TG on Pool Chemical Evaluation

Item No. RWF-2011-12: Sections 9, 10, 12, 13, 14, 15, 16, 17

Issue Statement

NSF 50, devices listed under Sections 9,10,12,13,14,15,16 and 17 should all be tested using a standard water for comparison between them.

Background:

Currently NSF 50 has some general material requirements for chemicals, but they are not sufficiently detailed and more is needed. NSF should be testing particular chemicals and devices using a standard water as follows:

Using water with sanitizer produced by the device in water with the following values:

- **pH**: 7.0, 7.5, 8.0
- **TA**: 100, 200ppm
- **CH**: 150, 250, 500ppm
- **Temperature**: 60F, 78F, 84F, 90F, 100F, 105F
- **TDS**: 500, 1500, 3000ppm
- **Cyan**: 0, 10, 30, 50, 100ppm
- **Sanitizer Level**
  - **Chlorine**: 1, 4, 10, 20ppm
  - **Bromine**: 2, 4, 10ppm

The following organisms shall be used for testing: Poliovirus PV1, Pseudomonas aeruginosa, Cryptosporidium parvum; Biofilm, Algae. Kill times shall be listed for the above levels.

It cannot be assumed because chlorine and bromine produced the required EPA 3-log reduction for listing as a sanitizer that they can achieve a 3-log reduction when test under condition in a recreational water venue with chemicals and water quality values that are not standard for recreational water venues.
Item No. RWF-2011-13: Sections 3, 9, 10, 17

Issue Statement:

NSF 50, Section 3 has some health requirements for chemicals, Section 9, 10, and 17 have some performance requirements for chemical feeders and controllers. NSF 50 should more directly specify the evaluation, testing, and listing requirements for pool and spa chemical sanitizers to help facility operators, public officials, distributors, manufacturers, etc. and to protect public health.

Chemicals that are used at recreational water venues need to be evaluated to ensure certain levels of performance, safe chemical handling and proper use. Further there is a need to prevent knock off products that don't deliver what they imply or claim.

Manufacturers must specify the chemicals approved for use in these devices and provide use and handling directions including but not limited to: sizing, storage, winterization, cleanup, disposal, and troubleshooting.

Background:

Currently NSF 50 has some general material requirements for chemicals, but they are not sufficiently detailed and more is needed.

NSF should be testing particular chemicals for output or erosion rate to verify how much active ingredients are really in the chemical and how much is released over time under particular conditions of temperature, water chemistry, flow rate, etc using a standardized delivery mechanism or exposure rig.

EPA registered sanitizers need to be tested for efficacy using standardized conditions, including ancillary chemicals commonly used for treatment of pool and spa water and organisms found in these conditions.

It cannot be assumed because chlorine and bromine produced the required EPA 3-log reduction for listing as a sanitizer that they can achieve a 3-log reduction when test under condition in a recreational water venue with chemicals and water quality values that are not standard for recreational water venues.
Item No. RWF-2011-8: Sections 12, 13

Issue Statement:

NSF 50, Section 12 and 13 have some performance requirements for Ozone and UV process equipment which are used as Secondary or Supplemental sanitizer systems in conjunction with Chlorine or Bromine as the Primary System in Commercial Venues.

NSF 50 should more directly specify the evaluation, testing, and listing requirements for these units. They should be tested under the same test conditions as those for devices in Sec. 3, 9, 10, and 17 to help facility operators, public officials, distributors, manufacturers, etc. and to protect public health.

Devices that are used at recreational water venues need to be evaluated to ensure certain levels of performance, safe chemical handling and proper use. Further there is a need to prevent knock off products that don’t deliver what they imply or claim.

Manufacturers must specify the chemicals approved for use as primary sanitizers with these devices and provide use and handling directions including but not limited to: sizing, storage, winterization, cleanup, disposal, and troubleshooting.

Background:

Currently NSF 50 has some general material requirements for chemicals, but they are not sufficiently detailed and more is needed. NSF should be testing particular chemicals for output or erosion rate to verify how much active ingredients are really in the chemical and how much is released over time under particular conditions of temperature, water chemistry, flow rate, etc using a standardized delivery mechanism or exposure rig.

EPA registered sanitizers need to be tested for efficacy using standardized conditions, including ancillary chemicals commonly used for treatment of pool and spa water and organisms found in these conditions.

Recommendation:

Create a task group to develop the evaluation, testing, listing criteria to test these devices with the same chemical values as those for Primary Sanitizers.
**Issue Statement:**

NSF 50, Section 14, 15 and 16 have some performance requirements for chemical process requirements.

NSF 50 should more directly specify the evaluation, testing, and listing requirements for pool and spa chemical sanitizers produced by these units to help facility operators, public officials, distributors, manufacturers, etc. and to protect public health.

Chemicals that are produced by these devices in commercial recreational water venues need to be evaluated to ensure certain levels of performance, safe chemical handling and proper use. Further there is a need to prevent knock off products that don’t deliver what they imply or claim.

Manufacturers must specify the chemicals approved for use in these devices and provide use and handling directions including but not limited to: sizing, storage, winterization, cleanup, disposal, and troubleshooting.

**Background:**

Currently NSF 50 has some general material requirements for chemicals, but they are not sufficiently detailed and more is needed. NSF should be testing particular chemicals for output rate to verify how much active ingredients are really in the chemical and how much is released over time under particular conditions of temperature, water chemistry, flow rate, etc. using a standardized delivery mechanism or exposure rig. EPA registered sanitizers need to be tested for efficacy using standardized conditions, including ancillary chemicals commonly used for treatment of pool and spa water and organisms found in these conditions. These devices produce sanitizers but have not been tested or rated with the chemical conditions and requirements commonly used in some recreational water venues.

**Recommendation:**

Create a task group to develop the evaluation, testing, listing criteria to test/list chemicals produced by these devices.
Issue Statement:

Form a task group to develop evaluation criteria for NSF 50 to address swimming pool chemicals.

Background:

NSF established NSF Standard 22 in 1968 to address swimming pool chemicals but it was subsequently retired in the 1970s due to lack of interest. It was an overly ambitious standard that included biocidal efficacy, and dermal and olfactory toxicology testing including guinea pig immersion, human sensitization, and rabbit eye irrigation tests.

In the absence of any standard for swimming pool treatment chemicals, Florida has specified compliance to NSF Standard 60: Drinking Water Treatment Chemicals-Health Effects. While this has been adequate for disinfectants like hypochlorites or salt used in pools/chlorinators, there are many other pool chemicals that are sold that have issues that are not covered by NSF 60. Some chemicals accumulate in the pool over time, have various unsubstantiated performance claims, or have higher use rates than are used in drinking water. This has created a need for a separate standard specification for pool chemicals.

It is proposed that a task group be formed to establish requirements for NSF 50 to address the health effects, label verification and performance claims of chemicals, which utilize economical evaluations, and avoid animal testing.

Recommendation:

Form a task group to develop the following evaluation criteria for pool chemicals within NSF 50:

Health effects
Ingestion - based on NSF 60 but addressing different use rates, accumulation effects, appropriate pass/fail criteria.