STEERING COMMITTEE MEETING SUMMARY
ETV DRINKING WATER SYSTEMS CENTER
November 27, 2007

A Steering Committee (SC) meeting was held on Tuesday, November 27, 2007 to review the current status of the Environmental Technology Verification (ETV) Drinking Water Systems (DWS) Center and to discuss future initiatives, as outlined in the meeting agenda and outline (see Attachment A). The meeting commenced at 8:30 AM EST. Below is a list of attendees:

Attendees:
Adams, Jeff – U.S. EPA/Office of Research and Development (ORD) (participated by phone)
Bartley, Bruce – NSF International
Blumenstein, Michael – NSF International
Dyson, John – Infilco Degremont and Water and Wastewater Equipment Manufacturers Association (WWEMA)
Logsdon, Gary
Osterhoudt, Darrell – Association of State Drinking Water Administrators (ASDWA)
Pearson, David – PCI Membrane Systems Ltd. (ITT Aqueous)
Weise, James – Alaska Department of Environmental Conservation (ADEC)
Biberstine, Jerry – National Rural Water Association (NRWA)
Jim Cleland – Michigan Department of Environmental Quality (MDEQ)
Pat Cook – MDEQ
Khalil Atasi – Wade Trim
Eva Nieminski – Utah Department of Environmental Quality

Bruce Bartley, the DWS Center Manager, began by welcoming the group and thanked everyone for their participating.

The first order of business was to select a Steering Committee Chairperson. No one volunteered, so B. Bartley requested that J. Biberstine fulfill the role of interim Chairperson for the meeting. J. Biberstine agreed.

New Steering Committee Members
The next topic of discussion was recruiting new Steering Committee members. B. Bartley stated that the group needs representation from a few more states, hopefully from ASDWA's list of contacts. D. Osterhoudt of ASDWA volunteered to discuss this with its board. B. Bartley also requested that the manufacturer representatives (J. Dyson and D. Pearson) spread the word to other manufacturer representatives they see, to hopefully gain a couple more manufacturers on the committee. The goal is to have at least four committee members from the manufacturing, State, and utility sectors.

J. Weise stated that he met with AWWARF officials recently, and they expressed an interest to be more independent from AWWA. Weise suggested they contact NSF to become involved with NSF committees. B. Bartley replied that NSF would contact the executive director of AWWARF.

Changes in ETV Program

B. Bartley explained that the EPA Office of Research and Development (ORD) wants ETV to become more involved with testing of prototype products in addition to pilot testing of the final product. ETV verifications could be a two phase approach: first test the prototype, then test a pilot unit. J. Adams stated that the phase 1 report may not be issued alone, the prototype and pilot tests may be combined into one report. B. Bartley added that this approach would allow more innovative technologies to come through the ETV Program. J. Adams explained that EPA also wants to incorporate environmental sustainability issues into ETV verifications. J. Weise asked how these changes would impact the cost of testing, especially for small bsuinesses. He added that AWWARF projects involve cost sharing.

B. Bartley pointed out that EPA's Small Business Innovative Research (SBIR) grant program offers up to $50,000 toward ETV verification. This could help offset the costs of ETV for small businesses. Larger businesses with innovative technologies could look for funding through the EPA's Regional Applied Resarch Effort (RARE) program, which is a collaboration between the EPA regions and ORD. The technology would need to apply to a water quality issue that is of concern to a particular regional office. B. Bartley added that the armed forces also have funds for joint projects. Another way to reduce costs would be to use Army or Navy testing facilities which may have less overhead expenses than NSF or engineering firms, and their facilities might allow for field testing without placing NSF staff offsite in remote locations.

The conversation turned to the issue of incorporating existing data into ETV reports. J. Dyson stated that ETV verifications are very costly, and a manufacturer can't do enough testing through ETV to satisfy all States. ETV needs to accept existing data to add value to a verification. Treatment systems are installed and piloted by reputable firms, ETV needs to more easily accept this data. J. Weise stated that Alaska supports including existing data in a report supplement. The issue of existing data was deferred as it was on the agenda for discussion later.

ETV Updates

B. Bartley brought up a slide showing a map of the US, and the states that use ETV reports to some degree. It showed that at least 30 states used the ETV reports in some fashion either a requisite or part of permitting. B. Bartley pointed out that although California and New York are currently listed as not using ETV reports, this was the result of leadership changes that occurred during the survey period. NSF plans to make a concerted effort in the upcoming survey to contact both States. California currently doesn't have a state drinking water administrator. Bartley added that NSF does work often with CA DHS. NSF has started 2008 survey, and they hope to see some more states using ETV.

