

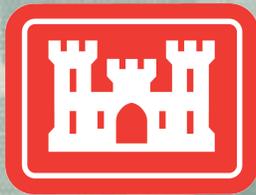
# Industry Information & Regulatory Update

Presentation for  
2015 Locks Maintenance Workshop

Tulsa, OK

February 10, 2015

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®



Marine Design Center

US Army Corps of Engineers  
**BUILDING STRONG**®



# OUTLINE

- Regulatory Update
- USACE Floating Plant Fuel Energy Initiative
- Rock Island Arsenal
- Hydra Set



# REGULATORY UPDATE

## EPA Vessel General Permit (VGP) 2013



- Went into effect December 2013
- Need to file NOI electronically (> 300 GRT or > 2,113 gals of ballast water capacity)
  - Need PARI if >79', but below the thresholds above
- Required to submit annual reports electronically
- Covers bilge, ballast, oil-to-sea interface, anodes, dry-docks, among other discharges
- BMP and effluent limits



# REGULATORY UPDATE

## EPA Small Vessel General Permit (sVGP) 2014



- Went into effect December 2014
- Commercial vs. Recreational Vessels
- Required to complete and retain onboard a Permit Authorization and Record of Inspection Form (PARI)
- Quarterly inspections (internal) are required for each vessel and are included in the PARI form.
- The only paperwork/forms required to be submitted to the EPA is an Annual Non-Compliance Form (if necessary).
- Impact (effluent limits, oil-to-sea interface, BMP)



# REGULATORY UPDATE

## Subchapter M

- The USCG has not published the final rule.
- August 2015??



# REGULATORY UPDATE

## EM 385-1-1

- Change 8 soon?
  - Increased Load Handling Equipment (LHE) on floating platform requirements
- Naval Architecture Analyses
  - Evaluate the LHE manufacturer's limits (generally out-of-level) against the vessel as a suitable platform
  - Evaluate the USCG minimum stability requirements
  - Issue Floating Service Load Charts (with Naval Architect Notes) and Floating Service Naval Architecture Analysis Report
  - PE Stamped
  - Checklist



# USACE Floating Plant Fuel Efficiency Initiative

## Background

- USACE began investigating and validating alternative fuels to be used in lieu of traditional fossil fuels onboard Floating Plant in 2010. USACE successfully demonstrated that the use of certified biodiesel fuel is feasible to reduce select environmentally sensitive emissions, increase USACE use of renewable energy, and reduce the use of fossil fuels.
- In an effort to further the alternative fuels initiative, reduce vessel emissions, and investigate additional fuel efficiency improvements, HQ USACE has funded a collaborative effort between the HQ USACE Floating Plant Manager, MDC and MSC/District Floating Plant Fleet Managers to build on prior years' vessel efficiency improvements.



# USACE Floating Plant Fuel Efficiency Initiative

- Methods for vessel efficiency improvements that will be investigated through energy audits and analysis are:
  - Vessel Operations Improvements
  - Biodiesel Conversions
  - Vessel Engine Overhauls or Retrofits
  - Vessel Repowers
  - Vessel LNG Conversions
  - Improvements in Hull Coatings
  - Improvements in Propellers and Rudder Bulbs.





