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*Process Controls, Manufacturing Information,  
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## **YOUR HEAD START TOWARD A SUCCESSFUL SYSTEM INTEGRATION PROJECT**

### **1. CSIA Member**

As a longtime member of CSIA, TVC Systems follows stringent performance standards in general management, financial management, project management, quality management, human resources, and business development that sets us apart business-wise from other system integrators. This means that your project will not only be developed, engineered, and directed by skilled engineers and technicians, it will also be expertly managed! For details on CSIA, please see the CSIA web-site at [www.controlsys.org](http://www.controlsys.org).

### **2. Solutions-Focused Control Systems Integration**

Being "Solutions-Focused" means we look at the big picture...first and foremost. Bits, bytes and black boxes are simply the means to an end. This includes every step along the way in a successful system integration project from vision studies, preparation of functional specifications, designing, building, and systems testing through installation, start-up, commissioning, and training. Leading, not to just any solution, but to the best solution at a lower-cost compared to using most in-house engineering resources.

### **3. Experienced Technologists**

"Experienced Technologists" is not a term taken lightly by CSIA members. Keeping abreast of rapidly changing tools, techniques, and technologies is a full-time business challenge. By using the industry-standard or leading edge approach involving operating systems, application programs, and communication networks, and requiring PCs, DCS, SCADA, HMIs or PLCs, CSIA members offer expertise you can count on, gained from firsthand experience.

### **4. Successful Business Owners**

Being "Successful Business Owners" is the first step and bottom line for membership in CSIA. To start with, control system integration firms must show a record of profitable business operation for a number of years, with engineering sales content of over \$500,000 annually. They must be committed to following CSIA's "Best Practices and Benchmarks" standards. A good measure of this success is CSIA's members' involvement in some \$1 billion of automation projects annually.

### **5. Independent Thinkers**

"Independent thinking" is what sets us apart. It allows us the freedom to suggest the best alternative for your integration project needs. It means that we can convert our experience with a spectrum of hardware, software, and communications products and services from all the major suppliers and niche firms too - into a cost-effective solution - without attempting to balance affiliations, alliances, or relationships. Call it the entrepreneurial spirit, call it the drive to do it the "better way." We call it like we see it - the best possible System Integration Solutions!

**TVC Systems is ready to give  
your System Integration Project  
a head start!**



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## **COMPANY OVERVIEW**

TVC Systems was originally incorporated on February 10, 1966, as Nels Tyring & Associates, Inc., for the purpose of marketing industrial controls and control valves to the manufacturing and process industries. In 1972 the company became involved with the application of programmable controllers. Soon, customers began to require packaging of control hardware, system strategy, design, and software. TVC responded to this demand with an increased engineering staff, certified instrument technicians, shop and panel fabrication capability, and an increasing focus on the, then, new field of Control System Integration.

Nels Tyring, TVC's founder and owner, began his active involvement in the fields of automation, instrumentation, and controls in 1954. Mr. Tyring served in the position of Vice President of ISA, The Instrumentation, Systems, and Automation Society, and twice as a member of its International Board of Directors, and was a recognized Director Emeritus of ISA, a past member of the governing board Executive Council of the Control and Information System Integrators Association, Inc. (CSIA); a Senior Member of the Society of Manufacturing Engineers; and was active in the International District Heating and Cooling Association; a founding member of the Industrial Computing Society, a member of this Society's Executive Board, and was elected to the honored position of Fellow in that Society; and served on the Faculty Advisory Committee of the New Hampshire Technical Institute. Mr. Tyring published and delivered papers in respected international technical conferences and journals on the subjects of control systems integration, industrial software and the future of the industry. Although Nels passed away in December 2008, we continue to acknowledge his major contribution to our long history and experience in Industrial Automation and Controls.

