

## Minutes

### National Work Group on Leak Detection Evaluations (NWGLDE) Meeting

Annapolis, MD, September 30 – October 2, 2009

#### Welcome Visitors

- No visitors in attendance.

#### Team Leader Updates

##### ATG Team

- OPW EECO system and iSite Sentinel – did probe comparison. Listed May 19, 2009.
- Caldwell had name change - purchased by Simmons.
- TOPS device manufactured by Pneumercator – listed August 20, 2009.
- USTest still awaiting data. Status : under review

##### VTTT Team

- OPW had asked that certain ATGs be identified as tank tightness test methods. Has since dropped the request. VTTT team from now on will not list ATGs as tank tightness test and will remove those that have been listed without appropriate verification.
- July 20, 2009 KWA let Lamar know that Alert Systems Technology would possibly be revising its 3000 and 4000 systems listings. Lamar indicated that he would discuss this with Randy Barnes since he is planning to attend this meeting.
- Veeder-Root – there is an issue with some older models still on the list. Region 10 had requested that superseded models be de-listed, William Moore provided rationale on why they should remain listed.

Lamar Bradley discussed other issues related to ATGs: Action plan addressing ATGs evaluated using VTTT protocol and equipment evaluated for testing at low tank levels

- **Issues** - Previously discussed in Sacramento - list ATGs listed for 0.1 leak rate in ATG protocol 0.1 and 0.2 - unsure how these were listed with 0.05 leak rate.
  - Many evaluations used ATG protocol and not volumetric tank tightness test protocol. Simply augmented with statistical comparison (no testing).
  - Issue one: Lamar **developed list and** the ATG team **developed plan** to contact manufacturers of the group that doesn't have evaluation data pertaining to 0.05.
    - Will revise for those who did evaluate their equipment with volumetric tank tightness test method.

- Also revise listings for those that would remain - indicate that this equipment is evaluated for 0.1 but not evaluated for precision tank tightness test.
  - Issue two: **level testing** – protocol assumes that tested at 50% and 90% consistently successful at any level.
    - Requires four criteria one - 12 test, evaluate reviews and confirms
    - Also provided a list of manufacturers to contact to confirm additional testing (with documentation) was conducted. If not then listing will be revised to indicate not less than 50%.

### **CITLDS Team**

- No activities this period.

### **NVTTT Team**

- KWA working with Tank Tech to develop a protocol for testing field installed containment systems, Phoenix Systems, integrating Tanknology VacuTest tank tightness test. There will be a presentation on this protocol and requested modifications to the VacuTest listing on Thursday morning.
- The Tanknology VacuTest listing was revised to include testing at any product level, including empty, provided the total ullage volume does not exceed 20,000 gallons.
- Tanknology's address and telephone number were updated on all of their listings and a cross reference from NDE Environmental Corp to Tanknology was created.
- USTEST wanted change in ownership. The team is waiting on additional documentation.

### **Line Leak Detection Team**

- Franklin Fueling still under review.
- Veeder-Root's TLS 450 introducing new transducer. Will possibly list separately.
- Add TLS 450 to VR listings. Have proposed clarification for DPLLD and PLLD.
  - Team in the process of deciding how these terms should be described. At the "system features" or "glossary" for now. Later add to the "glossary" since it is applicable to more than one listing.
- The term WPLLD will now be described on listing and not added to the glossary.
- Added new series 8590 for the TLS 450 Consoles.

### **SIR Team**

- No method reviews completed this period.
- Provided update on Victoria Automobile Chamber of Commerce Fuel Manager SIR v.1.5 – Draft listing developed and sent 8/1/09. Method has been evaluated and can be listed

pending agreement to use ½ performance standard as leak threshold instead of performance standard. Awaiting reply from vendor. (No change in status since 8/2008.)

- The question was raised whether or not SIR protocol needed to be rewritten.

