



*Published as an informational service to Owners and Engineers of Steel Water Storage Tanks by TANK INDUSTRY CONSULTANTS
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CHAIRMAN'S CORNER

Perpetuity -- "Existence forever"

Some of you may have heard of some organizational changes here at TIC®. When I first started consulting in the water tank industry in October of 1979, I used TANK INDUSTRY CONSULTANTS under my signature as a description of the type of services being offered by E. Crone Knoy, P.E. Soon, the name of the firm evolved to be TANK INDUSTRY CONSULTANTS. I did this because I wanted to develop a firm which could last beyond the professional career of the founder. I wanted the organization itself to be a growing, living entity. I distinctly remember the first time I sent an unaccompanied employee to perform inspection work. Our client said, "Crone, if you say he can do it, then I believe he can do it." This was the first real deepening of the "tap root" of the TIC organizational tree.

As a part of the growth process, Steve Roetter was recently named President, and Bill Daugherty and Chip Stein are named Vice Presidents. Bill will be in charge of all regional offices and our marketing and client services activities. Chip will be directing our engineering and administrative services. They will report to Steve who will also have our inspection services and contract administration functions in his direct chain of command. We have assembled an organization of 35 engineers, technicians, managers, and support personnel. The blending of technicians and support personnel, many with over 30 years experience in the tank field, with engineers who have been trained to be "proactive" to today's ever-changing environmental and technical needs has made us not only the largest water storage tank specialist engineering firm, but also the one with the best tooled staff to meet our client's needs.

Your question is now probably, "What are you going to do?" So far, as CEO I have found no slackening of my personal pace. I still have responsibility for all engineering in the states in which I am the registered engineer in responsible charge. Therefore, I assist in the development of and proof and approve all prebid inspection reports and specifications and provide input on all functional aspects of our projects. As we delegate our other P.E.'s to be the responsible person for activities in the various states, I hope to become more of a senior consultant, and be able to devote more time to customer contact, industry committees, and expert witnessing.

By making these organizational changes, we are offering our clients, our employees and their families, and the steel tank and coating industry, assurance that we will be here for them, no matter what happens to the founder. Is TIC going to be a perpetual organization? That's our intention!

◀ Crone Knoy

TIC CONTINUES TO MEET THE EVER-CHANGING NEEDS OF TANK OWNERS

Since the inception of TIC almost 12 years ago, our services have continually changed and improved to meet the needs of the tank industry. Not only have our tank evaluation reports and detailed technical specifications become more thorough and precise, but when regulatory and public concern arose concerning the removal of lead-based coatings from water storage tanks, TIC was at the forefront of technology through active involvement in the SSPC Lead Paint Removal Committees. We continue to communicate with regulatory officials, tank owners, contractors, and suppliers to stay abreast of the very latest in regulations and technology.

When TIC began working with clients with more multiple tanks in their system, it became evident that our clients needed some way to prioritize their tank maintenance needs. It was for this reason that TIC developed a computer program designed to systematically rank and prioritize a large number of tanks. By prioritizing our clients' maintenance needs, water systems are now able to more judiciously plan rehabilitation projects and budget funds. It is through this type of maintenance tracking that our clients are best meeting their water system's short and long-range goals.

After inspecting well over 1,000 existing tanks, it has become apparent to the engineers and staff at TIC that the maintenance cost of steel tanks could be drastically reduced if these tanks were designed and constructed properly from the start. TIC met these challenges while developing designs and specifications for aesthetically pleasing tanks with reduced future maintenance costs. We utilize the most advanced coating systems (for aesthetics and corrosion resistance) while keeping the new tank cost as low as feasible. Because of our efforts in this area, we have met our clients' demand for high-quality, economically sound new tank projects.

TIC will continue to meet the ever-changing needs of tank owners by working closely with our clients to learn what their concerns are, and through extensive volunteer work with the water storage industry standards-making organizations.

◀ Bill Daugherty

AWWA ANNUAL CONFERENCE PHILADELPHIA CIVIC CENTER - JUNE 23-27, 1991

The AWWA Annual Conference gives us our best opportunity of the year to meet new friends and renew old acquaintances. It's always great to have people stop by the booth and say, "I just got the latest issue of Tank Talk®. I'd like to hear more about....."

