The
ALTERNATIVE/EXPERIMENTAL WASTEWATER TREATMENT TECHNOLOGIES TECHNICAL REVIEW COMMITTEE (TRC)

The meeting was held at
95 Cripe Street, North Kingstown, RI

December 18, 2013

Approved Minutes

Present: Brian Moore, Nikki Andrews, Noel Berg, Jim Boyd Susan Licardi, George Loomis and Tim Stasiunas

Absent: David Dow and Dennis Vinhateiro

Others Present: Jim Meyer, Norweco, Inc.; Brian Parker, Eljen Corporation and Deb Knauss (DEM)

Call to Order: 8:50 AM

Materials Distributed:
- Draft Agenda for this meeting
- Draft Minutes of 11/20/13 meeting
- Summary of Norweco, Inc.'s application for Hydro-Kinetic Model 600 FEU
- List of questions on Norweco, Inc.'s application for Hydro-Kinetic Model 600 FEU that Deb sent to Scott Hetrick, incorporating his answers.
- Brief data summary of the supplemental testing NSF performed on Hydro-Kinetic Model 600 FEU with design flow of 600 gpd
- Draft revised Eljen design manual
- URI's Proposal for Development of Guidelines for the Design, Use and Troubleshooting of High Strength Onsite Wastewater Treatment Systems

Review of Draft Minutes of November 20, 2013
Add Jim Boyd to the names not present.

Correction on Page 2: in second sentence of the fifth paragraph, deleted "is" after "training".

Pre-motion Discussion:
There was discussion about designers' responsibility to explain the possibility of system enrollment, although it is not known at the design phase if a system will be enrolled. Brian agreed that the OWTS listserv could be used to clarify designers' responsibility to inform applicants that are considering a system that might be enrolled in the monitoring protocol, that their system might be monitored, and how the monitoring would be fulfilled.

There was also discussion about developing a form that homeowners would sign acknowledging that their system might be enrolled in a monitoring protocol as a test system. Brian said that this would be added to the list of things to do.

It was explained that if monitoring results indicate that a technology is not performing to the treatment objective for which it is approved, that the systems installed under the protocol will not be required to be removed, but no additional permits for the technology would be accepted.

There was discussion about the necessity of telemetry for systems enrolled in the monitoring protocol and that we need a commitment from the vendors/distributors, that any additional component required to facilitate telemetry will be added to the panel if a system is identified for enrollment.

Motion: George made a motion to approve the minutes with the noted corrections.
Second: Noel seconded the motion
Discussion: There were no other comments.
Abstention: Jim abstained from the vote because he was not in attendance at the subject meeting.
Vote: All present, except Jim who abstained, voted in favor of the motion.

Stakeholder process
Although at the last meeting, the TRC voted to support development of a stakeholder process to consider large system compliance and O&M issues, it has been busy in the office and this has not yet been initiated.

URI's Proposal for Development of Guidelines for the Design, Use and Troubleshooting of High Strength Onsite Wastewater Treatment Systems
George explained that most states regulations incorporate hydraulic flow but not organic loading, but that a proper design requires consideration of waste strength (BOD, TSS and FOG) and that flow equalization should also be accommodated by the system design. At the New England Onsite Wastewater Training Center (NEOWTC), George and David teach a class on high strength wastewater, but designers need more guidance on this topic. The proposal is to develop a guidance document that is as generic as possible (addressing treatment system types rather than using proprietary names) that can be easily modified as it is used and the science evolves further. It is proposed to be developed using the same process that was used for the recently adopted guidance on pressurized drainfields.

There was discussion about the value of letters of support. Susan offered that North Kingstown would be willing to write such a letter. Brian suggested incorporating the TRC vote into the introduction of the proposal for the guidance document.

Motion: Jim made a motion to endorse this proposal for Development of Guidelines for the Design, Use and Troubleshooting of High Strength Onsite Wastewater Treatment Systems produced and proposed by NEOWTC.
Second: Susan seconded the motion.
Discussion: There was no discussion.
Abstention: George abstained from the vote.
Vote: All present, except George who abstained, voted in favor of the motion.

Norweco, Inc.'s Application for Hydro-Kinetic Model 600 FEU

Jim Meyer Vice president of Engineering at Norweco, Inc. explained that it was very recently determined that the system will be marketed as Hydro-Kinetic Biofilm reactor. It is designed for residential strength wastewater (using NSF's definition: BOD 100 – 300 mg/L and TSS 100 – 350 mg/L). The system will be used with only the synthetic "biofilm reactor media" although it was tested by NSF using both this synthetic media and a natural media. The air pump runs continuously, and the pump may be installed in the riser, or up to 75-feet away. If installed in the riser, maintenance is facilitated by easy disconnection and removal of the unit.

Jim explained that the system recirculates 400% of the design daily flow. There was discussion about recirculation 400% of the **design flow**. Jim explained that recirculation is set at the factory, to a "design flow" of 600 gallons per day in all cases. And although NSF listed the system for 500 gpd, there is no flexibility to order a unit factory-set to recirculate based on a design flow of 500 gpd. However, there is a way that the service provider could access the control and make modifications to the settings, with nearly infinite flexibility: the system will not accept zero recirculation. This might be important because we can anticipate that many of these systems will be installed at homes were residents practice extreme water conservation measures and actual flow will be very low.