B. Bartley next showed listing the current number of ETV reports, recently released reports, and current testing activities. These slides are attached to this summary as Appendix A. J. Weise asked what the current funding status is for the program. B.

Bartley replied that NSF currently only has money to cover routine reporting requirements to EPA (note that this does not cover writing verification reports).

UV Protocol Discussion

B. Bartley began this discussion by going through some slides summarizing the current issues with UV testing under ETV:

- 2003 – Stakeholders decided to defer to EPA UVDGM.
- 2006 – Final UVDGM is less prescriptive, more flexible.
- UVDGM states that 3 log reduction can be granted if a UV system is validated to the Austrian ÖNORM or German DVGW UV protocols.
- Discussions with states suggest need for a national UV validation database, and summary reports of the validation testing. Most states say that testing to the German or Austrian standards is OK.
- The NSF pool and spa joint committee wants to make the UV certification requirements in Standard 50 more like drinking water testing.
- NSF needs QA oversight of testing for ETV verification, or to have NSF's name associated with a testing summary report if not an official ETV report. NSF needs to either audit the testing organization, or receive verification that the organization has a quality management plan that follows ISO 17025.
- B. Bartley read an email message from Rick Sakaji discussing his opinion about validations conducted by a European lab to the ONORM or DVGW protocol. *"In concept I've never had a problem with the DVGW protocol, the problem I see with the ONORM and DVGW protocols is that only one organization in each of those respective countries (Austria and Germany) handle the testing and certification of the UV units (I am sure that each has their own internal QA/QC which they do not advertise). In the US under the ETV or NSF 55 programs that wouldn't be the case. Hence you need some QA/QC checks on the organizations conducting the testing and certification to make sure everyone is achieving some minimum standard of care. Without that the chances are too great that someone will certify a unit that probably wouldn't meet the minimum requirements. Something I know is possible. So the DVGW protocol is fine, but some sort of QA/QC protocol needs to be added."*

B. Bartley stated that he had heard of UV manufacturer's having difficulty getting ISO 17025 verification, or QA/QC data from DVGW. He asked if anyone has a contact in Europe that may be able to verify whether the DVGW testing follows ISO 17025. D. Pearson replied that he could contact ITT Wedeco in Germany to see if they can get some information. B. Bartley added that the UV summary reports would likely need to be published outside of the ETV program, since ETV has existing data policies that NSF would need to comply with.

J. Biberstine asked for clarification that the issue at hand is whether NSF or ETV will accept the existing UV data, since the EPA UVDGM already says that the data can be used for a 3 log credit. B. Bartley replied yes, that is the issue. J. Biberstine then asked whether it was worthwhile to consider the issue, since EPA has already deemed the data

to be acceptable. E. Nieminski said that regulators need assurance that the QA/QC is OK for reactor validations. P. Cook asked whether American test facilities comply with 17025. B. Bartley replied that he did not know.

K. Atasi stressed that is also important to understand the hydrodynamics of a UV reactor, it is not always enough to just look at the test data. J. Dyson replied that hydrodynamics information is proprietary, so most manufacturers will not supply it.
E. Nieminski stated that the states also need guidance about how to evaluate the QA/QC data. B. Bartley stated that the manufacturers need to be more adamant about getting full DVGW test reports in English, along with the pertinent QA/QC data.

NSF will follow up with UV manufacturers to see if they can get any more QA/QC data, or ISO 17025 verification from DVGW. NSF will try to host a conference call in January to update the Steering Committee.

Membrane Protocol Discussion

B. Bartley explained that the ETV protocol is referenced in the EPA LT2 Membrane Filtration Guidance Manual as a test protocol that could be used for the required product-specific challenge testing. The issue with the ETV protocol is that it states that challenge testing in the lab is optional, while field testing is mandatory. NSF has found that field challenge testing is no longer feasible, so NSF would like to make lab challenge testing mandatory, and field testing optional. B. Bartley stated that this would have an added benefit of keeping verification costs down, especially since small-scale modules can be tested instead of the full-scale modules. J. Biberstine stated that the problem with the proposed modification is state's desire to see field pilot data, not just lab data. D. Pearson replied that the worst case test is a clean membrane under lab testing conditions. J. Adams added that the field evaluation part of the LT2 rule is essentially the requirement for continuous indirect monitoring of membrane integrity through turbidity or particle count data.