This year we will be at booth #5103. Stop by and let us know what you'd like to hear more about.

SELECTING A CONSULTANT

As a tank owner or prospective tank owner, you probably have not had a lot of experience in acquiring technical expertise for your tank needs. Until the past dozen or so years, you had to rely on general consultants, or more frequently, the assistance of new tank or tank maintenance contractors. Perhaps it is because of this history that many municipalities, water authorities, or private owners are not aware of the most effective procedures for soliciting for professional engineering services.

One very successful method has become law in many states. This procedure involves the solicitation of proposals to perform a defined scope of work. This scope may be project oriented, or may be for a variety of services over a specified time period. Interested firms submit their qualifications and experience in a format that will enable you to evaluate the proposals. Evaluation criteria which should be used generally includes the following:

- Examples of projects of similar scope
- Experience & training of firm & staff members
- Ability to respond quickly to your needs
- Size of firm
- Longevity of firm
- Breadth and depth of services offered in house:
 - Structural design, including retro-fit
 - Code interpretation
 - Initial evaluation
 - Specification preparation
 - Contract administration
 - Quality assurance programs
 - Knowledge of environmental regulations
 - Work-in-process project representation
 - Corrosion control engineering
 - Metal and coating measurement abilities
- Limits of general liability insurance coverage
- Limits of design liability insurance coverage
- Limits of environmental liability coverage
- Claims experience

Also, you should have confirmation that the firm transacts business as a professional engineering firm, including all of the legal ramifications of this type organization. Contracting firms, coating suppliers, or inspection agencies do not have the legal obligations that professional engineers have.

Only after selecting the firm that you feel can best fulfill your needs (based on qualifications) should you discuss fees. Then, if you aren't happy with the fees negotiated, you should negotiate with the next best qualified firm until you have reached a mutually agreeable schedule of fees.

One word of caution that an old farmer told a city-slicker trying to buy feed for his horse at a reduced price was, "Son, if you want the oats that have already been through the horse, they come a lot cheaper."

◀ Steve Roetter

DESIGNING STEEL TANK COATING SYSTEMS FOR COMPLIANCE WITH TODAY'S STANDARDS

Designing coating systems for use on the exterior and interior surfaces of steel tanks has never been a simple task. Many factors, including economics, service life, ability to top-coat, tank location and aesthetics weigh heavily in the decision-making process. The recent introduction of environmental regulations has resulted in concern about the application of new coatings as well as the removal of existing coatings, making the design of an optimum coating system even more complex. It has become critical that the tank owner and specifier be aware of all performance criteria for each coating system as well as the potential environmental repercussions when designing the coating system.

The most widely used standard for determining coating system candidates for use on water storage tanks is AWWA D102 Standard for Painting Steel Water Storage Tanks. Other applicable standards include those established by the Steel Structures Painting Council (SSPC) as well as coating manufacturers' published literature and product data sheets. TIC® also investigates which environmental regulations must be satisfied. The applicable environmental standards mandate acceptable levels of a variety of items including the amount of lead present in the air and on the ground during cleaning operations, the amount of volatile organic compounds (VOCs) released into the air during painting operations, and the amount of metals, organics, and microbiological growth present in the water.

In the past, the coatings specifier for the interior water storage tanks needed only refer to those requirements set forth in AWWA D102-78 and satisfy the requirements listed by USEPA and state EPA or health departments. However, AWWA D102-78 has been in the state of revision for the past ten years, and as of April 7, 1990, the USEPA withdrew all present coatings approvals. At that time, coatings meeting NSF Standard 61 were to be available for individual state acceptance. As of the date of this article, the NSF or other approved certification facilities have issued only an abbreviated list of approved interior coating systems. In order to fill the void left by this lack of approved coatings, a majority of the states have decided to require compliance with the latest USEPA approved list until a more comprehensive list can be issued by the NSF. At a recent joint meeting of several water industry organizations, including AWWA, it was recommended that the compliance date for NSF Standard 61 be January 1, 1992.

