

Bath Iron Works

**A GENERAL DYNAMICS COMPANY**

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**Residual Risk Whitepaper Update**

**Vince Dickinson**

June 20, 2006

# Major Events

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- ANPRM Published March 29, 2007
- EPA sends new Blasting Emission Factor's document to NSRP RR Team
- Internal EPA Changes

# ANPRM

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- Advance Notice of Proposed Rule Making issued March 29, 2007
  - 60 day comment period asking for public comments on data and modeling assumptions EPA intends to use to analyze risk
  - Comment period extended an additional 30-days
    - RR Team submitted an extension request along with the Residual Risk Coalition and several others
  - Comments & Correction due June 29, 2007

# New Approach

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- EPA is looking to address two regulatory requirements under this combined Risk and Technology Review
  - 112(f) residual risk
    - One time review following Benzene policy
  - 112(d)(6) technology review
    - Mirror the ample margin of safety determination and address concerns in MACT
- Same 2 decisions being done at the same time

# EPA's Process for Group 2

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- Extract MACT category info from latest emissions inventory (2002 NEI)
- Perform engineering review and supplement NEI with any additional data
- Model each MACT category to obtain preliminary inhalation risks
- Provide NEI data in ANPR, get public comments and obtain better source data

\* Reproduced from EPA's "Discussion with Shipbuilders" Presentation, October 26, 2006

# EPA's Process for Group 2

- Remodel the categories based on updated data
  - Identify “no action” for low-risk categories
  - Identify categories with significant persistent, bioaccumulative emissions; move to second regulatory bundle
  - Evaluate effectiveness and cost of additional risk reduction
- Make acceptability and ample margin of safety determinations for each source category
- Propose, address public comments, and take final action on the group of MACT categories

\* Reproduced from EPA's “Discussion with Shipbuilders” Presentation, October 26, 2006

# What Would Standards Look Like

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- Where additional controls are identified, standards would include technology, work practice, or performance standards as amendments to the existing standards
- For source categories where additional standards are needed to provide ample margin of safety, attempt to require controls where source is not low risk
  - Develop low risk source characteristics such as emission or production rate
  - Consider providing for site-specific risk assessment to show low risk for alternative compliance

\* Reproduced from EPA's "Discussion with Shipbuilders" Presentation, October 26, 2006

# Shipbuilding-Specific ANPRM Data

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- Yards Surveyed by EPA
  - Data for most yards is based on actual usage (lbs weld rod, tons grit, etc.)
  - EPA calculated emissions using the usage information and EPA developed emission factors
  - EPA segregated emissions based on information provided by yards
- EPA used State data for NASSCO
- NGNN used default values because of CBI status

# Shipbuilding-Specific ANPRM Data

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- For all other yards
  - ↗ EPA used 2002 NEI data
  - ↗ Assumed 34% of all reported chromium emissions are hexavalent
  - ↗ Assumed all emissions from one stack at fence line
- Next round of modeling EPA will extrapolate metal emissions where they are absent in the database

# Shipbuilding-Specific ANPRM Issues

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- EPA lists 88 MACT facilities and requests comments on that list.
- Several major source yards not listed in ANPRM
- Numerous non-shipyards listed in the ANPRM
- Data contained in ANPRM very inaccurate

# RR Team Actions RE: ANPRM

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- Requested an extension on behalf of the Industry
- Telconference with EPA to discuss model set up
- Developed comprehensive comments that will be submitted on behalf of the NSRP SP-1 Panel
  - ↗ Available to yards
- Requested and received the modeling input and output files
- Did research on the major source status of the 88 listed facilities and made contact with a large majority to ensure awareness of the rule

# ANPRM Comments

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- Supported use of Benzene Policy and risk out option for low risk facilities
- Accuracy of 77 Major source shipyards
- Applicability of welding and blasting as part of RTR
- Accuracy of dataset, with examples
- Emission Factors
- Hexavalent chromium defaults

# ANPRM Comments

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- Nickel speciation
- Short-term exposure rates (10x)
- Stack release characteristics
- Extrapolation of data
- Modeling assumptions

