Development of “Historical Site Assessments” (HSAs) for Decommissioning Nuclear Power Plants

Radiological Effluents and Environmental Workshop
June 27 – 30, 2015
Newport, RI

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NPP Decommissioning's

- Completed or >50%
  - **Saxton**
  - **Big Rock Point**
  - **Trojan**
  - **Ft St Vrain**
  - **Connecticut Yankee**
  - **Maine Yankee**
  - **Yankee Rowe**
  - Humboldt Bay
  - Rancho Seco
  - Zion
  - LaCrosse
  - Fermi 1

Done

- Recent Announcements
  - **Pilgrim**
  - **Oyster Creek**
  - **Fitzpatrick**
  - Vermont Yankee
  - San Onofre
  - Crystal River
  - Kewaunee
  - Many pending decisions

Operating

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What is an HSA?

- Supports Initial Characterization and Remediation Planning
- Supports LTP (License Termination Plan)
  - Required Licensing Document for D&D
- Radiological and/or Non-Radiological
- Detail and Complexity
- Supports identification of “impacted” and “non-impacted” areas.
- Initial MARSSIM Classification (1, 2, 3, NI)
- Identify Data Gaps

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Why?

- Identifies potential, likely, or known sources of rad material & contamination
- Identifies areas that need further investigation
- Identifies potential contaminant migration pathways
- Informs Site Closure and Decommissioning Planning
- Identify candidate areas/structures for Partial Site Release

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How?

- Review/Summarize Records Required by 10CFR50.75(g) Post 1988
- Personnel Interviews
- "Older" records reviews
  - CRs, RORs, IRs, ERs, etc…
- Consider
  - Soils, Buildings, Groundwater

- Spreadsheets
- Databases
- Comprehensive Report
- May get regulator review.
- COCs
  - Radiological
  - Non-Radiological

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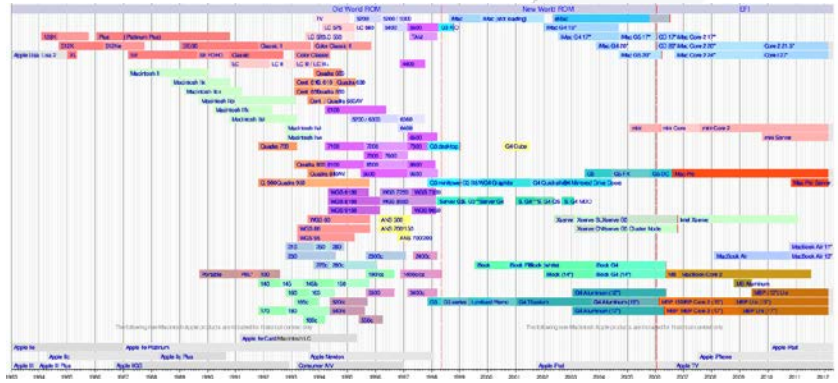
When?

- Requirements
  - Prior to Site Characterization
  - Prior to completing LTP
  - Prior to start of final remediation



- Early Start Considerations
  - To support Site Closure planning
  - To support decommissioning cost estimates
  - Identify characterization data gaps to clearly define NI areas

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Typical HSA Events

- Contaminant migration in soil from below grade pipe break/leaks
- Discovery of groundwater contamination
- Soils/bedrock in groundwater migration pathways
- Deposition on structures and surfaces from significant airborne release events
- Historical outside rad material storage areas
  - Currently structures or "clean" storage on the footprint
- Outside surface contamination from leaks/spills during transport of highly contaminated objects
- Coatings applied over contaminated surfaces

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Typical Content

- Executive Summary
- Glossary
- Purpose of the HSA
- Property Identification
  - Physical Characteristics
  - Environmental Setting
- Historical Site Assessment Methodology
  - Approach and Rationale
  - Documents Reviewed
  - Property Inspections
  - Personnel Interviews
- Assessment Findings
  - Conceptual Site Model
  - Non-Radiological Impacts
  - Radiological Impacts
- Conclusions
- Recommendations
  - Includes addressing data gaps
- Cited References
- Appendices
  - Includes figures and summary tables of area initial classifications

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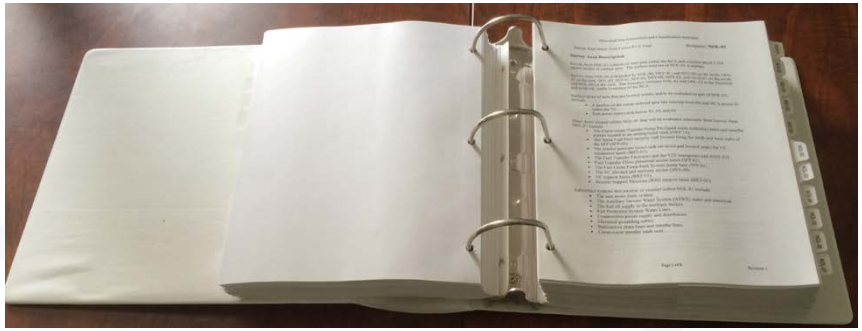
Typical HSA Size

- A significant level of effort is required to develop the HSA
- The resultant document size can vary
  - At least several hundred pages
  - Much larger if significant characterization has already been done



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Questions?

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