURVEY THE SITE, INCLUDING SUBSURFACE AREAS
- RULE MODIFIES §20.1501(a) REGARDING SURVEYS
 - INCLUDES SUBSURFACE
- RETAIN RECORDS OF RESIDUAL RADIOACTIVITY AND ASSOCIATED SURVEYS
- RULE ADDS NEW §20.1501(b)
 - RECORD RESIDUAL RADIOACTIVITY IN RECORDS IMPORTANT TO DECOMMISSIONING
 - CONSIDER KEEPING MORE RECORDS FOR HISTORIC SITE ASSESSMENT
- UPDATE FINANCIAL ASSURANCES ACCORDINGLY


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GUIDANCE

- **REGULATORY GUIDE (RG) 4.22, "DECOMMISSIONING PLANNING DURING OPERATIONS"** (December 2012)
 - MINIMIZE NEW CONTAMINATION AND RADIOACTIVE WASTE GENERATION
 - CONDUCT APPROPRIATE RADIOLOGICAL SURVEYS OF THE SITE
 - RETAIN RECORDS OF RESIDUAL RADIOACTIVITY
 - PROVIDE ADEQUATE FUNDING TO COMPLETE DECOMMISSIONING
- **NUREG-1757, VOLUME 3, REVISION 1** (February 2012)
 - CREATE A PLAN TO PAY FOR ACTUAL REMEDIATION ACTIVITIES
 - CHANGES TO FINANCIAL REPORTING AND INSTRUMENTS


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RG 4.22: CONDUCT SURVEYS

- RADILOGICAL SURVEYS PER § 20.1501(a)
 - SURFACE SURVEYS
 - ACCESSIBLE AREAS
 - NOT READILY ACCESSIBLE AREAS
 - SUBSURFACE EXAMINATION IS AN EXPLICIT REQUIREMENT
 - SURVEY NEAR POTENTIAL SOURCES
 - SURVEY IN GROUNDWATER FLOW PATHS (DOWNSTREAM)
- **NEI 07-07, "INDUSTRY GROUNDWATER PROTECTION INITIATIVE," OBJECTIVES MEET THE INTENT OF THE RULE**


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RG 4.22: RETAIN RECORDS

- RECORDKEEPING PER § 20.1501(b)
 - RETAIN RADIOLOGICAL SURVEY RESULTS WITH "RECORDS IMPORTANT TO DECOMMISSIONING"
 - SIGNIFICANT** RESIDUAL RADIOACTIVITY IS THAT WHICH REQUIRES REMEDIATION AT TIME OF LICENSE TERMINATION FOR UNRESTRICTED RELEASE
 - RECORDS BECOME THE BASES FOR SITE CHARACTERIZATION SURVEYS AT LICENSE TERMINATION


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RG 4.22: MAINTAIN FINANCES

- UPDATE AND ADJUST FINANCIAL ASSURANCE, AS APPROPRIATE
 - DETAILS IN RG 1.159 & NUREG 1757, VOLUME 3, REVISION 1
 - ESTIMATE COST TO REMEDIATE THE SITE TO REQUIRED LEVEL
 - CREATE A SUITABLE REMEDIATION SCHEDULE
 - ARRANGE FOR SUFFICIENT FUNDS PER THE APPLICABLE FINANCIAL ASSURANCE REGULATIONS OR REQUIREMENTS


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SUBSEQUENT DPR ACTIVITIES

- IN 2007, THE COMMISSION ISSUED A STAFF REQUIREMENTS MEMO FOR THE DPR, INSTRUCTING STAFF TO CONTINUE TO EXPLORE A TECHNICAL AND REGULATORY BASIS FOR A PROPOSED NEW / ADDITIONAL RULE TO MANDATE PROMPT REMEDIATION
- THIS TECHNICAL / REGULATORY BASIS WOULD:
 - ADDRESS REMEDIATION DURING OPERATIONS
 - SEEK PUBLIC COMMENT AND STAKEHOLDER INVOLVEMENT
 - DEFINE CRITERIA TO REQUIRE ACTION (I.E., PROMPT REMEDIATION)


