



IEEE 650 PAR Status

∞ Working group

∞ Dennis Dellinger Ametek Solidstate Controls

∞ Kenneth Caldwell Duke Energy, Catawba Station

∞ Riley Schum Wyle Labs, Huntsville

∞ Craig Irish NLI, Chelmsford

∞ Dave Harris MPR Associates

∞ L.E. (Bud) Ferry Westinghouse

∞ Wells Fargo SCE, San Onofre Nuclear

Purpose of standard IEEE 650

- ∞ To qualify inverters, battery chargers and ancillary equipment to meet the requirements for 1-E equipment.
- ∞ It is specific to mild environments outside of the containment
- ∞ Addresses potential electrical, mechanical and environmental extremes
- ∞ To prove that the battery chargers and inverters perform their safety function under specified service conditions



Major changes to existing std.

∞ **Abstract - Add, "These methods may also be applied to qualify similar electronic equipment for use in mild environment applications outside containment, where specific standards for such equipment are not available."**

Major changes to existing std.

- ∞ **Definitions - Under definition of components, replace "transistors" with "semiconductors" and replace "springs" with "electromechanical devices".**
- ∞ **Delete block in flow chart labeled "Stress Test and step (5.3.1.8)" in procedure. This type of test is not typically performed twice on other equipment not in containment.**

Major changes to existing std.

- ∞ Change mild environment radiation dose to $1E 10^3$ Rads from $1E 10^4$
- ∞ Add "Radiation tolerance levels must be verified by the manufacturer / qualifier."
- ∞ For surge suppressors add transzorbs, MOV's, etc
- ∞ Add a section (5.2.2.2.11) for "Motors, Pumps, and/or Other Materials"



Plans for completion

- ∞ Complete revisions and corrections by
- ∞ December 2004
- ∞ Submit for ballot early 2005