

# NSRP | National Shipbuilding Research Program

## Power Panel & Breaker Commonality

Project Lead: Rickey DeLoge  
Company: General Dynamics Bath Iron Works  
Work: (207) 442-4153

12/07/16  
Jacksonville, FL



DISTRIBUTION STATEMENT A: Approved for Public Release

# Proposed Project Team

- Lead Yard:
  - General Dynamics Bath Iron Works
- Participants:
  - General Dynamics Electric Boat
- Shock & Vibration Laboratory:
  - Aero Nav Laboratories, Inc.
- Vendors:
  - TBD



# Project Summary

- Overview:
  - Many Variants of Power Panels & Breakers
  - Many Different Applications
  - Multiple Ship Programs
- Goals:
  - Identify Existing Opportunities for Consolidation
  - Reduce the Number of Variants
  - Drive **Commonality** into Ship Designs



# Project Benefits of Commonality

- Inventory
  - Reduce Inventory & Spare Parts
  - Reduce Inventory Carrying Costs
  - Reduce Configuration Management Costs
    - Reduce Large Parts List
    - Reduce Number of Technical Manuals
  - Improve Inventory Control
- Reduce Maintenance Costs
- Reduce Training
- Enable Simpler Designs
- Improve Affordability



# Project Objectives

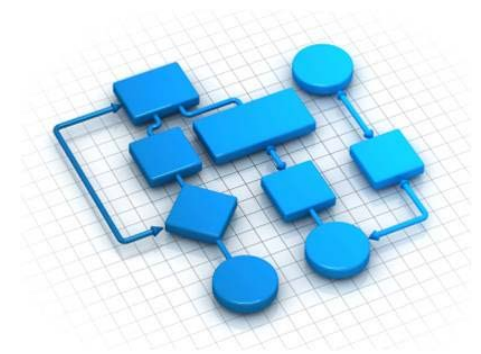
- Create Power Panel and Breaker Master List 0% Complete
- Research & Determine Requirements 0% Complete
- Research Applicable Products 0% Complete
- Research Product Opportunity 0% Complete
- Breaker Shock & Vibration Testing Procedure 0% Complete
  - If Determined Necessary
- Design, Build, & Test Demonstrator 0% Complete
  - If Determined Necessary
- Generate Report and Presentation 0% Complete



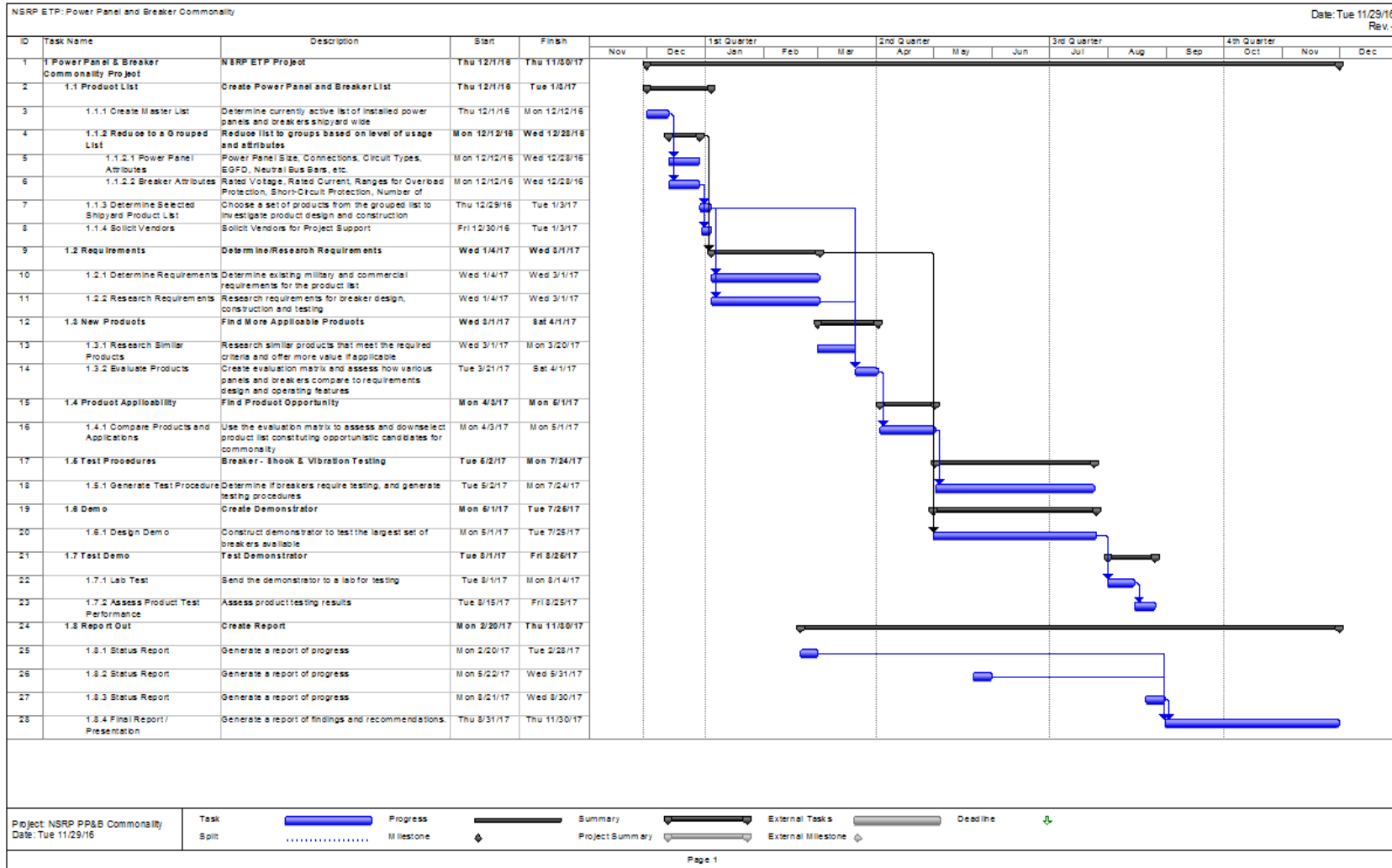


# Project Methods

- General Research & Investigation
- Evaluation of Products & Requirements
- Tools for Project Organization & Data Assessment
  - Microsoft Office Suite
  - Non-Proprietary Business Tools
- Tools for Components & Demonstrator Unit
  - Standard Manufacturing Methods
- Military Specifications & Testing Standards of Interest
  - MIL-S-901D: Shock Testing
  - MIL-STD-167 1A Type I: Environmental Vibration Testing
  - MIL-DTL-23928G: Panels, Electrical, Power Distribution & Manual Transfer, Circuit Breaker Type (ALB, NLB, AQB, NQB)
  - IEEE 45: Electrical Installations on Shipboard
  - UL 489: Standard for Safety – Molded Case Circuit Breakers



# Project Schedule







# Project Schedule Events

- Project Kickoff:
  - Wednesday, December 7<sup>th</sup>, 2016
- Upcoming:
  - Determine Active List of Power Panels and Breakers
  - Down Select List to Groups Based on Level of Usage and Selected Attributes
  - Choose a Set of Products from the Grouped List to Investigate Product Opportunity
  - Begin Researching Military/Commercial Requirements for the Down Selected Set of Products



"A good Navy is not a provocation to war.  
It is the surest guarantee of peace."

-- President Theodore Roosevelt



# Power Panel & Breaker Commonality

NSRP ETP