# Rock Island Arsenal

Joint Manufacturing & Technology Center



# Rock Island Arsenal

Joint Manufacturing and Technology Center



## Manufacturing Capabilities & Services

Prototyping & Reverse Engineering

Welding & Fabrication

Pliable Materials

Heat Treatment

Tool & Gage

Die Sinking

Machining

Foundry

Forging

Plating

Blasting

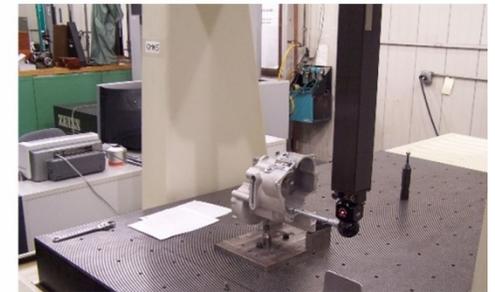
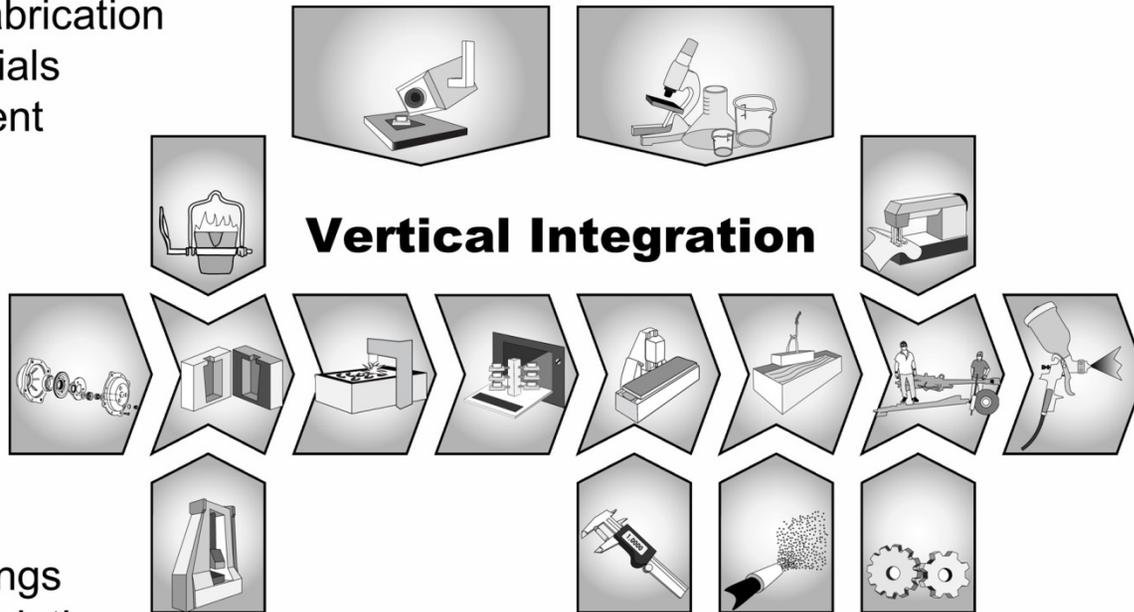
Assembly

Gears & Springs

Production Painting

Non-Destructive Testing

Engineering & Lab Services





# Working with RIA



## Benefits

- Ease of working government to government
- No contracts needed
- Fund projects quickly using a MIPR
- Open communication

## Point of Contact

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# HYDRA SET

- **Precision Load Positioner**
  - Eliminates risk of damage
  - Creates a safer work environment
  - Cuts labor costs
  - Saves time
  - Improves productivity



# HYDRA SET

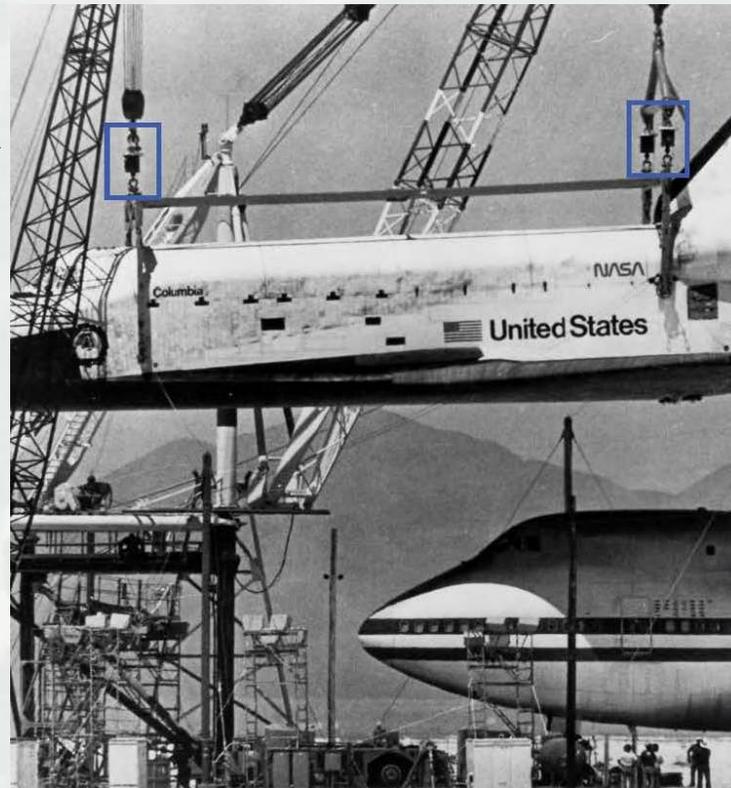
- Once the load is moved to within several inches of its final position, the Hydra Set Positioner assists with adjusting the final position of the load and ease it into place on onto its support fixture.
- Weight readouts are accurate to within one half of one percent of full scale, traceable to the National Institute of Standards and Technology.
- Eliminates oscillations produced by sudden starts and stops in crane cables, chains or slings. Also eliminates the need to jog the load into position, saving wear on crane brakes.