### **Interstitial Monitoring and out of tank detector methods**

- VR listing changed designation of operating principle from reed to float switch.
- TYCO Controls LLC removed from the list. Tyco Thermal Controls, LLC's LS-3 Sensor. Team has not received any information from the company since 6/11/07. The last e-mail response from Jeffrey Murphy indicated that he would check with Ken McCoy of the company. Testing doesn't appear to be applicable to typical UST systems.
- Preferred Utilities Manufacturing Corporation's PWCN4-CDXRxxx Controller, RBS Non-Discriminating Sensors for Sumps and Containments; PS-LDS Non-Discriminating Sensor for Sumps and Containments; and PLS Non-Discriminating Sensor for Reservoirs. Completed by Bill Moore, 6/05/09.
- OMNTEC Mfg., Inc.'s LWF sensor. Company wants sensor included on its current Interstitial Detector (liq. phase) listing. Company has results sheet signed by KWA that lists 1993 as original date of evaluation but also indicates a revision in 1998. Team asked for complete evaluation, but company is unable to provide. Unsure how the sensors were evaluated and what is the applicable performance data. Working on resolution of issue.
- Cambria Corporation requested NWGLDE list its EOS80, EOS100, and EOS120 discriminating interstitial sensors. Company wants sensors listed with Beaudreau's Model 522, and 522T monitors. Also Cambria's Mark I Monitor and any system that is compatible with RS 232 communications. The EOS100 has been sold by Beaudreau Electric, Inc but manufactured by Cambria. Beaudreau has provided documentation to validate this claim. Working on listing.
- Revised Veeder-Roots' Single-point Mini Hydrostatic Sensor – 794380-304 that was incorrectly listed as a reed switch instead of float-switch.
- Completed review of OPW's comparison of performance of its SiteSentinel Console with and without The Intelligent Sensor Interface Assembly. Although evaluation confirms no appreciable degradation of performance with The Intelligent Sensor Interface using a "representative" sample of a number of types of sensors, team is unable to complete requested listing due to incomplete analysis of full range of applicable systems.

### **AST Team**

- Received new proposed protocol from Varec that adapts the currently approved protocol for a mass-based analysis method to develop a volumetric based method. This will be a new separate protocol from the current mass-based protocol.

### **Bulk Storage Tank Team**

- Provided update that several issues with Vista listings are still outstanding.
  - Spoke with Doug Mann to address issues with three listings.

### **Secondary and spill containment test methods**

- No activities this period.

### **Administration Team**

- Hardcopy list date: December 7, 2009. Get completed listings to Curt for next addition a.s.a.p. Plan to have Edition 17 out as early as possible in the new year.

### **Protocol Under Review**

- As noted in the AST Team update, one protocol under review – AST protocol development for a volumetric based system.

### **Team Assignments**

- SIR Team – Added Shaheer as member.
- IMOTDM Team – Removed Shaheer as team member.

### **New Business**

- **Alternative Fuels Survey**
  - Lamar provided results of the survey and the group briefly discussed the following:
    - Not conclusive.
    - Indicates a lot of interest.
- **Discuss High Throughput Facilities**
  - Tim Smith continued a discussion of the subject begun during the previous meeting in Sacramento. Discussed the following: whether current leak detection methods are performing release detection adequately; how newer continuous ATGs are addressing regulatory requirements; and what, if anything, needs to be done by regulatory agencies.
- **Changes in Consoles**
  - Some vendors are updating systems in the field without updating or upgrading their listing.
  - What can and should be done? Shouldn't software that addresses known problems be made available automatically by vendors? Greg Bareta will develop a white paper on the topic and identify examples of known functions not addressed by older software and discuss hardware and software modifications, for instance. Potential next steps could be to send draft letter to Chairman prior to sending to vendors.

## **Vendor Presentations**

### **Welcomed Visitors –**

- See list of attendees below that contains both visitors and group members.

### **Tanknology (Kevin Keegan)**

#### **Proposed VacuTect revision**

- Seeking language change to include an additional method specific to the Phoenix system certification. The issue is with high vacuum being placed on interstitial space. Vendor asking to pull less pressure in line than manufacturer's requirement. There had been no third party testing done at the proposed reduced vacuum on the specific system that would demonstrate that the minimum leak rate, PD, and PFA could be achieved. Also, there was no official statement from Xerxes that the proposed method was suitable for their Phoenix product.

#### **Interstitial space testing**

- Provided briefing on interstitial monitoring concerns such as water and fuel in the interstice. Company has procedure to determine liquid in-place and can pump water using a super vacuuming device.
- Noted that most tank manufacturers specify requirement that there be zero liquid in the interstice.

### **Varec (George Thuemling)**

#### **Volume based AST test protocol**

- Provided modification of existing AST mass-based test protocol for development of a volumetric based protocol.
  - Discussed why modification is needed: 1) Improves management of risk by catching leaks sooner rather than later; 2) provides ability to perform more frequent (i.e. greater than annual) testing as presently performed; 3) technology has improved; and 4) cost-benefit for owners and operators.
  - Wants to use California philosophy for AST's – the lower the leak threshold the less frequent the number of checks.

