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Creating Consensus in the Standards Process

A Primer for NEMA Members on Types of Standards

Because about half of NEMA's activity is technical and most of it revolves around codes and standards, NEMA staff is frequently consulted on types of codes and standards NEMA could write or participate in, processes involved, advantages and disadvantages of each, and many other related questions. While the topic could be easily developed into a PhD thesis, we'll attempt here to provide a primer for NEMA members that hopefully help in their decision making process.

Codes vs. Standards
A first major distinction we have to make is between codes and standards. While the process of developing them may be similar, the outcome cannot be more different.

A standard is typically a voluntary agreement between members of a certain group of stakeholders regarding the construction or performance of a product or a process. The goal when starting a product or safety standardization process is usually to inspire confidence in a market segment about a type of product or process. Some form of compatibility or comparability between products made by different makers is the main goal of the exercise.

A code could, in principle, be the same thing as a standard content-wise; however, its goal is to lay down the law of the land! Literally.

Here is a good example: ASHRAE 90.1 *Energy Standard for Buildings Except Low-Rise Residential Buildings* is a voluntary standard used extensively in the construction business. The *International Energy Conservation Code* developed by the International Code Council contains very similar requirements. However, once adopted by local jurisdictions (states, municipalities, etc.), it becomes the law governing all construction business in the jurisdiction.

Standardization Consensus
Now, let's take a look at the process leading to a code or standard publication. In most cases that NEMA members would be involved with, a consensus of relevant stakeholders would be required. This usually means that some predetermined majority of participating stakeholders need to agree to move forward. Defining exactly what this actually means is a job usually done at the beginning of a standardization process. Depending of the nature of the activity, there could be different formulations for the consensus requirements. The simplest is "greater than 50 percent" of all the members. Another popular option is "greater than 50 percent of all who voted." Probably, everybody is familiar with the supermajority requirement that rules now in the U.S. Senate and is blamed for the political stalemate there. It requires two-thirds of the members to vote for approval.

The same organization may actually have several consensus rules depending on the proposal types. Administrative changes, for instance, may need less stringent of a majority than say, approval of a standard in cases NEMA members are frequently involved with. Safety standards, for instance, could require a higher consensus level than product performance or design documents.

As far as consensus for standards goes, there are cases when it's not necessary. Let's say a dominant player in a market segment develops a product that becomes the de-facto standard for the industry. If this player decides that it's in his or her interest to make the related documentation public, the company develops and maintains the document, which is essentially a non-consensus standard. Government occasionally develops standards without the benefit of consensus between interested stakeholders. There's usually some form of emergency justifying this.

Most standards however are generated through some form of consensus developed between interested stakeholders. In NEMA's case for instance the stakeholders are manufacturers of a type of product that decided at some point in the evolution of a product that it's in their interest to standardize some of its geometrical forms or functionalities for the purpose of interoperability or ease of comparison between different product designs or makes. Usually, a group of representatives of the involved companies are hammering down the technical details until a compromise acceptable to most is reached. That document is then submitted for a formal NEMA Product Section ballot. Comments received through the ballot process are addressed and a final compromise is reached before the standard is approved. Note that consensus doesn't mean unanimity. There will be sometimes winners and losers. However, a good consensus building process brings all interested parties together and the compromise reached is usually evenhanded.

Stakeholders
There is one major drawback in a NEMA standard—it represents, in general, only one class of stakeholders: the manufacturers. There is nothing wrong with it in many cases, but to be fair and comprehensive, other major stakeholders should have a chance to opine. Major categories of interested stakeholders left out in a NEMA standard developing process are users and other "general interest" parties such as Nationally Recognized Testing Laboratories, government, academia, etc. To get all involved, a more comprehensive standard development process is needed.

ANSI Standards Process
ANSI, the American National Standards Institute, has developed such a process. It establishes three basic principles that, properly implemented, ensure a quality standard at the end of it. The three principles are balance, fairness, and openness.

Balance is simply what it means: no stakeholder group should dominate the others. For normal performance standards, for instance, this means no group should be larger than 50 percent. For safety standards, the requirement is a bit more stringent: no stakeholder group should be bigger than one-third of the total. Members of the standard development group should declare from the beginning their stakeholder class as agreed by the representative group.

