



Partial Blast of Ultra High Solids Coated Tanks

NSRP SPC Panel Project Update

March 3, 2016

Approved for public release; distribution is unlimited.
Category B Data – Government Purpose Rights.

Partial Blast of Ultra High Solids Coated Tanks

PROJECT TECHNICAL REPRESENTATIVE

- Bob Cloutier, GD-BIW

PROJECT LEAD

- Elzly Technology Corporation

INDUSTRY INVOLVEMENT

- GD-NASSCO
- BAE Southeast Shipyards
- On Point Solutions, Inc.

Partial Blast of Ultra High Solids Coated Tanks

SCOPE

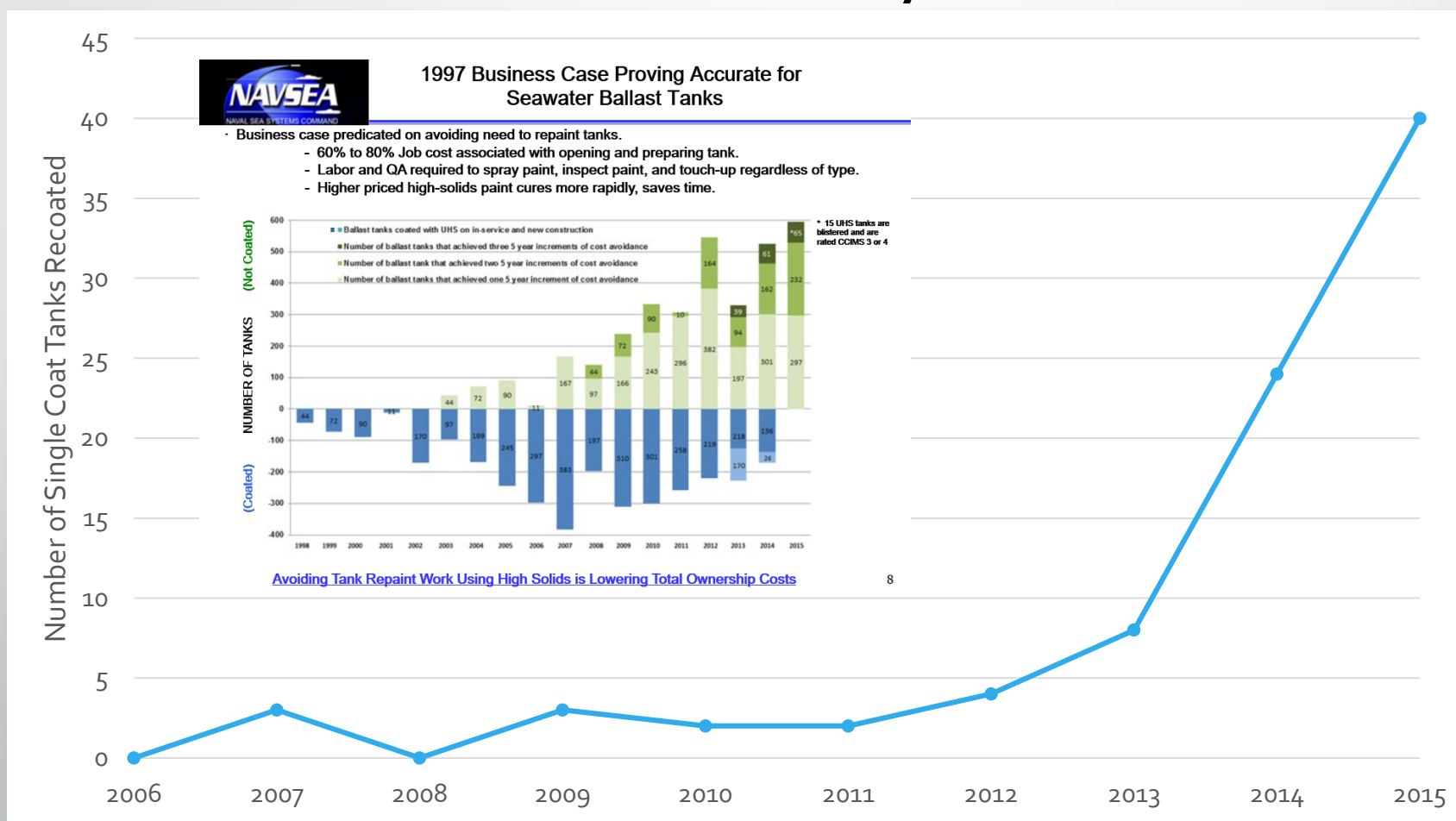
- Quantify the risks and benefits of substituting a partial blast for a full blast during re-preservation of tanks and/or voids with ultra-high solids coatings on surface ships
- Demonstrate the concept on an active Navy ship
- Determine if such a process can effectively be implemented for surface ships and quantify the potential cost/schedule savings versus current Navy practice
- Propose wording for NAVSEA Standard Item 009-32