The Service Pro control panel accommodates telemetry by hard-line phone, internet or cellular connection.

Jim showed a cut-away side of the equalization device and explained water flow through it. There is a 300-gallon surge capacity in the unit.

System tank options: there are three options:
1) Integral concrete pre-treatment tank,
2) Distinct pre-treatment tank with concrete treatment tank and
3) Distinct pre-treatment tank with HDPE treatment tank.

The working volume in the system is 1820 gallons. Maximum design flow is 600 gallons per day. Regarding the volume range of the pretreatment tank, Jim recommends 600 gallon as the maximum, but prefers that it be used as it was tested by NSF.

All three have NSF approval (the plastic filter tank received NSF approval this week). The distinct pre-treatment tank option allows use of the existing Singular concrete tank mold for the treatment tank. The HDPE tank is suitable for installation with up to 3-feet of cover and without antiflotation measures if it is installed with minimum cover of 16-inches and soil density of 100 pounds per cubic-foot.

Piping within the tank is installed by the distributor (this is whom Norweco, Inc. holds accountable for this) and the installer performs the installation of the tanks and drainfield and makes the connections.

Brian Moore stated that since Norweco, Inc. submitted the supplemental NSF report on the testing performed at a design flow of 600 gallons per day, RI would now recognize the system for up to 600 gpd. He added that since the treatment performance at 600 gpd was different than at 500 gpd, the treatment claim must be revised to be consistent with the performance from the 600 gpd testing. Jim Myer agreed that this is appropriate.

Brian asked about Norweco's perspective on the Hydro-Kinetic Model 600 FEU in RI with consideration of the TNT approval that was recently issued. Jim explained that the TNT is considered to be the standard N-removal system and Hydro-Kinetic is a high performance N-removal system. When asked about cost differences, Jim explained that TNT will be the less expensive of the two, but that he doesn't have actual cost information. He will ask back at work and have the information provided.

Norweco, Inc. is requesting that the required service frequency be reduced from the standard semi-annual to once per year because the NSF testing ran one full year without maintenance being performed on the system. While the NSF policy is to require semi-annual maintenance, Norweco, Inc. may submit a request for a variance if a state issues an approval incorporating annual maintenance and NSF will grant it.

Jim explained that service providers go to the distributors for training and that Norweco holds monthly training for service providers.

Eljen Corporation Proposed Revisions to the Eljen Manual

Brian Parker (Eljen Corporation) distributed the original currently used Eljen manual emphasizing the obsolescence of the regulatory citations and explaining that their proposed revised version includes installation options for sloping sites and on a contour and distribution by low pressure pipe (LPP).

He explained that the LPP section in the proposed manual is vague because the RI Pressurized Drainfield Guidance hadn't been adopted at the time that he drafted the proposed revisions. He explained that they encourage micro-dosing with a maximum of 4 gallons per dose cycle per module.

During discussion about orifice diameter, Brian said that they would be happy to incorporate orifice diameter that is being used in other methods of pressure distribution in RI so as to not introduce confusion. There was some discussion about orifice spacing differences for treated effluent and septic tank effluent. Brian said he'd review these in the new RI Pressurized Drainfield Guidance and incorporate the applicable changes in the next revision.

Venting was discussed. RI doesn't require venting unless the field is installed under impervious surface. Brian Parker explained that venting is only necessary when cover exceeds 18-inches and that if pressure distribution is being used, it is probably not a deep installation. Brian Moore explained that our maximum cover is 2.5-feet. George expressed concern about the cost of venting pipe within a pipe LPP: the required sweep (versus a hard-90-degree bend) has a 24-inch radius, which might cost about $35. This is a costly pipe component. Alternatives discussed included corrugated pipe, but Brian Parker expressed concern with its crush status. Another concern with venting is that the vents become an obstacle in the yard. Brian Parker said that venting could be specified as recommended, rather than required. But Moore stated that the term recommended would introduce confusion; either specify that venting is required if cover exceeds a specified depth, or eliminate the requirement.

Referencing the figure on page 22 of the proposed manual, Brian Moore explained that shrubs and trees need to be a minimum of 10-feet away from a leachfield.

Brian Moore explained that use of Eljens on sloping sites is a big deviation for RI. On sloping sites we require a tipping d-box and overflow lines and he asked how overflow will be accommodated and to incorporate the details in the manual.

Brian Parker agreed to incorporate whatever design criteria are used in RI, including feeding lines exceeding 25-feet in length, at the mid-point.

Brian asked everyone to get their comments on the proposed draft to him or to Deb by email.

Applicability of Executive Session for Discussion of Some Technology Issues

Brian explained that he and Deb met with DEM legal and entering into executive session in TC meetings for the purpose of discussing system performance is not covered by the Open Meetings Act and therefore we may not do so. There had been a question about when data becomes public record: as soon as it is submitted to DEM, it is a public record.

AE Program Update

Aqua Test, Inc. and **Atlantic Solutions** have scheduled **training** for **The Nibbler** for **January 14, 2014.**

Nitrex: the two systems that under the proposed start-up procedure have completed the weekly testing and are now being sampled monthly.

Large System AE Compliance

Large system data is being submitted; the next phase will be performance compliance.

Next Meeting and Adjournment

The group selected January 22, 2014 for the next meeting.

All business concluded and no additional business was introduced, the meeting adjourned at 11:30.