



Pitfalls of Revising National Standards – A Portable Instrument Standard

27 March 2017

Meredith Wood

Naval Surface Warfare Center, Carderock Division

Radiation Technology Group, Code 632

West Bethesda, MD



Personal Background

- Accepted for the American Society for Engineering Education SMART scholarship
- Interned at NSWCCD summer 2015
- Bachelor of Science in Nuclear Engineering from University of Michigan
- Began NSWCCD work in June 2016, joined ANSI 42.17 AC Revision Group in July 2016





ANSI 42.17AC

- 42.17A: Performance Specifications for Health Physics Instrumentation – Portable Instrumentation for Use in Normal Environmental Conditions
- 42.17C: Performance Specifications for Health Physics Instrumentation – Portable Instrumentation for Use in Extreme Environmental Conditions



ANSI 42.17AC

- Revision began in February 2014 to combine 42.17A and 42.17C
- Group comprised of commercial and government personnel
- Update to reflect modern characteristics and test methods



Difficulties



Difficulties: Combination of Standards

- Redundant information difficult to identify
- Additional information extends length of document
- New organizational structure needed
- Conflicting requirements for same topic



Difficulties: Outdated Information

- Test methodologies covered outdated processes.
- Requirements no longer apply
- Needed to work in concurrence with current military and industrial standards
- Many external references no longer valid.



Difficulties: Location/Communication

- Different locations for each member of group
- Difficult to find common time for conferencing



Difficulties: Conflict of Interest

- Government vs. industry needs
- Theoretical robustness vs. application practicality
- Example: neutron energy dependence
 - Acceptable reference sources posed discrepancy.
 - Compromised to require comparison to known response curves for a variety of common sources



Difficulties: Specialization

- Knowledge specialization in group can lead to unnecessarily complex requirements
- Specialist revision difficult to verify (if necessary)
- Need simplicity of specification for applications



Difficulties: Advice

- Formulate compromise requirements
- Schedule meetings far in advance
- Agree to meet at national conferences
- Group should contain multiple subject matter experts
- Compromise between specificity and universality



Positive Aspects



Positive Aspects: Combination of Standards

- Creates a universal standard instead of situational standards
- Improves records retention
- Ensures no contradictory requirements
- Streamlined for easier use



Positive Aspects: Many Perspectives

- Wide range of technical information
- Can assess current industry and military trends
- Ensures standard remains general for all applications



Conclusion

- Updating and combining standards establishes relevance and utility
- Finding compromises is important
- Groups should contain multiple subject matter experts
- Good communication is key to success of standard
- Plan meetings far in advance or at national conferences



Questions?