



THE NESC AND RESILIENCY

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While utilities have been talking about reliability and redundancy for years, more recently they have begun to talk about resiliency. One reason for the increased interest in resiliency is that large storms seem to be the “new norm,” and there is more concern with how resilient a system will be during and right after these storms, rather than simply how reliable or redundant the system is in the absence of storms.

Currently, there is no uniform and universal standard for resiliency that cover all utilities. The Rural Utilities Service (RUS) has standards for the construction of distribution lines. For this reason, co-ops that are seeking RUS funding build to these standards.

Many other utilities, especially larger ones, have their own design standards that take resiliency into account. For example: “This is how we build vertical construction at this voltage.” These standards have been developed based on internal knowledge that these utilities have built up over the years and continue to accumulate over time. However, these are very individualized and are usually created in response to each utility’s environment and geographic location, such as what types of strong storms they may experience. In sum, each utility has its own design standards. There is no universal resiliency standard when it comes to issues such as construction, voltages, or equipment.

Smaller utilities that are not large enough to have their own design standards tend to either follow the RUS standards that were designed for co-ops, or occasionally refer to the National Electrical Safety Code (NESC) for guidance in this area, in combination with their own internal knowledge.

Currently, as is evident from its name, the NESC is primarily a safety code. However, the NESC is beginning to see the potential to expand the Code such that it could also become a resiliency code. In fact, the role that

NESC plays in utility resiliency is becoming greater every cycle. According to one NESC committee member, some committee members are starting to look at what the NESC should become in the future, and these members believe that the NESC should at least address some parts of the Code that lend themselves to be, maybe not a full, but at least a partial, design code. This could include construction (such as strength and loading of overhead lines due to wind and ice), the way clearances are handled, the way underground is built, etc. While these topics are covered in the NESC from a safety standpoint, some members of the NESC committee believe that these are also resiliency issues and, therefore, some parts of the NESC are already resiliency codes in one form or another. In fact, as noted earlier, some utilities are already using the NESC for resiliency purposes.

Last year, the NESC formally began studying resiliency. One idea that was brought up was the concept of “fracturing” utility systems, such that, instead of a whole system going down after a storm, it could be broken up into a number of small microgrids. There were also discussions on the role that solar, wind, and other distributed generation could play in this, as well as the role of the smart grid to make it all work. So, instead of relying solely on large transmission lines, a utility could rely on itself for a period of time.

Another area of consideration is substations. The current Code focuses on steps that utilities need to take to protect the public from substations (e.g.: specifications for chain link fences) - a safety code. However, it could be expanded to focus on steps that utilities need to take to protect substations from the public (eg: vandalism, etc.) - a resiliency code.

Of course, any efforts in the direction of resiliency would need to take individual circumstances into account. A lot of utilities, for example, can say, “We don’t have superstorms, our systems are resilient enough, and we don’t have bad outages statistics, so why should we be required to build to levels that we don’t need?” And, of course, these are valid comments.



Committee members are hoping to have an NESC summit in 2015 to get people together to review the document and decide what it should look like. In so doing, they want the process to be as inclusive as possible. For example, as a way to get the PUCs more active, the NESC has reached out to the National Association of Regulatory Utility Commissioners (NARUC). It has also reached out to the solar and wind organizations.

As many committee members see it, moving in the direction of expanding the NESC from just a safety code to also a resiliency code is important. The danger of the NESC not getting into this space, they believe, is that someone else will - such as an agency of the Federal government, which could possibly impose a universal "one size fits all" resiliency standard on all utilities.

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