As a pioneer in control system integration, TVC developed a philosophy of work, requiring the company to always strive to perform its services to result in a project being "On-line, On Time, Within Budget, and Right the First Time." The motto evolved into a continuing company creed during this early period and is a basic part of the company's culture to this very day. The philosophy has resulted both in satisfied customers and important affiliations with the top names in control, software and computing vendors. Our customers not only repeat in their selection of TVC as their Control System Integrator, but recommend us to others as well. Many of the clients in TVC's customer base have been served continuously by TVC for over 20 years. In January 2009, TVC Systems was recognized by the United States Environmental Protection Agency Combined Heat and Power Partnership for our participation in eleven (11) successfully implemented and completed CHP projects, resulting in significant power efficiencies and emission reductions. We are currently in the startup and commissioning phases of three (3) additional CHP projects which will be recognized upon completion in 2009.





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Our years of history in business have also translated into extremely broad application experience. We have had control system design/build responsibility for projects ranging in diversity from large pharmaceutical plants to hazardous waste treatment facilities. These challenges, and scores of other application problems, have been brought to successful, trouble free solutions by TVC's expert control systems integration team.

TVC's geographic area is the world. We have completed projects in Europe, Africa, the Caribbean and Central and South America, as well as a majority of the United States – from Maine to Hawaii and Wisconsin to Texas.

TVC presents to its clients a winning combination of length and breadth of experience, strong technical personnel, financial resources necessary to complete a large project, and strong affiliations with leading manufacturers of industrial control and computer components. Our important and valued alliances include such industry leaders as Allen-Bradley/Rockwell Automation, ABB, Dell, Emerson Process Management/Rosemount/Fisher, GE, Honeywell, Invensys/Foxboro/Wonderware, Siemens, Schneider Electric/Square D/ Modicon, Toshiba, Trihedral Engineering, Westinghouse and Yokogawa to name a few. These alliances ensure the wholehearted support of our component suppliers that is so important to the success of any project. They also provide valuable extended warranties that are passed on to our customers. At the same time, TVC has independence in the selection of the best possible components for each individual project application. This independence results in a strategy and ability to fit our client into the right control solution, without a proprietary solution dependent on any one product and the necessity to fit the solution into any single product line.

TVC is prepared to work under firm fixed price proposals, time and material contracts, design/build and design only contracts. TVC's sales strategy is one of referral by satisfied customers, partners and vendors.

### **Facilities**

TVC Systems has for over 20 years occupied a seven thousand square foot facility on three acres of property in the Portsmouth Industrial Park, in Portsmouth, New Hampshire. Three thousand square feet of the building is devoted to a shop as a UL 508A listed panel fabrication facility. TVC's facilities also include an area for project simulation, which includes custom-built simulator panels that generate digital, analog and other process signals. This facility is used to setup and test the entire control system being supplied to a customer including the control panels, computers, SCADA and HMI software and communications networks. This allows thorough Factory Acceptance Testing to completely prove the control system including the panel wiring before the end product is delivered to the customer.



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## **Quality Standards**

Standards are an integral part of TVC's operation. TVC Systems follows documented standardized procedures in the engineering and implementation of control systems. These procedures begin in the design phase, where a Functional Specification is developed by TVC with full customer input and participation. The customer then approves the written Functional Specification and this document is used to develop a Sequence of Operations, which is again reviewed and approved by the customer. From these two thoroughly reviewed, approved and accepted documents the drawing package is developed (drawings are produced in AutoCAD on an 11x17 laser printer), the computer and PLC programs are written utilizing a variety of industry standard programming and documentation software packages. Control panels are built in TVC's UL 508A listed panel fabrication facility under the close supervision of a highly experienced VP of Manufacturing and Services, Designer, Project Engineer, and Chief Technology Officer. By having its own panel fabrication shop, TVC Systems is better able to maintain stringent quality standards and control scheduling of the panels used in any control system project.

