Test and Evaluation of Foam Fixative Technologies to Mitigate Contaminant Release in 3D Void Spaces for D&D

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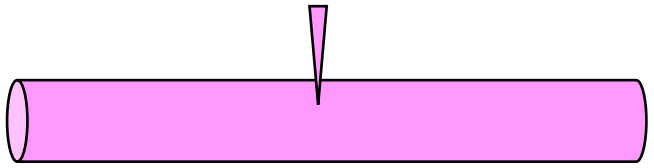
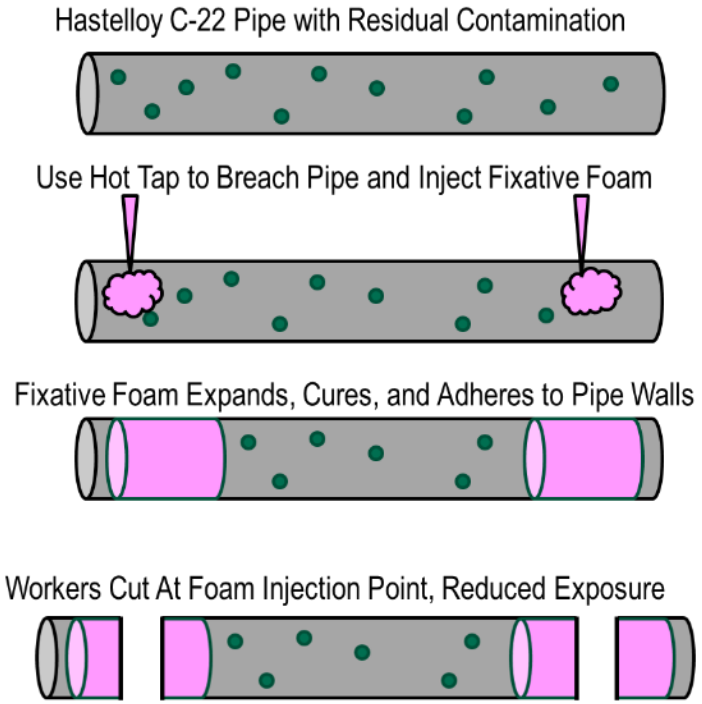
Overall Needs and Objectives:

- By FY '27, the F/H Laboratory Deactivation Project Team plans to remove all the buried LAD and HAD piping in the Courtyard between 772-F and 722-1F.
- The driver for removal is to prevent future release(s) to the environment from the buried, highly-contaminated piping.
  - Foam fixative has applications during removal process and pre-removal process.
- The intent is to remove the piping to within 1' of the respective building and then to cap both the 2 & 3-inch "core" pipe and the 3 & 4-inch "jacket" pipe.
- The piping is generally buried to a depth of 3-5 feet.
- Total length of piping to be removed is approximately 250 feet. Piping will be cut to 5' lengths so that it may be disposed to B-25.
- Has large-scale applications across DOE-EM complex.

Aerial view of Potential Hot Site at F-Area

Pre-removal Stabilization Concept of Employment





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FIU Year 4 Highlights & Accomplishments: Technology Comparison to Support Down-selection

	Curing Time	Max Curing Temp.	Average Plug Strength	Adhesion to Wetted Surface	Fire Retardant	Environmental Chamber	Headspace	Hot Tap Compatible
Hilti	1-3 mins	276°F	7733 lbf	**888 lbf**	YES	PASS	PASS	**FAIL**
FoamBag	15-45 mins	277°F	9684 lbf	**4741 lbf**	YES*	In progress (SRNL)	In progress (SRNL)	**PASS**
Endseal	15-45 mins	In progress	In progress	In progress	YES*	TBD	TBD	**PASS**

*Fire retardant with addition of Exolit AP 750 additive.

*Endseal creates airtight seal as early as 5 mins after application and a stronger airtight plug when fully cured.

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FIU Year 5 Projected Scope

- Continue test and evaluation of EndSeal
- investigate the potential for "functionalizing" the foam fixative
  - Radiation shielding - Mix tungsten fillers being developed by SRNL
  - Hg stabilization
- Initiate testing of hot tap and cutting equipment on Hastelloy C-22, Schedule 80 pipes and determine impacts on foam fixative plug (mechanical stressors)
- Codify additional performance requirements and testing protocols into update of ASTM E3191
- Complete development of Hot Test Plan with SRNL
  - Initial mtg w/SRNL held on Monday, 8 July
  - FIU will confirm hot tap compatibility for application of technology and cutting tools
    - Work Plan Procedures developed
  - SRNL will conduct Radiation Hardening Tests and integration of Tungsten Oxide additive for radiation shielding

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Thank You. Questions?