By Rebecca Quinn, CFM

How often are you frustrated because "the best answer" isn't precisely in the regulations and building codes? For us flood folks, this usually happens when someone is working on an existing building, but the work does not constitute Substantial Improvement or repair and restoration of Substantial Damage. Wouldn't we all like to see people consider at least some options to reduce vulnerability to future flooding, even if full compliance isn't required?

For buildings built before a community adopted its first floodplain management regulations, owners can pretty much do what they want if the work doesn't trigger the 50 percent threshold for SI/SD (although keep in mind that some communities adopt a cumulative Substantial Improvement provision).

Of course, buildings issued permits after regulations were adopted are supposed to be built in compliance with the regulations, and all subsequent work on compliant buildings must be performed such that it does not jeopardize the elements that were required for compliance. For example, suppose a building was required to be elevated but did not initially have walls enclosing the area underneath. If the owner subsequently decides to enclose the area, then regardless of cost, all work performed comply with the requirements for enclosures, including limiting use of the enclosure to parking of vehicles, storage, and building access.

All across the country communities experience hazard events such as floods, tornados, hurricanes, nor'easters, ice storms, and blizzards. Those events can cause widespread or localized power outages. And sometimes those power outages can last for days or weeks. That's hard on residents at any time, but more so during peak summer heat or the depths of winter.

You've probably noticed lots of advertising for the growth industry that manufactures, sells, and installs "whole house emergency generators."

My high school English composition teacher would probably object long about now. What do those paragraphs have to do with each other? Well, let's consider homeowners in Special Flood Hazard Areas who decide it's time to buy a whole house emergency generator. The question for local officials then becomes – do generators have to be elevated?

On the face of it, the answer might seem straightforward:

- For older homes built before adoption of floodplain management regulations, no, the emergency generator doesn't have to be elevated unless it is part of a larger project that is determined to be Substantial Improvement or restoration of Substantial Damage.

- For homes built in compliance, yes, the emergency generator has to be elevated, otherwise it would make the home non-compliant with the requirement of the original permit that utilities and equipment have to be elevated.

Recently I was asked my opinion about whether a community can require emergency generators to be elevated – regardless of when the building was built.

I continue to be mystified why anyone would want to put an emergency generator below the BFE, even if the rules allow it. Especially because we know that when a big one comes, Mother Nature rarely stops the rising water precisely at the BFE! What good is an emergency generator if it's been flooded out?

Because I was asked for my opinion, I decided to give the "best answer," not just an answer based on a narrow reading of the NFIP rules. My opinion is that emergency generators should be elevated – every single time one is installed in an SFHA.

Now, let's look at whether there's a way to require elevation of emergency generators, regardless of when a home was built. Some communities successfully argue that installing a generator for an existing home is "new" work and should comply with the International Residential Code Section R322.1.6 for mechanical, plumbing and electrical systems (or International Mechanical Code Section M301.13 for those systems in buildings other than dwellings).

Local floodplain management regulations that govern all development, including activities that are not subject to building codes, may give us more support. Those regulations usually have broad performance statements that development must be reasonably safe from flooding and activities must be constructed by methods and practices that minimize flood damage. Whether a community has the authority to interpret those broad requirements to apply to a project that is just the installation of an emergency generator is a good question. My guess is some community officials will, deciding that the overall benefit to public safety, health, welfare and reduced exposure to future flood damage, is justification. On the other hand, some officials may be cautious about applying those broad performance statements to building activities that are not new construction or SI/SD.

As long as I'm expounding on equipment installation, I recall a few years ago a local official in Lake County, FL, asked me to take a look at a sticky situation and offer advice. This is a good example of how a contractor can lose an argument when a local official has common sense and the rules on his or her side. Take a look at the photograph on the left and ask yourself – if a contractor did this in response to your order to elevate the heat pump, would you accept it? If not, why not?

Laying aside questions about whether other aspects of this home are compliant (dryer vent below BFE? flood openings?), the most frequent answer I get when I ask the above questions during training sessions – after we all have a good laugh – is no, this is not acceptable. Sometimes it takes a little prompting to come up with the reason based on floodplain management regulations and building codes: Does it look like that little pimple of fill is stable on a good day? What about under flood conditions? Last I heard, the contractor did install a platform to raise the equipment above the BFE and it is anchored to the platform.

Speaking of platforms and anchoring, check out the photos below. The photo on the left shows a heat pump that was elevated high enough on a platform … but apparently the platform supports were not of equivalent capacity as the house pilings and didn't survive the flood. And let's not forget about other hazards. Whether a region is subject to high winds or seismic activity, it's important to anchor equipment. The photo on the right shows successful flood resistance (cantilevered platform), but apparently a lack of attention to wind resistance because the condenser is dangling off the side.

Source: FEMA P-55

Source: Tom Smith

My take-away? The situations illustrated by these photographs tell me that sometimes the "best answer" is in the regulations. However, all of us, including floodplain managers, building officials, plans reviewers, architects, engineers, builders, inspectors, and property owners, need to pay more attention to the details in the rules. All too often, short cuts end up increasing damage by floods and storm events.

Submit your own items or suggestions for future topics to column editor Rebecca Quinn, CFM, at rcquinn@earthlink.net. Comments welcomed!