

Certification of Regenerated Media

By Tina Fischer

The hottest topic in water revolves around the certification of regenerated media. A multitude of questions have come up and been discussed at length regarding this topic.

Among these questions, the most controversial has to do with the ability to certify regenerated media according to NSF/ANSI Standard 61 as it is currently written. While the NSF/ANSI Standard 61 does not specifically discuss the options for regenerated media, the latest revision of the standard, made in 2007, does not specifically exclude these types of products as being a part of the standard either.

The Regeneration Controversy

Regeneration is a common practice. It happens daily in ion exchange applications, which frequently occur in water softening processes. Recently, media manufacturers have explored the option of using regeneration as a way to eliminate some of the media waste produced by non-regenerable media as well as help keep the costs down for users of other types of media. By definition, regeneration is the use of a chemical solution (regenerant) to displace the contaminant ions deposited on the media during the service and replace them with the kind of ions necessary to restore the capacity of the exchange medium for reuse. The process seems simple enough, so why does controversy linger about the certification of regenerated media?

There are multiple ways regeneration can take place. As previously mentioned, the type of regeneration everyone is familiar with is in relation to water softeners. Saturated brine solution is used to recharge the resin to replace the calcium and magnesium ions in the drinking water. Other types of regeneration processes include in-vessel, non-commingled, commingled, onsite and offsite. For the sake of discussion, this article will only consider offsite regeneration.

Brief descriptions of the multiple ways to regenerate are as follows:

In-Vessel. This type of regeneration process is conducted when the media being regenerated remain in the tank or vessel as used when in service. The media are not removed for this type of regeneration.

Non-Commingled. This type of regeneration is considered the most common offsite regeneration process. To qualify for this process, the media may only come from a single source for regeneration. To complete the process, the media are taken from its vessel and moved to a regeneration facility where the regeneration process takes place.

Commingled. Commingled regeneration occurs when the media are taken from two or more sources, mixed together and then regenerated.

Offsite generation. Offsite regeneration occurs when media are taken from the system and transported to a different location to have the regeneration process administered.

It is difficult to put a finger on why resistance still exists regarding regenerated media certifications. Because the industry has yet to agree on a concrete set of policies to govern the certification activities for regenerated media, each certification agency must come up with its own policies and procedures by which to abide.

WQA & Regeneration

While the theory behind Water Quality Association's (WQA) certification of regenerated media is quite simple, there are numerous steps involved with this type of certification. The simplicity of the certifications is that the regeneration process is treated as a component of the product's formulation. Therefore, when manufacturers submit regenerated media for certification, they must also submit thorough details regarding the types, grades and concentrations of chemicals used in the regeneration process as well as a detailed step-by-step procedure that outlines the regeneration process. WQA strongly recommends that any chemical used for the regeneration process be qualified as an NSF/ANSI 60-certified chemical. These chemicals are subjected to a thorough toxicology review prior to initiating testing.

The more complicated and detailed items come in as the certification process begins to take place. The general steps WQA takes in order to certify regenerated media include some important items. The first and foremost is that both the

virgin and regenerated media must be tested and pass the requirements of the standard. A manufacturer may not obtain certification solely by submitting regenerated media for testing.

This combination testing protocol is significant due to the fact that when the media do go through regeneration, undoubtedly some media volume will be lost in the process. In order to make up the original volume, the regenerated media will be compensated with virgin media.

The second detail of importance is the fact that the manufacturer that holds the certification must maintain control over all regeneration procedures and functions carried out in relation to the regenerated media. These functions include but are not limited to items such as transportation of the media to and from the regeneration facility, the regeneration facility itself and the regeneration process, as well as the process of handling regenerated media inventories. All of these items are reviewed prior to initiating certification and are closely scrutinized through annual facility inspections.

A Stepping Stone

While the above policies do not detail the entire procedure WQA follows to complete a regenerated media certification, they provide a good stepping stone for understanding the basic principles involved with the requirements of this type of certification. WQA's policies for the certification of regenerated media were created to address the various concerns associated with regenerated media, but most importantly to uphold public health and safety. *wqp*

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