

Meeting Minutes NSRP Joint Panel Meeting Workforce Development and Electrical Technologies Panel Green Bay, Wisconsin August 24-25, 2016

Meeting Date: August 24-25 2016

Location: Radisson Hotel and Conference Center Green Bay

Meeting Theme: Innovation

Meeting Focus: Technology Transfer & Training Methods

Meeting Summary:

The NSRP Electrical Technologies Panel (ETP) and Workforce Development Panel held a Joint Panel Meeting at the Radisson Hotel and Conference Center Green Bay, Wisconsin. The primary focus of the meeting was round table collaboration across panels, and updates on our current projects.

Wednesday August 24, 2016

Jason Farmer ETP Panel Chair convened the meeting with introductions from all members in attendance and those attending via teleconference.

Nick Laney ATI presented the NSRP update and overview. Nick reviewed the SCRA Mission statement, how the panels function, working within the framework of ATI and the Executive Control Board. Nick reviewed the various NSRP Panels and current Panel Leadership. He discussed time frames R&D Project Solicitations, RA Announcements and Panel Project Solicitations. He also communicated information related to changes within the ATI organization.

Jason Farmer presented the ETP Chairs report. Jason's presentation covered ETP mission Statement, Focus Areas, ETP Panel Activities, including current projects and past and future ETP Panel meetings

Michael Tenny of Stage-Gate International gave a presentation on Innovation Framework. Stage-Gate specializes in providing client solutions that drive value through innovation and new product development. The approach provides the ability to implement and manage change throughout large and small organizations, and create structures and solutions that generate sustainable performance improvement.

Peter Gaechter, from Hilti gave a presentation on Hilti's Electrical Installation Solutions. Peter presented information on Hilti's Fast Fixing Installation System which allows for faster design, and installation of preassembled equipment. Hilti's FFS also eliminates welding, paint repair, and consequently improves employee safety

Lauren Hamburg NNSY gave a presentation on Augmented Reality. **AR** is a live direct or indirect view of a physical, real-world environment whose elements are **augmented** (or supplemented) by a computer-generated sensory input such as sound, video, graphics or GPS data. Some of the uses for AR in shipbuilding are inspection, training, workflow management, and improved safety. AR provides great benefit and innovation opportunities for shipbuilding.



After Lunch panel members held a roundtable discussion on Training Methods for Electrical Processes. Various training methods were presented and the group discussed anticipated effectiveness of each method. Roundtable discussion also included Best Practice for Technology Transfer. Discussions centered around the best way to insure that Panels efficiently communicate lessons learned related to technology, information, specification, and new processes.

Jason Farmer wrapped up day one with a review of the agenda for day two.
Meeting was adjourned at 5:00

Thursday August 25,2016

Day two started with an 8:00 AM bus departure for a planned tour of Marinette Marine. Members from both panels were guided through the entire process for LCS production from hull fabrication through placement of systems within the vessel. Members experienced process areas for steel fabrication, painting and construction/assembly.

At 1:00 PM the Panel Breakout Sessions began.

The ETP Panel meeting commenced with introductions of all ETP panel members in attendance and those attending via teleconference.

Jason Farmer reviewed ETP Panel Business a discussion of recent panel activities and discussions around the upcoming Fall meeting in Jacksonville, Florida in the November- December timeframe.

Dan Morris, KitCo Fiber Optics presented information on Enhanced Fiber Optic Testing for Cost Reduction. The objective of the project is to investigate the potential for fiber optic testing enhancement for cost reduction by evaluating the use of an Optical Time Domain Reflectometer (OTDR) to replace the Optical Loss Test Set (OLTS) and Optical Return Loss Meter (ORLM) in performance of Mil-STD-2042-6B required testing for shipboard installations. If determined feasible, the OTDR could be used in place of the OLTS and ORLM to perform multiple tests at the same time that are currently performed separately and eliminate the need for several tests that must be performed at various stages during the construction process. In addition, the OTDR test results would provide enhanced data that is not currently captured resulting in reduced time for system acceptance and identification of potential faults for expedited troubleshooting and repair during construction.

Darren Brick, Ingalls Shipbuilding presented information on his project for Bonding and Grounding. The objective of the project is to explore tools, technologies, and methodologies for accomplishing quality bonding and grounding results aboard Navy ships at a lower cost and in addition, explore alternative approaches for eliminating the need for providing bonding and grounding if at all possible. Ultimately performing the intent of MIL-STD 1310 at the lowest possible cost.



Gary Weiss of DRS Power and Control Technologies presented information on Switchboard Retrofits. Gary's presentation covered the challenges of retrofitting newer breakers as older breakers become obsolete. There are many considerations such as physical size, matching the existing bus, required controls, shock qualification, and required protective relays to name a few.

Rick Worth NSWCPD presented information on Acoustic Sensing Through Energized Electrical Enclosures (Acoustic Arc Detection). The goal of the project is technology insertion of handheld acoustic detectors capable of sensing air-borne frequencies (~40 kHz) which is unique to early electrical component failure in energized electrical switchboards operating at 440VAC up to 13,800VAC on the CVN platform. The project will establish baseline responses for different electrical loads placed on land-based electrical distribution panels. Current inspection procedures for ship electrical switchboards are done annually and do not afford any real time monitoring of these critical components while the propulsion plant equipment is energized. Acoustic Arc Detection could provide early detection of electrical faults while underway to prevent component failure (fire) and improve sailor safety.

Terry Mannion STi Marine presented information on Penetration Seals and Cable Transits for Fire Rated Bulkheads and Decks. Terry reviewed the history of cable transits. The advantages and disadvantages of Multi Cable Transits, and emerging cable transit technology such as Self Adjusting and Self Sealing Cable Transits.

The ETP Panel held a roundtable discussion on Electrical Standards within shipbuilding. Conversation shifted to some of the existing challenges such as Breaker and Enclosure commonality across platforms, USN pain points with Electrical Maintenance, and problems with counterfeit parts.

Our planned visit to BAE in Jacksonville opened conversation related to issues within USN repair ship yards in comparison to shipyards completing new construction.

Action Items:

- Follow up with BAE Jacksonville
- Discussion topic follow-up
 - Pain Points for Electrical Maintenance on USN Ships
 - Any Issue with Counterfeit Parts
 - Cable Insulation Damage