Although the proper specification of coatings for the interior and exterior of water storage tanks has never been an easy task, it has become even more complex with the advances in technology within the coatings industry and the implementation of environmental regulations. Now, more than ever, the coatings specifier and the tank owner must work together to achieve their common goal of a long-lasting, environmentally safe coating for the water storage tank.

◀ Chip Stein

FACES IN THE FIELD

No, this article isn't about the drivers in the recent Indianapolis 500. Since our headquarters office is within sight of the famed Indianapolis Motor Speedway, we could probably let you in on some of the "inside scoop" about the race and drivers, but racing isn't our specialty -- water tanks are. So this article is about some of the many experienced, top-notch members of our corps of field technicians. These are the representatives of TIC that our clients see most often. We have some new faces in the crew that we'd like to tell you about, plus some accomplishments that the field technicians probably wouldn't brag about themselves -- so we will.

Jeff Cannon and Tim Knoy are the two latest TIC field technicians to become NACE Certified Coatings Inspectors. The NACE training program is long and intensive. The Certified Coatings Inspector designation is one of the highest and most respected in the industry. We're extremely proud of Tim and Jeff, and applaud their hard work and desire to become more knowledgeable within their area of expertise.

New faces that we want to introduce you to include gentlemen with many years of experience as coatings applicators, abrasive blasters, welders, fabricators, and crew foremen. Steve Nihan comes to TIC with many years of experience in the tank industry, including several years as a coatings inspector on the west coast. Paul Hanna is an experienced boilermaker and welding and x-ray technician. Danny Lucas has extensive experience in the blasting and painting of both new and existing tanks. Tim Green has gained much of his expertise thanks to several years in the Air Force where he was trained as a Utility Operator and Environmental Support Specialist, plus his continuing education through AWWA and other industry organizations. Ken Flint has also come to us from the west coast where he worked for several years for a large inspection firm. Ernie Conley has more than 25 years experience in the water storage industry. And last, but not least, Lloyd Sims brings with him credentials as an ASNT Level II on x-ray, ultrasonics, magnaflux and dye penetrant, and has completed NACE Basic and Intermediate Coating Inspector Training programs.

We think you'll agree that we have every reason to be proud of these field technicians, plus the other highly-skilled technicians that make up the field inspection department of TIC. It's largely through their efforts and skills that TANK INDUSTRY CONSULTANTS has become the most respected name in water storage tank engineering services.

SEMINAR SITES FOR 1991/92 TIC SEMINARS

In the winter of 1991/92, TANK INDUSTRY CONSULTANTS will again be hosting a two-day seminar entitled "Water Storage Tanks - Design, Construction & Maintenance." This winter, the seminars will be held in Orlando, FL; Indianapolis, IN; and Newark, NJ. If you would like more information about the seminars, please contact:

Linda Reed, Seminar Coordinator
Phone: 317/244-3221 FAX: 317/486-4708

MORE NEW FACES

The field inspection department of TIC® is not the only area where we have new faces. Two new engineers have joined our staff in the Headquarters and East Coast offices.

Mike Crist, a civil engineering graduate of Rose-Hulman Institute of Technology, has worked at TIC the last two summers as an engineering assistant, helping out with computerized drafting, in the field, and wherever needed. We're pleased to finally have Mike as a full-time engineer.

The newest face at our East Coast office is Larry Stempkowski. Larry is also a civil engineering graduate, but from a university a little further south -- the University of Central Florida. Larry is an E.I.T., and will be working closely with our east coast clients.

AND SINCE WE'RE BRAGGIN'.....

From time to time we like to update our readers on the new tank projects TIC is involved in. New tank projects give us the opportunity to "practice what we preach" regarding the inclusion of corrosion prevention in the design stage. Through the proper design and construction of water storage tanks, you can eliminate many of the tank's maintenance requirements, thereby achieving a high-quality structure for our clients that is more economical in the long run. New tank construction projects presently under way or recently completed include:

