

March 23, 2001

Sam Gordji, Ph.D.
Engineering & Statistical Consulting
SSG Associates
202 Virginia St. Suite 301
Oxford, MS 38655

Dear Mr. Gordji:

Further to our brief telephone conversation, as you may know, the UW has entered into a cooperative agreement with the US EPA, Office of Underground Storage Tanks, to review and evaluate the existing seven "EPA" leak detection (equipment) test protocols and to recommend improvements, including, if appropriate, substantial rewrites and/or consolidation of their content. We are working with the National Work Group on Leak Detector Evaluation and will ask their input in development of a final report and recommended revisions to the protocols.

We are now soliciting comments on our web page through March 30, 2001:
<http://epaprotocolreview.engr.wisc.edu>

Your name was suggested to me as a possible participant in an ad hoc committee that is to reflect the opinion of potential UST/AST leak detection equipment users. It is anticipated that a draft report will be prepared based upon the comments that we are now collecting. Your insights would be appreciated on the web page and the review of our final report.

A further dimension of this project may be to participate in the development of new test protocols when needed; at present we are soliciting suggestions on how to organize and to fund this activity.

Please let me know if you are willing to help us with this project. Thank you for taking time to talk with me.

Sincerely,

Handwritten signature of J. T. Quigley in cursive script, followed by the letters "mc m".

J.T. (Jack) Quigley
Professor Emeritus

May 2, 2001

Dr. Sam Gordji
Engineering & Statistical Consulting
SSG Associates
202 Virginia St.
Suite 301
Oxford MS 38655

Dear Dr. Gordji:

Further to my letter of April 16th regarding EPA Protocol Review, I hope that you have received and had a chance to review the accompanying materials.

In the last paragraph of that letter, I introduced the possibility of a "Peer Review Panel" for development of new leak detection and monitoring protocols. I asked that you consider what administrative arrangements (i.e. fee, expenses appointments and/or procedures) might be appropriate for your participation.

In order to follow up on that possibility, I am taking the liberty of enclosing a sample of a proposed new protocol and ask that you consider this as typical of a review/rewrite request.

Please review the enclosed "Proposed Method for Testing Vacuum Interstitial Monitors" and comment to me if you wish, but do let me have your thoughts on what would be an appropriate basis for your continuing involvement in this process.

Thank you again for your help.

Sincerely,



J. T. (Jack) Quigley
Professor Emeritus
Program Director

Enclosure

May 14, 2001

Dr. J. T. (Jack) Quigley, Professor Emeritus
Program Director
Department of Engineering Professional Development
College of Engineering
University of Wisconsin
Madison, Wisconsin

Dear Dr. Quigley:

Thank you for your letter of May 2, 2001 requesting I become a member of Your team and sending me the " Proposed Method for Testing Vacuum Interstitial Monitors " for review. As I mention in my last E-mail the Protocol looks okay. Below are my recommendations:

Use the mathematical equations and the analysis already available in the ATG manual (EPA/530/UST-90/004). Partial inclusion of one or two equations as it is now may be a bit confusing to the testers. We need to either include all the equations and tables from ATG Manual or simply refer the readers to the ATG Manual. An example then should follow and show the step-by-step analysis of the data and a detailed explanation of the results.

You already have a copy of my letter to Mr. Drew Azzara of ASTM and others concerning the assumption of normality that is used to analyze data for SIR and ATG. I am sending you my memo to Mr. Curt Johnson of NWGLDG concerning the use of Quattro and Excel. I would like to recommend that for all the analyses that we undertake in the future we employ either SAS or Fortran using IMSL subroutines. There wouldn't be any doubt about the accuracy of the results if we use either of the above packages.

Dr. Quigley, here are my thoughts on what would be an appropriate basis for my continuing involvement in this process. I would like very much to be a part of this important project as much as my time allows and I believe that I can contribute a significant amount. Because this is a good cause, I will take a fraction of my regular pay of \$100 per hour. Of course I would expect to be reimbursed for expenses. Thank you.

Sincerely,

Sam Gordji

March 27, 2001

Dr. Jack T. Quigley, Professor Emeritus
Department of Engineering Professional Development
College of Engineering
University of Wisconsin
Madison, Wisconsin 53706

Dear Dr. Quigley:

I enjoyed our brief conversation in Albuquerque last week where we talked about my becoming a member of your team. Thank you for your letter of March 23, 2001 requesting my input for possible modifications to the EPA's original seven protocols. The original seven protocols may be adequate, for the technologies they test, with a few changes. Some of the minor changes have been reported and have been "unofficially" integrated into the protocols. I assume that the third party testers make sure that those corrections are included when testing their clients.

One major modification that should be a part of the protocols is the non-normality of the test data used to test SIR and ATG systems. I have raised this issue with the EPA, ASTM, and the NWGLD. To date these organizations have shown little interest.

Under pressure pipelines and tanks need to be regulated if they are located near "fault lines". There are some good articles on pipelines that are under pressure and may bust in case of an earthquake. This approach uses FEM method to investigate the pipelines under pressure.

Also, sometime in the future, possibly for the next generation of the protocols, the temperature effect needs to be included. I have researched this area for some time. I will post my original letter to Mr. Azzara of ASTM that covers the non-normality of test data and two of my research papers to the following web site.

<http://epaprotocolreview.engr.wisc.edu>

These two papers cover temperature effect and pipelines under pressure near the fault lines.

Thank you for inviting me to be a part of this important project. Please give me a call at 662-915-5022 or email me at Sam Gordji [samgordji@hotmail.com] so we can work out the details of my activity.

Sincerely,

Sam Gordji

March 26, 2001

Dr. Jack T. Quigley, Professor Emeritus
Department of Engineering Professional Development
College of Engineering
University of Wisconsin
Madison, Wisconsin 53706

Dear Dr. Quigley:

Thank you for your letter of March 23, 2001 requesting my input for possible modifications to the EPA's original seven protocols. The original seven protocols may be adequate for now with a few minor and major changes. Some of the minor changes have been reported and have been "unofficially" implemented into the protocol. I assume that the third party testers make sure that those corrections are included when testing their clients.

The major modifications that should be a part of the protocols are the non-normality of the test data used to test SIR and ATG. Under pressure pipelines and tanks need to be regulated if they are located near the "fault lines". There is a good article on pipelines that are under pressure and may bust in case of an earthquake. This approach uses FEM method to investigate the pipelines under pressure. Also, sometime in the future possibly for the next generation of the protocols the temperature effect needs to be included. I will post my original letter to Mr. Azzara of ASTM that covers the non-normality of the test data and my two other research papers to the following web site.

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My other two papers cover temperature effect and pipelines under pressure near the fault lines. Thank you for inviting me to be a part of this important project.

Sincerely,

Sam Gordji

March 26, 2001

Dr. Jack T. Quigley, Professor Emeritus
Department of Engineering Professional Development
College of Engineering
University of Wisconsin
Madison, Wisconsin 53706

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My other two papers cover temperature effect and pipelines under pressure near the fault lines. Thank you for inviting me to be a part of this important project.

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Sam Gordji