#### **Synopsis of group discussion**

- Cuts test from 24 tests to 6 – (vendor indicates that 24 prohibitive due to the need to have personnel present).

- Approach same here as with original mass-based protocol.
- AST Team to discuss further and provide feedback to vendor.

### **Alert Technologies (Randy Barnes)**

#### **Work group allowance of variations of protocols**

- What does the work group require for variance to existing certifications?
  - Use of peristaltic pumps erroneously shows constant leak rate.
  - Considering avoiding having to determine location of water table by using a microphone while pressurizing the lining during the underfill test.
  - Seeking recognition on high alcohol-based fuels.
  - Asked about methanol fuel approval listing.
  - Asked about criteria for low-level variants and what's currently required.
- Lamar Bradley mentioned that the workgroup has established low-level testing criteria. NWGLDE will post the 1997 letter more prominently.

#### **Synopsis of group discussion**

- (low-level testing) - does level of product affect low-level testing (yes). General leaning toward requiring change in leak rate based upon level. This will affect ATG and CSLD methods. ATG team to publicize 1997 letter.

#### **ETV Project (Joe Carvitti)**

- Joe Carvitti of Battelle (a contractor to EPA's Office of Research and Development) provided a brief overview of the Environmental Technology Verification (ETV) project that he is involved with. The project is designed to determine suitability of existing leak detection equipment for use with biofuels.
- Invited attendees to participate in the effort.
- Indicated that EPA's original test protocols would be the starting point for the development of the test plan that would be used to evaluate current leak detection equipment with regard to ethanol-based fuels and potentially biodiesel-based fuels.
- Interested individuals may contact Tim Smith of EPA's Office of Underground Storage Tanks by e-mail at [smith.timr@epa.gov](mailto:smith.timr@epa.gov).

#### **Veeder-Root (Kent Reid)**

## **Leak detection issues concerning alternative fuels**

- Alcohol does absorb water when mixing occurs such as during fuel drops.
- Sensors today identify water on the bottom. This may not happen in ethanol-based fuels.
- After phase separation there will be high concentration of water present.
- Contends that E85 is generally not a problem with regard to phase separation.
- The sensor should see an initial large introduction of water. However, after phase separation the sensor may not detect water.
- Current methods that are available to find water: water finding paste, filters determining phase separation.
- Half percent water by volume to cause a separation; water float will move when 1% water by volume is reached.
- Ethanol can absorb 4% water without a volume change.
- Experimentation showed water float only rose on water not in alcohol-water mixture.
- VR planning new products to address water/ phase separation:
  - Product A - retrofit solution will identify phase separation.
  - Product B - all in one high-tech device that addresses: phase separation, water monitor, and has ethanol monitoring capabilities.
- Existing water sensing methods:
  - May provide inconsistent or misleading results.
  - Existing methods may no longer apply.
- What will the work group want with regard to certification for new solutions?

## **Biodiesel compatibility**

- Diesel and biodiesel coefficients of expansion are similar. Do existing algorithms apply? (answer yes)
- VR had questions for workgroup - what are the certification requirements? Third-party evaluations required or are manufacturer's statement acceptable.
- Quality control is an issue. There is variation in feedstock.

- Concerns with blend ratio limits.

Ken Wilcox noted that industry is already dealing with different densities and coefficients of expansion. The Bureau of Standards has mixed crude from all over the world to develop standard coefficients of expansion values.

### **Synopsis of group discussion**

- (*Alternative fuels related presentation*) Stated during presentation and discussed further that procedures are in place with regard what NWGLDE will do regarding certifications for new solutions. For example, protocol development is still an encouraged option for third-party evaluations. Need to think about whether protocol needs to first be developed for new sensors that are planned. Also, the ETV project, identified during the meeting, should help determine how to address issue in the future. Noted during the presentation and reiterated that final decision is to address issues and communicate with regulators to assist in solving such issues.
- (*Biodiesel compatibility*) Information is slowly becoming available. Again, ETV project should be helpful. Expecting information from National Biodiesel Board (NBB) that will be much anticipated. Will discuss requirements after receiving white paper from NBB and other sources.

