Benefits of Technology in Commercial D&D

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Applicability of Technology in Commercial D&D

- Commercial projects benefit from established technology
- Opinions based on “T” Technology not “t” technology (e.g. talking about new processes not “piece parts”)
- Commercial D&D are often a result of “premature shutdown” so planning and preparation are often lagging
- Commercial projects do not have national labs at immediate disposal, but certainly ORISE and other labs have contributed greatly to Commercial successes (e.g. “leaching rates” for underground concrete, etc.)
- Commercial projects have tended to be about the new application of existing technology than development of new technologies
- Determinant on approach is often driven by risk levels (high dose potential, personnel safety risk, environmental and public exposure potential, etc.)

D&D Technology User not Developer

- Length of schedule is the greatest determinant of commercial decommissioning cost – technology must arrive at the site functionally tested, ready to use and the operators must be readily trained.
- Significant problems may occur when technology not adequately field tested and proven before using (e.g. Internal Segmentation with water-jet cutting at CY proved costly in $ and Dose)
  - MY benefited from a schedule and cost and dose standpoint due to the lessons learned from CY- AREVA improved the Secondary Waste Collection system prior to mobilization
  - Capturing lessons learned with new technologies is key to continued improvement opportunities (e.g. Gamma Cam at MY)

New application for existing Technology can be helpful

- In-situ Gamma Spectroscopy (ISOCS) benefited MY, CY, & YR D&D
  - MY used for forebay and land area survey
  - CY used to safely survey vertical rock faces in PAB excavation
  - YR used for land survey in high background areas near ISFSI

Additional Technology applications

- Ground Penetrating radar and Electro-magnetic imaging (ECI) yielded mixed success in locating underground debris fields
- However, EMI was quick and provided reasonable preliminary scan results in support of remediation of debris disposal areas.

Technology vs. “rip and ship” debate

- This debate is really about the business case for a specific site.
- The alternative of decon and survey vs. rip and ship is a cost/schedule and a safety decision not a technical matter.
- Rip and ship is an option when disposal costs are low enough to support the approach, if disposal costs are prohibitive, then you decon and survey for release under your LTP or respective release requirements
- The decision of which approach makes sense may not be an all or nothing proposition! Depending on cost/benefit analysis and the characterization of a given SSC, it may make sense to utilize both approaches.

Approach vs. Technology

- Used explosives to “soften” some concrete on MY Turbine Pedestal
  - Very effective
  - Cost and schedule benefit
- Explosives used to weaken MY dome to allow it to fall so that the top could be demolished with hoe rams
- Hoe ram approach “re-engineered” such that the CY dome was demolished from the bottom up entirely with hoe rams

Technology Lessons Learned

- D&D can, and certainly has, utilized technologies successfully, but the keys to success;
  - They must work in a construction environment – Not just a laboratory
  - The technology must be adequately field tested in environments similar to which they are applied
  - Greater technology application costs can be absorbed if the technology really saves schedule or improves safety
  - Don’t use technology to clean up something that could and should be removed more quickly, safely and cost effectively.