Why “Partial” Blast?

- It is harder to remove single coat systems than legacy coating systems
 - Why do we remove “good” paint?
 - Why do blasters spend 80% of their time removing 10% of the paint?
 - After spending so much time on installing a quality product, why do we remove it *all* when a relatively small percentage (3%?) is failing?

Why do we spend a disproportionate amount of surface preparation time removing paint from “difficult areas” and then spend a disproportionate amount of application time coating those areas?

Increasing Number of Single Coat Tanks being Recoated each year



Is the Risk Worth the Reward?

Risks

- How long will the “good” paint last if I do not remove it? (e.g., how does the “system” perform?)
- How do I manage quality?
 - Plan, specify, produce, & inspect
- How is future maintenance planning impacted?

Rewards

- Cost and Schedule Savings
 - Higher production rate
 - Reduce clean/re-work iterations
- Potentially higher quality
 - Retaining in-tact coating in difficult to coat areas increases the probability of good coverage

Prepare Technical Document

PROCESS FOR "PARTIAL BLAST" DEMONSTRATION

ALTERNATIVE PROCEDURE 1(A)

- SSPC SP 14/NACE 8 Industrial Blast Cleaning EXCEPT that all corrosion shall be removed from all surfaces.
- Tightly adherent coating shall not remain on more than 10% of each unit area (3" by 3").
- Limited access areas* are exempt from the 10% restriction except that they shall be subjected to the abrasive blast and on completion the remaining coating shall have a dull, coarse appearance rather than the glossy appearance of unblasted UHS surfaces.

ALTERNATIVE PROCEDURE 1(B)

- SSPC SP 7/NACE 4 Brush-Off Blast Cleaning with Spot blasting on areas per SSPC SP/10/ NACE 2 Near White Blast Cleaning.
- Remove as much of the underlying coating as is practical without the excessive effort
- In areas where the coating is difficult to remove because of adhesion, ensure the edges are well feathered with the blast procedure
- Small islands of existing paint should not be left within an area blasted to SP-10

* NOTE: The back sides of beams and small recesses are not normally considered "Limited Access" as they are accessible with specialized equipment and work practices. If abrasive blasting in the area will result in damage to the substrate, adjoining equipment, or damping material the area is considered "Limited Access."

Prepare Technical Document

PROCESS FOR "PARTIAL BLAST" DEMONSTRATION

- Surface Preparation Inspection (both Procedures)
 - 3.10.6 (surface profile) – determine the required number of measurements based on an estimate the exposed metal area
 - 3.10.7 (conductivity/surface chloride) may be determined on bare metal areas or areas with remaining paint; the required number of measurements shall be base on the entire surface area
 - 3.10.8 (surface preparation) shall refer to the cleanliness requirements for near white metal and the following for areas of retained paint. Areas of retained paint shall be visually inspected and shall satisfy the following:
 - Any areas of sharp transition or steps between bare metal and paint shall be inspected and tested with a dull putty knife to determine adhesion . If the paint flakes or can be dislodged, the area shall be rejected and cleaned again to remove the loose paint.
 - The retained coating shall have a dull, coarse appearance rather than the glossy appearance of unblasted UHS surfaces.

