December 28, 2007

Carvin DiGiovanni
President and CEO
International Aquatic Foundation
2111 Eisenhower Ave.
Alexandria, VA 22314

Dear Mr. DiGiovanni:

Thank you for your comments on the Joint Committee ballot of Standard 50 (50 i43 r1) regarding the revisions to the UV Life test. Below are your comments on this issue and the response of the issue proponent, Dave Purkiss of NSF International.

50i43
Name: Carvin DiGiovanni Vote: No

Comments: APSP votes “no” on this ballot for the following reasons:

Poor maintenance can shorten the life expectancy of the UV unit. Any definition should include documented recommended manufacturer maintenance schedules within it. Because manufactures have stated that many UV poor performances or equipment failures can be traced back to poor maintenance scheduling or a lack of proper maintenance we do not support the proposed change because it lacks the ability to clearly monitor the performance and thus the life expectancy of UV equipment without a clear inclusion of what does or does not constitute equipment failure.

The concept of equipment failure is a bit vague. It appears that the units would have to fail to operate all together before the test is failed. No indication is given that a unit would fail the test if the UV output dropped off severely during the 3000 hours. All it apparently has to do is keep operating in some form or fashion. This strikes a sharp contrast with chemical feeders which have to deliver the chemical at within 10 or 20% of the manufacturer's specified rate. UV systems simply have to operate without falling apart. It would be more appropriate to conduct the efficacy testing (appendix H) on units that have already undergone at least at least half of the life test in section 13.4, and without replacing the bulb before the efficacy test. This would give a more realistic expectation of typical efficacy in use, as opposed to the efficacy of a fresh unit.

We also do not agree with the idea of dropping the pressure testing altogether. If the manufacturer wants to claim that the unit can withstand a certain pressure, it is appropriate that the units be tested at some appropriate multiple of that pressure. Since some materials are severely weakened by UV exposure, the pressure tests of the UV units should be done after the 3000 hours of operation. Chemical flow-through feeders are tested at 1.5 times the rated pressure of the units indicated on the data plate. Filters have a similar requirement. UV units claiming any sort of pressure rating should likewise be tested to insure that the claims are valid? If the manufacturers don't want their units tested at 80% of the high "design" pressure of ~145 PSI, then perhaps they could reduce the listed pressure rating to something closer to common pool conditions and have the units tested at 1.5 times that pressure. If they are truly designed for much higher pressure than is common in pool work (30-50 PSI), then they should easily pass the test. But the pass should be based on actual test data from NSF or some other independent test lab, not just assumptions or assurances from the manufacturer.
Dave Purkiss’s response is as follows:

Based on your suggestions and discussion at the Joint Committee meeting, I have revised the proposed wording of the Section 13.4 life test requirements as follows:

_Ultraviolet units shall be capable of operating 3000 continuous hours at or above 80% of the maximum pressure recommended by the manufacturer, the minimum UV intensity for the average flow rate being utilized in the pool, based on the manufacturer’s published specifications. At least one unit shall complete 3000 h, and a minimum 8000 satisfactory hours shall be accumulated among the three units. All tests shall be carried out at 39+/-1°C (102+/-2°F) for spas or hot tubs. Maintenance according to the manufacturers’ instructions, except parts replacement, shall be carried out during the test period._

We have also added a section to address a hydrostatic test:

_Units shall meet a hydrostatic pressure of 1.5 times the manufacturer’s maximum operating pressure rating applied to all parts of the unit subject to pressure during operation._

The point you made about conducting the microbial efficacy test halfway through, or at the end of the life test is a very good point, however this goes beyond the extent of this proposed change, which was to remove the life test pressure requirement, which could not be met during field testing of units at operational facilities, since operational pressures are well below 80% of maximum operating pressure ratings. If this change was made it would need to apply to ozone and ion generators as well. Also chlorination equipment test requirements should be revised to require performance verification after or halfway through the life test. Currently only mechanical feeders under section 9 have to meet the performance (uniformity of output) requirement after the life test. A separate issue paper needs to be drafted to address this issue.

The above proposed language will be re-balloted. I hope this response addresses your concerns and you will consider changing your negative vote to a positive on the next balloted revision. If you have additional comments, or wish to discuss these points further, please contact me.

Thank you again for your thorough review.

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