

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

**The meeting was held at the Quonset Development Corporation Annex
35 Belver Avenue, North Kingstown, RI**

February 28, 2012

Draft Minutes

Present: Ken Anderson, Noel Berg, Russ Chateaufneuf, Susan Licardi, George Loomis, Tim Stasiunas and Dennis Vinhateiro

Absent: Nikki Schultz

Others Present: Brian Moore and Deb Knauss (DEM)

Call to Order: 8:40 AM

Materials Distributed:

- Draft Agenda for this meeting
- Draft Minutes of 1/26/12 meeting
- Proposed draft rules for discussion, specifically Rules 17, 37
- February 23, 2012 letter from Russ to Pio Lombardo (Lombardo Associates, Inc.) with revised Nitrex certification
- Revised Nitrex summary from the RIDEM list of approved technologies
- RIDEM OWTS listserv notice issued Friday, February 24, 2012 regarding temporary restrictions on use of Nitrex with BSFs, PSNDS, and reduced size conventional leachfields
- February 27, 2012 letter from Russ to Pio Lombardo (Lombardo Associates, Inc.) responding to Pio's December 29, 2011 memorandum to RIDEM regarding Nitrex startup issues
- OWTS Listserv notice of TRC vacancy issued Friday, February 24, 2012

Review of Draft Minutes of January 26, 2012

Page 3: In the second paragraph from the bottom, edit the first sentence to read: "George explained that the New England Onsite Wastewater Training Center was responsible for writing the disinfection chapter of the Onsite Consortium of Institutes for Decentralized Wastewater Treatment's curriculum for the national installer certification program."

Motion: Tim made a motion to approve the minutes with the correction noted.

Second: Susan seconded the motion.

Discussion: There was no discussion.

Vote: All who were in attendance at the meeting January 26th voted in favor of the motion.

Proposed Regulatory Changes to Address Concerns of South County Towns

The South coast municipalities' resolutions asked the general assembly to ask DEM to review the OWTS Rules, investigate less expensive nitrogen removal systems, develop and implement an expedited approval process for nitrogen removal systems and re-evaluate the triggers requiring upgrade to a nitrogen removal system. DEM made additional revisions to the proposed draft OWTS Rules after the meeting held in December with these municipalities' staff, elected town officials, state representatives, some TRC members, and some DEM staff. This draft will be discussed with the group again at the second meeting scheduled for March 5th. This is the draft presented today for TRC consideration, specifically of Rules 17 and 37.

Rule 17: the objective is to relax the trigger for homeowner upgrade to nitrogen removal technology in certain circumstances.

The 2010 Rule change included the provision that if a conventional system is servicing a home and any increase of the home's footprint was proposed, this would trigger the requirement for upgrade to a nitrogen removal system. This resulted in complaints from homeowners and building officials because small projects like breezeways and small increases in the size of a kitchen triggered the upgrade requirement. Point of sale (POS), as a trigger for upgrade to nitrogen removal was discussed at the December meeting. Also discussed was relaxing the requirement of allowing expansion of a maximum of 70 square-feet without upgrade. This would include a sunset date at which the Rule would revert to a standard requirement for specified construction projects (area affected) triggering upgrade to nitrogen removal in the Salt Pond and Narrow River critical resource area watersheds. The sunset idea included having POS enacted in state law, or lacking this we would revert to a construction/improvement-based trigger.

Changing the trigger to a 50% threshold (with no encroachment on the existing system) was suggested by a building official, because this triggers other upgrades and is therefore a threshold that is well understood and accepted in the building industry.

Ken noted that the CRMC Rules incorporate “substantial improvement” as a trigger. He explained that there is a lot of flexibility in a cost-basis analysis, including location of the home; this results in many proposed improvements not triggering the subject rule, although it may appear that they should have.

Noel liked the idea of a sunset date, although the date might be argued. Tim added that the economy is not likely to have improved dramatically by 2014 and the slump might persist beyond that.

Ken asked if there is a dollar value associated with POS. Russ stated that it would apply to all homes sold in the critical resource area watersheds. It is expected, based on home sales data, that there would be ten-times as many nitrogen removal systems installed under POS as there would with improvement-based triggers.

There was some discussion about *transfers* of property within families (in addition to real estate *sales*), tax sales and foreclosures: if a home is owned by a bank, what would happen then?

As we work to accommodate the requests for relief and develop alternative solutions, we need to keep in mind that the objective is to reduce the total nitrogen load per year to the ponds, so that this doesn't get lost.

There was discussion of second homes occupied only during the summer months. Ownership of a second home would suggest that resources are available for upgrade to a nitrogen removal system if modification is proposed for the second home. However, if it is only occupied by two people during the summer months, the nitrogen loading from that home is a lot less than a year-round residence occupied by two or more people. And although its occupancy might sometimes exceed the system's design flow, the system is only in-use for a few months each year. However, we can't regulate occupancy (it is hard to know how many people are occupying a home), so documenting part-time occupancy is not something that fits into the permitting process.

