



NFPA 99 Update

There are major changes on the way for organizations involved in the design and construction of Health Care Facilities. The 2012 edition of NFPA 99 was officially released this fall, and for the first time it will carry the full weight of a Code as opposed to just a standard. Among the many revisions to the Electrical Systems Chapter, one of the most impactful is related to the determination of “wet procedure locations”. Confusion and misinformation has circulated around this topic for years. The current standard (2005) provides a vague definition of wet [procedure] locations and places the responsibility for determination on the governing body of the facility. The intention was that those individuals with firsthand knowledge of medical procedures themselves should apply the definition. However, it offers no guidance on how to properly evaluate and apply this definition, nor does it require any documented justification. Consequently, without any true mandate, many facilities have felt it unnecessary to undertake a serious review of the relevant risks and simply deemed all such areas as “dry”. In many instances, this decision is made solely by executive staff without consultation of other relevant stakeholders.

The reality is that many critical care areas, including operating, trauma, ICU, and labor and delivery rooms host medical procedures which routinely result in substantial amounts of fluids contacting both the patient and attending staff. Blood and other bodily fluids, antiseptics and sanitizers, conductive gels, and saline irrigation all reduce the body’s natural electrical resistance and can create a path for dangerous electrical current to flow through the body in the event that a ground fault develops on nearby line powered electro-medical equipment. These facts are supported by an independent study commissioned by the NFPA and the Fire Protection Research Council. The subsequent report, entitled “Evaluation of Health Care Operating Rooms as Wet/Dry Locations”¹ provides both quantitative and qualitative data substantiating this conclusion.

The new edition of NFPA 99 attempts to address some of the ambiguity of the previous version and ensure all newly constructed or renovated areas are thoroughly evaluated by inclusion of a new section.

“6.3.2.2.8.4 Operating rooms shall be considered to be a wet procedure location, unless a risk assessment conducted by the health care governing body determines otherwise.”²*

This new section acknowledges that, at least in the case of operating rooms, wet procedures are the norm. It does not change the definition, nor does it take away responsibility from the individual facility. Individual OR’s can be opted out of this designation by the facility through the use of a documented risk assessment process to determine the relative probability of fluid release during a procedure. Although this section specifically addresses operating rooms because of their very high probability of fluid release, it does not preclude the classification of other critical care areas as “wet” using the same process.

In addition, the upcoming revision will include guidance on which stakeholders, beyond just administrators, should have a voice in this review. Annex A includes the following section.

“A.6.3.2.2.8.4 In conducting a risk assessment, the health care governing body should consult with all relevant parties, including, but not limited to, clinicians, biomedical engineering staff, and facility safety engineering staff.”²

This ensures that those individuals with intimate knowledge of the procedures themselves are able to take part in this critical decision. During this assessment it is important to consider not only the intended use of particular rooms, but also the possible alternate uses it may eventually be called on to support.

It is especially important for electrical system designers and specifying/consulting engineers to become familiar with these new requirements, as areas classified as wet procedure locations require special protection against electrical ground fault hazards. This protection can be in the form of GFCI devices if the system can tolerate loss of power in the event of a fault. However, any loss of power in critical patient care areas is generally not tolerable, and therefore, isolated power systems are the preferred choice of protective system.

¹ “Evaluation of Health Care Operating Rooms as Wet/Dry Locations”, Melissa K. Chernovsky, Ph.D., Joel E. Sipe, Ph.D., Russell A. Ogle, Ph.D., P.E., CSP, Exponent, Inc., Bowie, Maryland, October, 2010.

² “NFPA 99 – Health Care Facilities Code – 2012 Edition”, National Fire Protection Agency, Quincy, MA, September, 2011.