Fairness is a more elaborate concept, but essentially it means that procedures need to be put in place that ensure any dissenting voice is heard and taken into consideration. Again, consensus rules do not guarantee unanimity, but the ANSI process bends backwards to make sure that any dissenting opinion including those generated by non-members are reviewed and taken into consideration.

Openness is the third leg of the ANSI process that insures that any interested party, even ones not involved at all in the standard development process, are informed about the progress of the standard and are invited to comment in every relevant approval stage.

ANSI doesn't develop standards; ANSI is the quality inspector at the end of the line that looks at the way a standard has been developed. It puts the mark of quality on the end product signifying it passed its minimum level of scrutiny (as far as the standardization process was conducted). ANSI goes substantially further though in ensuring the quality of the process. Not everybody could draft an ANSI standard. Only ANSI-accredited standards developers (ASD) have that right. To be one, the candidate has to demonstrate deep knowledge of the ANSI process. In order to make sure the ASD keeps up with the latest changes in the *ANSI Essential Requirements*, ANSI re-certifies annually any committee responsible for developing or maintaining ANSI-approved standards.

They go to a greater length of review of how ASDs performed during an exhaustive audit of selected projects, once every 5 years in NEMA's case. Failing an audit could mean the withdrawal of the accreditation.

Committee vs. Canvass
NEMA is an ANSI-accredited standards developer, and NEMA staff maintains many ANSI standard development groups. However, NEMA cannot develop ANSI standards by itself since all of its members belong to only one stakeholder category: manufacturers. There are two ways around this conundrum:

- Set up and staff independent ANSI committees with a properly balanced group of stakeholders. Examples: ANSI C8 for wire and cable, ANSI C12 for transformers, ANSI C18 for batteries. Committees are usually responsible to develop a number of standards related to the committee's purview. NEMA usually has the committee's secretariat and program managers serve as secretaries.
- Create an ANSI Canvass group typically responsible for the development and maintenance of one standard. Again, NEMA assumes the secretariat and staffs it. All ANSI/NEMA standards are developed this way.

There are no major differences in the operating procedures between the two.

In-house vs. Committee Drafting
With a new standard, NEMA members need to consider who is drafting it. There are two options with different pros and cons:

- Initially develop the standard as a NEMA standard and then convene an ANSI Canvass group or submit to an existing ANSI Committee to approve it. A major benefit for NEMA members is that the process helps form a NEMA consensus that could be helpful in future battles against other stakeholders' interests in the ANSI approval process. This is particularly beneficial if the standard addresses a novel product or technology. Another not insignificant benefit is speed. With a relatively narrow perspective, manufacturers could reach consensus faster than taking all viewpoints right off the bat.
- Convene the canvass or committee, and draft the standard from the beginning addressing all stakeholders concerns. By its very nature, the process is typically reaching consensus after longer debates and deliberations. In cases of a new canvass or committee, recruiting time adds considerably to the project duration. The benefit is that it typically avoids surprises come ballot time.

A recent example of the first kind of approach is illustrative.

A group of flashlight manufacturers asked NEMA to help them develop an ANSI standard for a totally non-standardized market. Using the approach described above, the group developed their standard "in-house," helped with the recruitment of other stakeholder classes for the canvass, and addressed their concern via ballot. The process took about two and a half years, out of which two were spent figuring out the industry's consensus on the issues at hand. Today, four years later, the icons the ANSI/NEMA FL1 standard defines for a flashlight's main performances (i.e., beam distance, run time, etc.) are on almost all flashlight packages sold by reputable retailers. This helps customers make the right choice when looking for a certain performance.

ANSI is not the only way of reaching consensus on codes and standards. Getting directly involved in other organizations' codes and standards development—those not using ANSI's process—gave NEMA confidence in the validity of ANSI's process. NEMA's own consensus process closely follows ANSI's. It has one formal approval level—the Codes and Standards Committee—above the product section's. It ensures that all NEMA stakeholders other than the original product manufacturers were involved, users' needs were considered, and the process followed all NEMA rules. The result is hundreds and hundreds of market-respected standards.

Andrei Moldoveanu