Also discussed were small homes that have been in a family for many years and the subset of these that are demolished and a new home built in its place, as high as the zoning permits. In the second case, it was felt that the upgrade to nitrogen removal technology should be mandatory.

The idea of using water records was discussed as a method of getting an idea of occupancy and nitrogen loading based on water use. If water is used year-round, a higher nitrogen load from that residence may be expected. Maybe a threshold could be identified above which the address could be expected to be a major contributor compared to a home with a three-month water-use record. A drawback to this is that it can't be applied to homes served by wells.

Someone asked about adding POS/POT (transfer) to Rule 17. Russ explained that this has been moved to the legislature.

70-square feet was thought to be a very small area, more of a closet in most homes, and therefore too restrictive of improvement as a trigger to upgrade to a nitrogen removal system. Increasing the trigger from 70-square-feet to 100-square-feet was suggested, and/or a hard dollar value. 600-square-feet of construction was estimated to be approximately equivalent to \$60,000 - \$120,000. It was suggested that it should be consistent with the wetland Rules. The term “substantial improvement” provides a huge loophole and improvements can be staggered over time to get around this. Fifty percent was suggested and linking it to some date of system installation or permit approval. Under CRMC review of alterations to existing structures, if the square footage of the foundation increases by less than fifty percent, no new coastal buffer zone is required.

Russ explained the proposed changes to Rule 37.4. There are two purposes being accommodated:

- 1) DEM recognition of nitrogen removal technology approvals obtained in other states and
- 2) Encouraging manufacturers and vendors of nitrogen reducing technologies that might be on the leading edge of the applied science to apply to DEM for experimental approval.

He explained that the OWTS Rules defines an “applicant” as the owner of the property for which an OWTS construction permit is sought and the owner of the installed OWTS. We want “vendor” to mean the technology manufacturer/vendor or agent of the technology manufacturer/vendor, so the term “applicant” has been changed to “vendor” in this Rule. “Vendor” has also added to the definitions as “the person seeking alternative or experimental technology approval”.

The proposed Rule 37.4.2 (D), accommodating NSF/ANSI Standard 245 certification, opens the door to technologies that can meet a 50% removal standard, although not a claim of nitrogen reduction above 50%. Under this proposed Rule, the NSF 245 certification will satisfy the technical part of the approval criteria. The vendor would still have to

submit data for the file (the NSF report contains all the data generated by their testing of the technology), and a design, installation, and O&M manual for RI that would have to be approved by DEM. The vendor would be required to monitor and provide to DEM analytical data from three systems installed in RI, as currently required for Class Two technology approvals.

There was discussion of the 50% N-removal requirement and TN concentration in the treated effluent. Homes with low water usage will have a higher TN concentration than a home with equivalent or even greater nitrogen loading and higher water use (which might be discharging effluent that satisfies the 19 mg/L requirement). With consideration of this, 50% removal is a preferable treatment objective, but without influent data, percent removal can't be determined. One-tank systems prevent this analysis from correctly being performed; in these cases, there is no way to obtain an influent concentration that has any relationship to the effluent sample collected

There was concern that the NSF 245 requirement of 50% TN removal might not be equivalent to RI's 19 mg/L requirement based on the range of the influent TN concentrations during the NSF testing. Ken accessed the internet using his phone and reported that the influent standard for NSF 245 certification testing is TKN 35-70 mg/L and that the average TN concentration of all effluent samples must be less than 50% of the average TN concentration of all influent samples. George reported that in his experience influent TN concentrations in the range of 65-70 mg/L can generally be expected.

There was some discussion about the DEM TN removal requirement of 50% and 19 mg/L and it was suggested that it be changed to 50% or 19 mg/L. We are looking for effluent below 19 mg/L, if we say "or", then the influent becomes critical. Deb stated that when she summarizes data reported in a technology application, she reports the range for each system with that system's average, because although individual observations might exceed 19 mg/L, the system's average might be 19 mg/L or less. If someone wants more detail about how the data scatter about that average, they can consult the data in the application. George stated that testing at Barnstable County data is reported with whisker bars and it was also acknowledged that municipal treatment systems allow excursions and have permit conditions such as single-day maximum limit.

The treatment requirement for nitrogen removal technologies will remain as 50% TN removal *and* TN concentration in the treated effluent of 19 mg/L or less.

George emphasized the difference between this RI standard and the NSF 245 certification's standard of 50% removal. Russ asked if we want to add to the draft proposed Rule "NSF 245 certification *with a preponderance of the data demonstrating 19 mg/L or less?*" The group agreed that this should be added.