# HYDRA SET

## Operating Flexibility and Simplicity

- Four methods of operation: manual, pneumatic, electro-hydraulic or Wireless Remote
- Available in 13 standard models, with capacities from 1/2-ton to 300 tons



# RECENT SOFTWARE UPGRADES

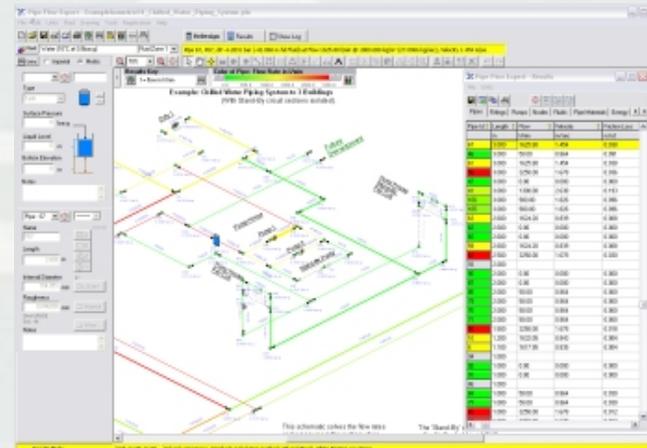
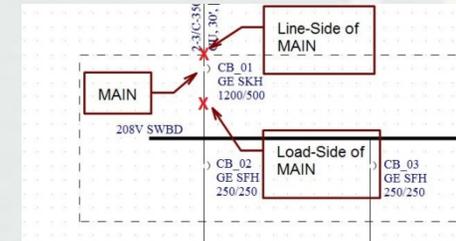
## EasyPower

- **Arc Flash Hazard Analysis Software**
  - Performs complex electrical engineering tasks in minutes
  - Eliminates dangerous and costly electrical hazards
  - Complies with NEC rules and ANSI standards

 <b>WARNING</b>	
Arc Flash and Shock Hazard Appropriate PPE Required	
0' - 5"	Flash Hazard Boundary
0.2	cal/cm <sup>2</sup> Flash Hazard at 18 Inches
#0	PPE Level
	Non-melting, flammable materials
0.208	kV Shock Hazard when cover is removed
0' - 0"	Limited Approach
0' - 0"	Restricted Approach - Class 00 Voltage Gloves
0' - 0"	Prohibited Approach - Class 00 Voltage Gloves
Equipment Name: GALLEY FRYER 2 (Fed by: CB_24) Date: January 2015	

## PipeFlow

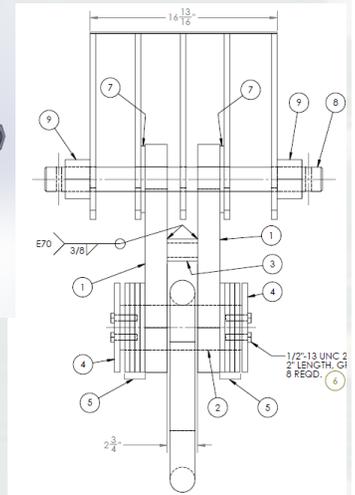
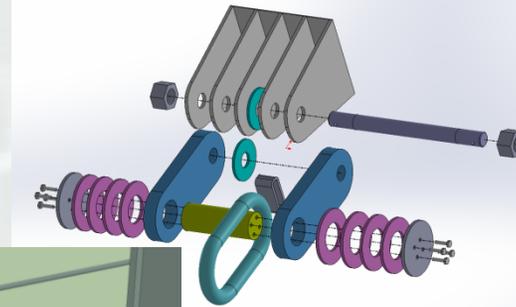
- **Flow Rate & Pressure Drop Calculations Software**
  - Design efficient fluid systems
  - Open & closed loop systems
  - Calculates flows, pressures, friction losses, etc,



# SOLIDWORKS

## Capabilities –

- **Improves design clarity** – 3D aspect for complex builds
- **Decreases design time** – Visually detect problems between parts
- **Flattened Sheet Metal** – can use flat pattern to communicate ideas.
- **Weights Estimations** – weight of every component is known
- **Stress Testing** – easily shows if part is within Factor of Safety
- **Center of Gravity** – balanced builds
- **Fluid dynamic testing**
- **Weld information**



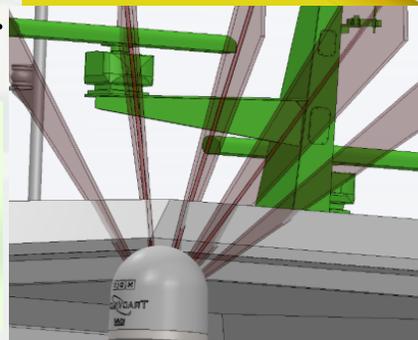
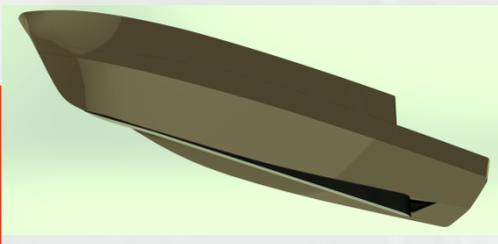
# SOLIDWORKS

## Delivers -

- **Animation/Simulation/Video** - motion of design can be observed.
- **Virtual Walkthroughs** - to show how the completed build will look once finished.
- **Drawings/BOM's**
- **Photo realistic renders**

## Possibilities -

- 3-D mapped environments
- Early optimization of design
- Safety issues detected better



# DISCUSSIONS/QUESTIONS

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