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ALTERNATIVES CONSIDERED

- REGULATION ON RADIOLOGICAL DOSE OR CONCENTRATION
 - START REMEDIATION IF DOSE CONTAMINATION EXCEEDS §20.1201, 1301, OR 1403
 - DO ANALYSES IF CONCENTRATIONS EXCEED TABLE 2 OF APPENDIX B TO PART 20, OR TWO TIMES SOIL SCREENING VALUES
- REQUIRE ALARA ANALYSIS AND REMEDIATION SCHEDULE**
- ISSUE A POLICY STATEMENT ON AMENDING LICENSES VIA SITE-SPECIFIC LICENSE CONDITIONS, OR BY ORDER IF NECESSARY
- ISSUE ENHANCED GUIDANCE
- CONTINUE CURRENT CASE-BY-CASE APPROACH
- NO ACTION
- PREFERRED STAFF ALTERNATIVE (2012): **ANALYZE AND PLAN**


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RESPONSE TO COMMISSION

- RULEMAKING WAS BUDGETED FOR FY 2013; HOWEVER:
 - GROUNDWATER TASK FORCE RECOMMENDATIONS IN 2011 LED TO THE STAFF CONTINUING TO DEVELOP A TECHNICAL BASIS
 - IN 2012, THE COMMISSION REQUESTED A NOTATION VOTE ON THE PROS AND CONS OF A PROMPT REMEDIATION RULEMAKING
 - THIS EVALUATION INCLUDED STAKEHOLDER INPUT AND A BACKFIT DISCUSSION RELATED TO THE TECHNICAL / REGULATORY BASIS
- THIS RESULTED IN SECY-13-0108, WHICH IDENTIFIED THREE OPTIONS:
 - PROCEED WITH RULEMAKING
 - DO NOT PROCEED WITH RULEMAKING
 - COLLECT TWO YEARS OF DATA, THEN DECIDE**
- SRM-SECY-13-0108 APPROVED OPTION 3


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PLANNED ACTIONS

- COLLECT AND EVALUATE LICENSEE DATA ON RESIDUAL RADIOACTIVITY
 - WHERE DID LICENSEES LOOK FOR RESIDUAL RADIOACTIVITY DURING SURVEY ACTIVITIES AND WHAT DID THEY FIND?
 - WHAT DID THEY DO ABOUT IT?
 - WHAT CHANGES DID THEY MAKE TO THEIR DECOMMISSIONING FUNDING PLANS?
- HOLD ANOTHER PUBLIC MEETING (Probably Early 2016)
 - PRESENT NRC RESULTS
 - SOLICIT STAKEHOLDER INPUT
- RECOMMENDATION TO COMMISSION ON ADDITIONAL RULEMAKING
 - LATE 2016**


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RECOMMENDATION DATA SOURCES

- INSPECTION REPORTS
 - NORMAL PERIODIC INSPECTIONS
 - TI 2600-017 – IMPLEMENTING THE DPR
 - ENSURE THAT RELEASES TO THE ENVIRONMENT ARE PROMPTLY IDENTIFIED AND CHARACTERIZED
 - LICENSEES RECORD RADIOLOGICAL SURVEY DATA
 - TI 2515-173 – IMPLEMENTING NEI 07-07
 - RECORDS IMPORTANT TO DECOMMISSIONING
- LICENSEE REPORTS PER
 - §20.2203
 - §50.72
- ANNUAL EFFLUENT REPORTS


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DATA EVALUATION

- NUMBER OF UNPLANNED RADIOLOGICAL RELEASES
 - SOURCE(S) OF RELEASE
 - LOCATION OF RESIDUAL RADIOACTIVITY
- LICENSEE RESPONSE
 - PROMPT CLEANUP
 - PLANS FOR DELAYED MITIGATION
 - ACTIVE REMEDIATION
 - DEMONSTRATE COMPLIANCE WITH RELEASE CRITERIA AT TIME OF LICENSE TERMINATION
 - APPROPRIATE ADJUSTMENTS TO DECOMMISSIONING FUNDING

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POSSIBLE CONCLUSIONS

- NO ADDITIONAL RULEMAKING IS NEEDED; CURRENT IMPLEMENTATION OF THE DPR PROTECTS PUBLIC HEALTH AND SAFETY
- ADDITIONAL RULEMAKING IS NEEDED TO ENSURE PROTECTION OF PUBLIC HEALTH AND SAFETY
- ADDITIONAL ACTIONS ARE NEEDED FOR SPECIFIC LICENSEES OR LICENSE TYPES, INCLUDING:
 - CONFIRMATORY ACTION LETTER
 - AMENDMENT TO LICENSE (BY ORDER, IF NEEDED)
 - AMEND CERTAIN SPECIFIC LICENSE CONDITIONS

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