Experimental Technology Evaluation Criteria for nitrogen reducing systems, Rule 37.4.6.2(B), requires the vendor to retain a third-party to conduct sampling and monitor the performance of the systems. This will apply to all the experimental technologies. It was decided that "qualified" should be added to "third party" and "that is acceptable to RIDEM" should be added after "The vendor agrees in writing to retain a third-party". All analytical work must to be performed by certified labs.

DEM acknowledges that there is cost associated with this requirement and lab analyses of effluent samples, but we are aware that NSF testing is expensive. This section addresses use of experimental technologies, for which only bench-scale study might be available. Knowledge of how the systems perform when in-use at homes is essential to establish whether all of the systems authorized for use under an experimental approval actually perform to the vendors' claims and the RIDEM requirements. It is also essential that the samples be collected by trained professionals so that sample collection and preservation are performed correctly to protect the integrity of the samples and the analytical data that will be evaluated as part of the experimental approval testing process.

If a technology is demonstrated to not perform to the vendor's claim, or to the RIDEM requirement, required action might be different for systems installed under new building construction and alteration permits versus repair permits. If a system installed as a repair does not perform to the vendor's claim or to RIDEM's standard, it may not be as critical as a system installed under new a building construction or alteration permit where design flow was increased. So, under the proposed draft Rule for experimental systems installed under repair permits, RIDEM will have the discretion to require replacement of the system, some other action, or to allow the system to remain in use. If an experimental system installed under a new building construction or alteration permit with an increase in design flow, is determined after two years to fail to perform to the vendor's claim or to the RIDEM standard, the vendor will be required to provide for replacement of the system with an OWTS on the RIDEM approved technology list.

There was discussion regarding the interval after which a technology may be declared to not perform to the claim or to RIDEM standards, and whether it should be two years, as stated in the proposed draft Rules, or whether this should be reduced to one year, after which time the vendor would be required to replace the system.

Consideration of a vendor's application for Class Two approval of technology that has been approved for experimental use was discussed. If an experimental technology installed as a repair produces treated effluent with average TN concentration of 45 mg/L, RIDEM could allow the system to remain in service. If all the systems installed perform similarly, the technology wouldn't be eligible for an application for a Class two approval, but under certain repair scenarios, the system could remain in-use.

There was some discussion about the requirement that the vendor must "demonstrate that the technology will work in practice or theory" and exactly what we want from them to fulfill this requirement. It was decided that we need a scientific study, which may be performed on a scaled-down version of the subject technology. We will need to see a well designed study with data reporting the performance of the study-system, clearly documenting the characteristics of both the influent delivered to the test system and the treated effluent. So, it was decided that it is necessary to add "the vendor supplies data that demonstrates" to "that the technology will work in practice or theory".

It was also decided to replace "installation" with "approval" following "prior to the..." at 37.6.2(A) and 37.7.2(A),

Nitrex

Russ reported that Pio Lombardo (Lombardo Associates, Inc., Nitrex vendor) has been very responsive to the issue of elevated BOD concentrations in Nitrex effluent during startup, and has proposed several measures to DEM to deal with this startup issue.

Russ sent two letters to Pio in the last two weeks. In the first of these two letters dated February 23rd, he explains that DEM is evaluating the options proposed in Pio's December 29, 2011 memorandum to DEM. In this letter, Russ also provided notice that the RIDEM certification for use of Nitrex has been temporarily revised to prohibit its use with PSNDs, BSFs and reduced area conventional leachfields because of the startup condition of elevated BOD concentrations in the Nitrex effluent.

In the second letter dated February 27th, Russ explains DEM's concerns with the proposed solutions as outlined in Pio's December 29, 2011 memorandum. These concerns took into account the TRC review of this memorandum at the January 26th TRC meeting. Pio had proposed a couple of additional measures in an email received February 24th; Russ has asked Pio for additional detail on these measures and also for those summarized in Pio's December memorandum.

Technology Program Status Report

Deb reported that the Fusion certification was issued February 24th, and that she had emailed it to the TRC yesterday with its cover letter addressing the remaining effort to complete the required guidance materials and subsequent training.

The next certification to be written (and currently under development as of February 20th) is the revised PolyLok certification to include the PL-525 and PL-626 with the currently approved PI-122. George asked if the new filters are similar to the one that is currently approved. Deb explained that both of the new filters are of the same configuration as the PL-122, with the same buoyant shutoff ball feature to prevent pass-through of unfiltered effluent during servicing of the filter, that their model number is descriptive of surface area as is the PL-122 (122 square-inches of linear feet of slotted filter area) and that the PL-626 is suitable for use in grease tanks.

A notice of the TRC vacancy was distributed on the OWTS listserv Friday 2/24.

Next Meeting

The group selected March 27, 2012 at 8:30 AM as a suitable date and time for the next TRC meeting. Deb will check with QDC on availability of the Annex and notify the group when she has secured a venue for this meeting.

Adjournment

All business concluded, no other issues were introduced and Russ declared the meeting adjourned.

The meeting adjourned at 12:12 PM.