

Meeting Report  
ABYC Electrical Propulsion Project Technical Subcommittee  
San Diego, California  
October 31- November 1, 2007

1. Action Items from previous meeting
  - Need to define “essential services” for the new standards. Also need a definition of “ungrounded systems” (Isolated from ground) from NEC.
  - Need to discuss “overcurrent protection” and “current limited” as compared to ABS and Lloyds.
  - Scope will include distribution electrical service up to 600 VAC.
2. S-31, Environmental Considerations for Distributed Power System
  - This standard is still a committee draft.
  - The standard needs to be reviewed by this subcommittee.
  - Scope of this standard need to change to exclude propulsion systems.
3. A-32, AC Power Conversion Systems
  - This standard is still a committee draft.
  - This standard will have direct applicability to the electrical propulsion standard.
  - Both this standard and S-31 was distributed to the S/C for comments.
4. ABS Part 4, Article 8, was sent to all S/C members. Document to be reviewed and needed information extracted for this standard. SAE J1673 will probably not be used.
5. Topics of interest for the Electric Propulsion standard
  - Power cables (versus control and signal cables) – Control, signal and gage cables have to be exempted from E-11. These will be unfused. Be mindful of CFR requirements. Standard should include cable routing and protection. The cables should be routed in metallic conduit and shielded – cables should be physically protected. The standard will also address sizing, materials, bus bars, clearances from machinery, access to components, labeling, bundling, branch and feeder circuits have protection. All power cables are considered to have a continuous load for the purpose of conduit sizing. NEC tables for cable size will be included. Stating NEC rules for use of paralleling conductors. (Nothing smaller than 4/0). Shielding (from EMI) requirements will be defined.
  - Ground fault monitoring – Monitoring system shall be provided to detect high level DC impedance in excess of 200 ohms per volt.
  - Current limiting device – Place information on nameplate that states the component is self limited. This goes on all power supply components.
  - Lock out/tag out program – will be included in the standard. This information is a requirement for system manufacturer and is to be included in the owners manual.
  - Master disconnect – For battery and genset. Need to be able to disconnect both the entire battery bank and the smaller sets of batteries (48v or less) for servicing.
  - Emergency disconnect – Have a readily accessible battery switch able to handle short circuit current.
  - Emergency systems – alarms, lighting, fire detection, fire suppression, dewatering. Run it off a battery bank or not? Part of the emergency shut down or not?
  - Separation requirements for cables and terminal strips – Will recommend and use the UL 508 clearances. Australia has separation requirements that appear to be more conservative.
  - Required instrumentation – Voltmeter? Need an indication for normal operation. Need a battery fuel monitor or a monitor for stored energy.
  - Cable sizing and requirement – SAE requires high voltage cable to be orange. Need a better way. Need a system for cable identification. Proposing orange or carry an orange stripe.
6. The next meeting of the ABYC Electrical Propulsion PTC subcommittee was tentatively set for February 16-17 or 26-27, 2008 in Orlando, FL.

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