B. Bartley then presented a slide show giving an overview of the Membrane Filtration Guidance Manual testing and monitoring requirements. After the slide presentation, J. Adams stated that an important missing piece of information that is not required is the pressure decay associated with a breach of a known size, such as 3 microns. J. Dyson stated that membrane variability is such that the pressure decay from a 3 micron breach would be variable. J. Adams asked the group if there is something other than a severed fiber ETV verifications should be evaluating? There was further discussion about pressure decay testing, but no consensus was reached.

At the end of the discussion, D. Pearson suggested that the definition of a membrane system in the ETV protocol be changed so it is consistent with the LT2 definition. He said that a membrane system is only one that can undergo a direct integrity test. If the system cannot, it should be classified as a cartridge filter.

Break for Lunch

After lunch, K. Atasi updated group on EPA's new rule to regulate water treatment plant discharges under the clean water act.

Existing Data Discussion

B. Bartley began the discussion by reviewing the current existing data acceptance policy for ETV. He then added that the Drinking Water Systems Center can develop new data acceptance policies to allow for supplemental data to be included in an ETV report, or to update an existing report with new pilot testing data. B. Bartley then asked the group if they think NSF and EPA should consider offering an existing data or secondary data ETV report, based on NSF and EPA review of the data? J. Biberstine stated that the original purpose of existing data for ETV reports was to include operational data for existing installations. B. Bartley added that NSF could also consider maintaining a public-accessible master database of operational data.

J. Dyson stated that the current problem with the existing data requirements is that it has to meet the ETV protocol requirements for QA. No existing water plant data will meet the ETV requirements. He added that the data would be from reputable source, such as a consulting firm or state certified lab, so the data should be of high quality. J. Biberstine added that many state labs probably don't meet the ETV QA requirements. G. Logsdon explained to the group that the ETV requirements were developed by the EPA Office of Research and Development. The EPA regions don't require the same amount of QA for operational and pilot data. J. Adams added that the ETV program was set up to have stringent QA for branding purposes. However, there should be some other way to report data that is useful to the states. He asked if there is a role for ETV to put together secondary data reports. A clear distinction would be made between these reports and primary ETV verifications. The identity of these reports would be varied with a different format or cover design. The secondary data report would still include QA data as available, and would be reviewed and assessed by a peer panel. J. Adams said he is looking for stakeholder feedback, and he can pitch the idea to the ETV management at EPA. EPA has set QA requirements for secondary data that are lower than ETV requirements. M. Blumenstein found the requirements on an EPA web site. The requirements document states that if the quality of the data cannot be determined, a disclaimer shall be added to any deliverable to indicate that the quality of the data is unknown.

J. Dyson cautioned that many times existing plant data is confidential.

After some discussion, the group decided that NSF and EPA should pursue development of a way to disseminate existing data.

Mobile Emergency Response Systems Discussion

B. Bartley asked the group if they think there is a need for mobile emergency response systems protocol separate from other ETV protocols. J. Biberstine asked whether most emergency response systems are using commercially available components that are already certified. J. Dyson asked whether it is within the jurisdiction of ETV to verify

emergency response systems, since most are military systems. Bruce Bartley noted that during hurricane Katrina, NSF did assemble a list of systems that had some treatment components used in these systems, ETV verified. The group thought that concept could work as well as verifying a complete system. After some discussion, the group decided if anyone wants a verification of an emergency response system, existing ETV protocols should be used.

Infrastructure

B. Bartley explained that the ETV Water Quality ProtectionCenter, also administered by NSF, has funding for infrastructure related work. The Water Quality Protection Center is looking for a joint effort with the Drinking Water Systems Center. B. Bartley explained that EPA is keenly interested in technologies for repair or rehabilitation of pipes. Are there any other issues that could be looked at? J. Cleland replied that in-place pipe lining technologies are becoming very important. J. Biberstine asked whether ETV should be evaluating the life of pipe liners. B. Bartley added that support or resistance for biofilm growth could be an issue. T. Stevens from the Water Quality Protection Center joined the discussion. T. Stevens stated that ETV wants to have a stakeholders meeting on infrastructure issues and technologies. ETV wants both the drinking water and waste water sides to be involved. T. Stevens told the group to tell B. Bartley if they would like to be involved with such a meeting.

B. Bartley asked the group whether the group wants to have more frequent conference call meetings instead of face-to-face meetings at NSF. The group agreed that conference calls were a better option.

The meeting was adjourned.