Prepare Technical Document

PROCESS FOR "PARTIAL BLAST" DEMONSTRATION

- Coating Application and Inspection (both Procedures)
 - Application and inspection requirements are as in NSI 009-32
 - For the purposes of this demonstration, areas of overcoated, intact coating shall comply with the requirements of note 33, "Runs, sags, and drips may appear in the paint. For DFTs less than 50 mils, no action is required. DFTs in excess of 50 mils shall be assessed by the local NAVSEA technical authority."
 - The surface area shall be inspected for edge lifting of the remaining epoxy that was over coated. The curing epoxy primer will lift any loose edges of the existing coating that may not have been visible during the initial surface preparation inspection as it cures. These areas shall be prepared in accordance with SSPC-SP-3 and repaired.

Surface Ship Demonstration

- Engaged SERMC, SURFMEPP, NAVSEA 05 (SE), and BAE for a demonstration opportunity
 - Envisioned Surface Ship Tank; challenging to identify
 - Well deck overhead opportunities may exist
- Vision for Demonstration vision
 - Follow Process Instruction
 - Obtain Feedback from Navy, Contractor, & subcontractor on process
 - Obtain photos illustrating what we mean by partial blast
 - Begin discussion about “fitting” partial blast into ship maintenance

Puget Sound Naval Shipyard Demonstration

- Demonstration was planned independent of this project
 - Submarine superstructure
- NSRP project is observing to enable information sharing & helping to document the demonstration
 - New personnel/transitioning lessons from CWP project
 - Project on progress
- PSNS has committed to helping get demonstration information (including photographs) into the public domain

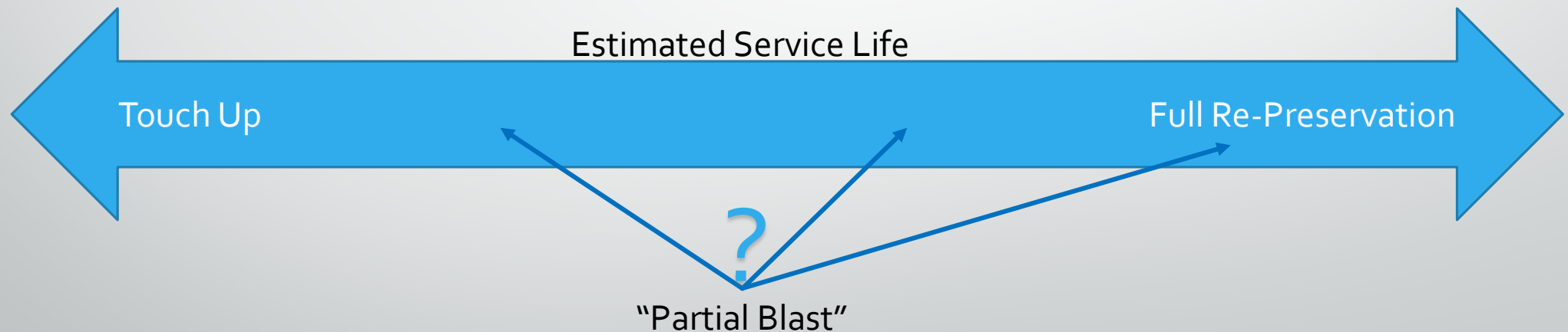
Outreach/Communication

- 28 Interested Stakeholders
 - 2 Ctg Manufacturers
 - 2 Consultants
 - 15 Navy representatives
 - 4 NSRP Shipyards
 - 4 Coating subcontractors
- Monthly Phone Meetings
 - Next is March 28, 2016 at 1300 EST



The Next Step

How do we deal with maintenance planning for a “partial blast” system?





Questions?