# Cancer Risk Levels Based on ANPRM

## Data

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BOLLINGER QUICK REPAIR L.L.C.	3.50874E-04
BOLLINGER SHIPYARDS LOCKPORT, LLC	2.89000E-04
BOLLINGER SHIPYARDS LOCKPORT/BOLLINGER LAROSE	1.84030E-04
BOLLINGER SHIPYARDS LOCKPORT LLC/BOLLINGER GREтна	1.02646E-04
NEWPORT NEWS	9.56837E-05
NORTHROP GRUMMAN SHIP SYSTEMS INC	5.21371E-05
DETYENS SHIPYARD MT PLEASANT	5.15110E-05
TRINITY MARINE GROUP INC/TRINITY YACHTS	3.28188E-05
NORTHROP GRUMMAN SHIP SYS/AVONDALE OPER	2.21704E-05
BOLLINGER SHIPYARDS, INC.	1.90310E-05
METAL TRADES:COOPER RIVER	1.51647E-05
JEFFBOAT	1.34271E-05
EL DORADO SANDBLASTING	1.21619E-05
BOLLINGER CALCASIEU LLC/SHIPYARD CLEANING	1.20853E-05
USN SUBMARINE BASE	1.16440E-05
ORTIZ & ALLDS	7.42730E-06
U.S. COAST GUARD YARD - CURTIS BAY	7.22830E-06
NORFOLK SHIPBUILDING AND DRYDOCK - BERKLEY	5.29503E-06
SOUTHWEST MARINE INC.	5.25019E-06
USN 32ND ST NAV STATION	5.22869E-06
USN NORTH ISLAND	5.21539E-06
NATIONAL STEEL & SHIPBUILDING	4.94375E-06
TRINITY MARINE MADISONVILLE	4.66914E-06
ALABAMA SHIPYARDS INC	4.02348E-06
MARINETTE MARINE CORP	3.78527E-06
BOLLINGER GULF REPAIR L.L.C.	3.21615E-06
ATLANTIC MARINE INC	2.09196E-06
NORTHROP GRUMMAN SHIP SYSTEMS INC	2.00892E-06
BOLLINGER TEXAS CITY LP	1.80709E-06
US NAVY - NORFOLK NAVAL SHIPYARD	1.71629E-06
BIW RE: MAIN YARD	1.02376E-06
THOMA-SEA SHIP BUILDERS, LLC/LOCKPORT	1.00111E-06

# Non-Cancer Risk Levels Based on ANPRM Data

BOLLINGER SHIPYARDS LOCKPORT, LLC	33.07671929
ORANGE YARD	10.24884484
JEFFBOAT	7.802029996
TRINITY MARINE MADISONVILLE	3.832357508
NORTHROP GRUMMAN SHIP SYS/AVONDALE OPER	1.749886147
BOLLINGER SHIPYARDS LOCKPORT LLC/BOLLINGER GREYNA	1.609223213
BOLLINGER SHIPYARDS LOCKPORT/BOLLINGER LAROSE	1.391975044
DETYENS SHIPYARD MT PLEASANT	1.197772701

# Blasting Emission Factors

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- RR Team has been in discussions with EPA re: Blasting EF's since Fall 2006.
- Started with a concern over Cr<sup>+6</sup> content in abrasive
- EPA provided the Team: "Revised Emission Factors for Abrasive Materials for the Shipbuilding and Ship Repair RR Rule" on April 27, 2007

# Revised Blasting Emission Factors

- Complete change in direction from EPA
- Based on testing done by KTA for NIOSH
- Premise of new equations assume there is “enrichment of metals in the PM10 fraction vs. bulk fraction.”
- Despite considerable data to the contrary, EPA refuses to accept that there is little to no Cr+6 in abrasive blast media

**Using EPA’s new equations a yard using 1,000 tons of coal slag would emit 89,339 pounds of Chromium!!**

# Revised Blasting Emission Factors

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**Using EPA's new equations a yard using 1,000 tons of coal slag would emit 89,339 pounds of Chromium!!**

**Using EPA's 35% Cr<sup>+6</sup>/Cr ratio, that would equate to 30,375 pounds of Hexavalent Chromium!!**

# The Good News

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- The Revised Blasting EF's never got officially posted on the Shipbuilding TTN Web Site
- Contacted by EPA
  - Notified that all future dealings with RR Rule should be via a new POC.
  - Internal team, including the Emissions & Testing Group, is reviewing the Revised EF document.
  - Committed to meet with Industry after internal review is completed

# Thank You Team!

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## **Shipyard Reps**

Vince Dickinson – BIW (Co-Lead)

Mike Chee – NASSCO (Co-Lead)

Wayne Holt – Atlantic Marine

Frank Thorn – NGNN

Shaun Halvax – SWM

Mike Host - NNSY

## **Risk Expert**

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## **Legal Expert**

John Wittenborn – Collier Scott Shannon

## **Trade Reps**

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Stacy Ballow – ASA

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Tiffany Belz