- Bryan, OH - 1,000,000 gallon spheroid - contractor, CBI Na-Con, Inc.
- Dayton, OH "Kitridge Tank" - 500,000 gallon spheroid - contractor, CBI Na-Con, Inc.
- Dayton, OH "Airport Tank" - 500,000 gallon spheroid - currently out for bid
- Lynchburg, VA "Leesville Road" - 3,000,000 gallon ground storage tank - in the planning and specification stage
- Long Island, NY "Jennings Road Tank" - owner, Suffolk County Water Authority - 1,000,000 gallon spheroid - currently in the planning and specification stage
- Newburgh, IN - Owner, Indiana Cities Water Corporation - 500,000 gallon elevated tank - currently in the planning and specification stage
- Noblesville, IN - Owner, Indiana Cities Water Corporation - 750,000 gallon elevated tank - currently nearing the construction stage
- North Montgomery County, OH - 1,000,000 gallon elevated tank - currently in the planning and specification stage

In addition, we are serving as design or inspection consultant on many other new tank projects throughout the country.

If you're planning a new tank construction project, give us a call, and we'll explain how the engineering expertise of TANK INDUSTRY CONSULTANTS can help you with your water storage needs.

TIC® -- ENGINEER FOR SPFA TANK OF THE YEAR

Each year, the Steel Plate Fabricators Association names the Steel Tank of the Year. This award goes to the contractors of new elevated, reservoir, and standpipe tanks which demonstrate outstanding use of steel for water storage.

The 1990 Steel Tank of the Year in the reservoir category is the 4,000,000 gallon steel ground storage tank in Hockessin, Delaware. The tank is owned by the Artesian Water Company, Inc., and was constructed by CBI Na-Con, Inc. Engineer for the project was TANK INDUSTRY CONSULTANTS. Project manager for the owner was Bangalore T. Lakshman, P.E.

AWWA STANDARDS UPDATE

Via Tank Talk® we have attempted to keep our friends and clients abreast of the progress of the implementation of AWWA Standards that affect the water storage industry. Through our participation in the AWWA Standards Committee on Steel Elevated Tanks, Standpipes and Reservoirs, we had the opportunity to review and comment on the new D104, Standard for Automatically Controlled Impressed-Current Cathodic Protection for Interior of Steel Water Pipes. We are pleased to report that AWWA D104-91 has been approved and is being prepared for publication.

Also in various stages of revision and approval are AWWA D100 and the Steel Tank Manual. Crone Knoy is chairman on the committee responsible for the formulation of the Steel Tank Manual. Keep your fingers crossed that the Manual will soon be released for publication. The Manual has been many years in the making, and should prove to be an invaluable resource for water storage industry.

AWWA DSS

"Pardon Me, Your Tank is Showing," will be the title of Cindy Knoy's speech at the opening session of the 1991 Distribution System Symposium on September 9. She will show the flexibility of steel and coatings in meeting the aesthetic and structural needs of our water system infrastructure. She will even show some vacation slides (of water tanks of course).

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RISK COMMUNICATION

For years, TIC has advised our new tank project clients to keep their community informed about and involved in the planning of their new water tank. Representatives of TIC have attended, given presentations at, and fielded questions during many town and neighborhood meetings where a new tank project was being discussed. This "up front communication" approach has averted or solved many "NIMBY" (Not In My Back Yard) concerns for our clients. We have addressed their concerns about tank location, style, and safety.

TIC specifications for tank rehabilitation and maintenance projects include the requirement that a representative of the contractor and the TIC project representative personally visit the neighbors and businesses in the vicinity of the tank project, tell them what will be taking place, answer any questions the neighbors have, and make themselves available throughout the tank project to address the neighbors' concerns. We have discovered that what we thought was just good community relations practices, which have alleviated many headaches for our clients, have now been given a fancy name -- Risk Communication.

Much is being written and said about Risk Communication, but the overwhelming majority of the so-called experts in the field are saying just exactly what TIC has been telling our clients for years -- communicate with your community. Nothing is anymore frightening than the unknown, and nothing is harder to deal with than a misinformed or uninformed community banded together to form a "NIMBY lynch mob." Educate the community to the benefits and risks of the project. Explain what steps that will be taken to minimize or eliminate the risks. Address their concerns, and let them know that you will continue to be available throughout the project if they have questions. Just good, old-fashioned communication. It will make a difference in the success of your new tank construction or tank rehabilitation and maintenance project.

◀ Penni Snodgrass

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