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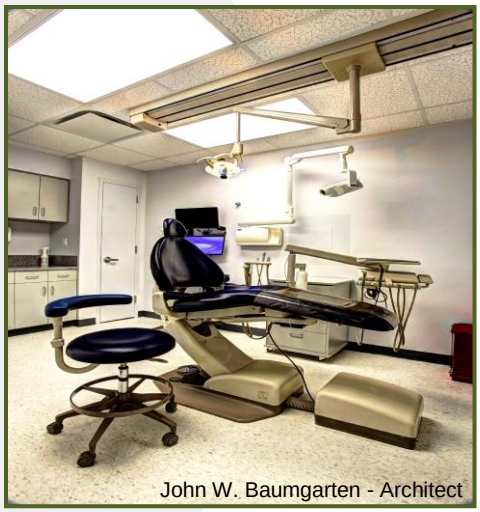
Emergency Power – Your Facility's Life Line

In general terms, your facility's Essential Electrical System (EES) consists of a stand-by generator power source and the branch circuits which deliver emergency power where it is needed. However, in real terms, an EES is much more than its technical definition. It is the life line your residents and staff depend on to keep critical systems and equipment operating during an emergency.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Emergency power systems in health facilities are governed by the National Fire Protection Association (NFPA) Code 99 entitled "Health Facilities". Per NFPA 99, facilities providing critical care are required to have a Type I EES. This, of course, includes hospitals but also includes nursing facilities with respiratory units. A Type I EES divides the emergency power system into a number of branches, each connected to an automatic transfer switch or ATS. The function of each ATS is to "switch" a given branch from normal to emergency power. The life safety branch, powers emergency & exit lighting, fire alarm & nurse call systems, emergency communication systems, etc. The equipment branch serves a facility's boiler plant, walk-in refrigeration and similar systems. The critical care branch powers vent units and other high risk treatment areas. By creating separate EES branches, the risk of failure of any one branch is reduced. This multi-branch configuration also allows for load-shedding whereby the total load on the generator can be temporarily reduced if there is a danger of an overload. Even older hospitals have a Type I EES. However, most nursing homes that are more than ten years old do not. Therefore, when vent units first appeared in nursing homes 20 years ago, it was customary to apply to Health Departments for a waiver regarding a Type I EES. In most cases, these waivers were granted.

Given the growth of on-site vent units in nursing facilities, these waivers are no longer being allowed. Our office is currently working on a number of EES retrofits in nursing facilities which are adding and/or expanding vent units. Our first concern is with the condition and capacity of the existing emergency generator. We must determine if there is sufficient surplus emergency power to serve the new or expanded loads. In other cases, the generator may be at or near the end of its useful life. The facility may also wish to increase the capacity of the generator (or add a second generator) to handle the entire building, not just the code mandated systems & equipment. This is becoming a more common scenario given today's concerns over terrorism and patterns of severe weather like Super-Storm Sandy

Once the generator issue is resolved, then a new critical branch is run from a new transfer switch to circuit breaker panels serving the dialysis and/or vent units. Ancillary supporting systems such as water treatment and medical gas equipment must also be connected to the new branch. A certain amount of local rewiring is usually necessary, to insure that there is no "mixing" of loads across branches.