### **National Biodiesel Board (Steve Howell)**

- Steve Howell provided a brief update on status of biodiesel (production statistics and near future projects):
  - Identified sales of B100 of 700M gallons (vs. 30 B gallons diesel) in 2008 mostly used in B20 and lower blends.
  - Renewable fuels standard requires 1B gallons of biodiesel in 2012 - equivalent of B5 in 20B gallons of diesel fuel.
  - Showed map of production locations and diverse locations (173 plants).
- Seeks approval for path forward for B20 and lower blends.
- Also seeks approval for path forward for B21 and greater blends (stated that certain elastomers and metals are adversely affected by >B20).
- Stressed ASTM spec. is crucial in the major focus of NBB.
  - Identified important ASTM standards such as D6751 (100% blend stock); D975 (B5 or lower for on and off road); D396 B5 or lower for on and off road); and D7467 (B6 to B20 for on and off road).

- Provided some comparison between biodiesel and ethanol – mentioned that bio component is miscible in any blend with diesel. Does not come out of blend if water is present. Bio component is not hydrophilic (will separate so current leak detection methods will work).
- Proposed white paper to address following set points:
  - **B20 and lower blends approval** – plans to provide synopsis of existing data, information on physical chemical properties, etc. Stressed fuels must be in specifications - if not, it's not only detrimental, but also a federal offense.
  - **B20 to B100 approval** - not necessary to have any additional testing – up to individual manufacturers to provide letter to group, not across the board like B20 and lower approval.

### **Synopsis of NWGLDE discussion**

- Will need to carefully review information provided by NBB along with data and other information from available sources before deciding upon path forward.

### **Ken Wilcox miscellaneous issues**

- Tank tightness test protocol - vendors must compensate for water. However, some evaluations did not address. There are options to compensate for water.
- Air pockets in product lines - will affect electronic line leak detectors and tank tightness testing.
- If there's a new protocol, what's the willingness for manufacturer to get re-evaluated?
- High throughput facilities - issues with site configurations, real-world study is needed, time frames to perform the test – if owners don't have the time, they can't and won't do leak detection.
- Address “acceptable leak rate” - too many failures below this set point.

### **Synopsis of NWGLDE discussion**

- These issues were discussed at length.

### **New Business (Continued)**

- Proposed Throughput article for LUSTLINE – has received greenlight from group to send to Ellen Frye.
- Potential ideas for other articles:

- Addressing biodiesel – based upon information from white paper anticipated from NBB.
- ATG evaluated at 0.1 gph leak rate – not a tank tightness test in all instances.
- Compare relationship between leak rate, Pd and Pfa, and threshold.

## **Old Business**

- **Discuss Standard Operating Procedures (SOP) Manual**
  - SOP manual designed to address typical listing related issue on a team-by-team presentation. Will feature compilation of all team related guidance and other such products. Will serve to orient new members and provide continuity of operations of the NWGLDE.
  - Tim Smith routed the latest draft of the SOP manual following the Sacramento meeting and additions by Curt Johnson.
  - Received beneficial feedback and modified the draft accordingly. Resent to group with request to team leaders to populate their sections or discuss with him to assist in filling in some missing parts.
  - Received additional written and verbal feedback from Lamar Bradley, Peter Rollo, and other members.
  - Next steps – integrate latest comments and circulate new draft focusing on addressing any blank areas that might remain.
- **Discuss wireless ELLD systems**
  - Concerned that equipment will not work unless proper communication connection is maintained.
  - Initial thoughts that issue is beyond scope of NWGLDE's focus. However, communication is an integral component of leak detection functionality and therefore very much within the group's scope.
  - Greg Baretta will draft letter to circulate to the group for input.
  - Group could contact manufacturers to assist in developing requirements or limitations on functionality of this type of equipment.
- **File Retention Committee**
  - Curt met Jon Reeder in Florida and received his files.

- Curt now has John Kneece's files on a CD.
- Bill stressed that scanning software allowing Optical Character Recognition (OCR) should be used.
- Lamar discussed some leading software that could be beneficial in converting the group's paper files:
  - Edocs software.
  - Filenet.
  - Freeware such as CUTEpdf.

### **Next Meeting**

- Projected dates: March 24, 25, and 26 in Mobile, Alabama.

### **Appoint Member to take Minutes at next meeting**

- Helen Robbins volunteered to take the minutes.

### **Group Meeting Adjourned**

### **Begin Team Meetings**

### **Attendance List**

**(See below)**



ATTENDANCE LIST  
**National Work Group on Leak Detection Evaluations**  
 Annapolis, Maryland  
 September 30- October 2, 2009

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