

DoD Executive Agent

Office of the Assistant
Secretary of the Army
(Installations and
Environment)



NDC EE



Cost-Effective Control Technologies to Comply with the National Emission Standards of Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair

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“Addressing Defense Requirements with Tomorrow’s Technology”



Background

- The NESHAP for Shipbuilding and Ship Repair was initiated under section 112(d) of the Clean Air Act (CAA)
- CAA 112(f) requires EPA to assess, within 8 years of initiation, the remaining risk to the public and develop more stringent standards
 - NESHAP for Shipbuilding and Ship Repair under assessment
 - Modeling scheduled to start in March 2005
 - Proposed residual risk ruling from the EPA anticipated in December 2005
- Commercial and Navy shipyards may be significantly effected by residual risk ruling
- Panel Project - “Coordination of Shipbuilding and Repair Industry Response to Environmental Protection Agency Residual Risk”



Shipbuilding Needs and Opportunity

- Need to determine the cost impact of the residual risk ruling to the shipbuilding industry
 - 90 days after public release of the residual risk ruling
- Need to identify, evaluate, and implement practices and controls to reduce environmental emissions and meet regulatory levels
- Anticipating a FY06 Research Announcement under the National Shipbuilding Repair Program Advanced Shipbuilding Enterprise (NSRP ASE) in Fall 2005



Proposed Project

- Identification, evaluation, and implementation of cost-effective control or alternative technologies to comply with the NESHAP for Shipbuilding and Ship Repair



Project Objectives

- Ensure continued operations at Navy and commercial shipbuilding and repair facilities despite the residual risk ruling of the NESHAP for Shipbuilding and Ship Repair
- Specifically, the proposed project shall:
 - **Assess** current operations at selected shipyards
 - **Determine** economic impact of residual risk ruling
 - **Identify** control or alternative technologies
 - **Test and Evaluate** select technologies
 - **Complete** a Final Report



Project Plan

- Assess Current Operations
 - Applicable to residual risk ruling (e.g., welding and blasting operations)
 - Define the extent of the problem
 - Conduct site visits and site surveys
 - Leverage the NDCEE's methodology developed with the Army for assessment of shipyards that will be affected by the residual risk ruling under the NESHAP for Shipbuilding and Ship Repair



Project Plan

- Determine Economic Impact of Residual Risk Ruling to the Shipbuilding Industry. Include
 - Estimated costs for implementation of control technologies
 - Comparison of costs of pollution prevention approaches
 - Cost of being “proactive” versus “reactive”
 - Leverage previous efforts completed under the NDCEE to identify and evaluate costs for control technologies for Army Installations in preparation for the Military NESHAP





Project Plan

- Identify Control or Alternative Technologies
 - Literature review
 - NSRP reports
 - Recent shipyard submissions/surveys
 - Technology Identification
 - Control Technologies
 - Alternative welding or blasting processes and materials
 - Data on cost, efficiency, workspace volume limitations, reliability, maintenance, and **impact to production**
 - Potential control technologies
 - Weld-fume extraction
 - Portable extraction equipment
 - Centralize extraction systems
 - Lightweight welding torches w/ built-in fume capture capability
 - Combination of process and engineering controls



Project Plan

- Testing and Technology Demonstration
 - Test and Evaluation Plan
 - Select processes and control technologies
 - On-site sampling and laboratory analysis of current emission (if needed)
 - Potential testing location(s)
 - Vendor facility
 - Certified independent laboratory or test facility
 - Shipyard
 - *CTC's* environmentally controlled room for testing welding operation



Project Plan

- Complete a Final Report
 - Summarize all activities, results, lessons learned, and recommendations
 - Cost benefit analysis of technologies selected and evaluated
 - Technology Transfer Plan
 - Leverage key lessons learned through the implementation of the Army's NESHAP plans



Option

- Production process and control model
 - Means to access information collected during this project
 - Inputs
 - Emission reduction factors
 - Costs for each control technology evaluated
 - Production impact factors
 - Estimates of additional production costs
 - Output
 - Information for shipyard managers and planners to make informed decisions regarding the most cost-effective means to reduce weld-fume and blasting emissions.



Proposed Team

- Shipyards
 - Vince Dickinson, Bath Iron Works (BIW)
 - Mike Chee, National Steel and Shipbuilding Company (NAASCO)
 - Frank (“Hogie”) Thorn, Northrup Grumman Newport News
 - Shawn Halvax, Southwest Marine
 - Wayne Holt, Atlantic Dry Dock Corporation (ADDC)
- General Counsel
 - John Wittenborn, Collier Shannon Scott, PLLC
- Risk Assessment Expert
 - Dr. Valorie Thompson, Scientific Research Associated
- Technology Identification and Evaluation
 - Georgette Nelson, CTC
 - Charlie Tricou and Janice Keay, ARL
- Others?



Open Discussion



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