TVC's standard procedures then call for an in-house engineering simulation of all discrete, analog, and serial inputs and outputs, followed by a full customer process simulation at TVC's facility, in the form of a Factory Acceptance Test prior to shipment. This test is done in the presence of a customer representative(s) who thoroughly review and accept that the system meets the project specifications. TVC Systems also employs a Master Electrician and ISA Certified Control System Technicians, providing onsite internal panel terminations, as well as control systems installation supervision and field instrumentation verification/calibration. Once the system is delivered and installed at the customer's site, TVC Systems works with the customer to startup, test and commission the system, working toward the common goal and satisfaction of a Site Acceptance approval of the system. Please note that these standards and procedures can be altered to match the specific customer's needs.

TVC Systems is a Member of the *Control System Integrators Association (CSIA)* and closely follows the association's "Best Practices & Benchmarks". This means that your project will not only be developed, engineered, and directed by "Experienced Technologists" consisting of skilled engineers and controls technicians; it will also be expertly managed! For details on CSIA Registration criteria please see the CSIA web-site at [www.controlsys.org](http://www.controlsys.org).

TVC has a history of successful solutions, and more importantly, successful customers who depend on these qualities over and over again for reliable results in manufacturing and process control projects. Please see TVC's website, continually under development, at [www.tvcsystems.com](http://www.tvcsystems.com) for further information on the company.



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### **Key Personnel**

**Ms. Linda Tyring**, President and Chief Operating Officer, has been associated with TVC Systems since 1984. Ms. Tyring is a Senior Member of ISA and recognized as a Level III Certified Control Systems Technician (CCST) and serves on the Faculty Advisory Committee of the New Hampshire Technical Institute. Ms. Tyring is certified in Human Resources Management and Project Management, and has many years of extensive Project Management experience in Control and Information Systems Integration with TVC Systems.

**Mr. Adam Sargent**, Chief Technology Officer, has been with TVC Systems since 1988 and has extensive comprehensive control system design and development experience. Mr. Sargent received a BS degree in Chemical Engineering with a graduate level specialization in Computer-Aided Process Control at the University of Massachusetts at Lowell. He has extensive practical and theoretical experience in the development and programming of all types of process and manufacturing control systems, using Allen Bradley, General Electric, Honeywell, Kaye, Modicon/Square D/Telemecanique, Siemens and Yokogawa DCS and PLC systems, with Intellution's FIX/GE Proficy, Wonderware's InTouch, Wonderware's InSQL, Intec's Paragon, Kaye Instrument's KayeView, Iconics' Genesis, PCT's SCADIX, and other human machine interface and SCADA software. His background also includes experience in the full range of Windows Server and Workstation Operating Systems, DOS, VMS, OS/2, AS400 software and extensive LAN/WAN implementation. Mr. Sargent is an ISA recognized Level II Certified Control Systems Technician.

**Ms. Joanne Morrill**, Vice President of Engineering, holds a BS degree in Mathematics with a specialization in Statistics from the University of New Hampshire. Ms. Morrill has been with the company since 1992 and has worked on many of TVC's most demanding projects. Ms Morrill is a member of ISA and the Boston Chapter of the American Statistical Association. As Quality Control Manager, Ms. Morrill is responsible for ensuring that all projects and project documentation produced by TVC Systems meet strict quality guidelines as set forth in TVC's Standard Operating Procedures and the Good Automated Manufacturing Practice (GAMP) guide.



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**Continued:**

**Mr. James Fradsham**, Vice President of Manufacturing and Services, oversees the design, fabrication, and testing of all system hardware components, for all projects. Mr. Fradsham has been with TVC Systems since 1990 and has extensive experience in electrical design, construction, testing, installation, calibration and maintenance of all types of process and manufacturing instrumentation and control systems. Mr. Fradsham is a licensed Master Electrician in the states of New Hampshire, Maine, Massachusetts and Connecticut, where he also holds an Unlimited Contractors License. He has attended numerous schools in the application, testing, calibration and installation of control systems and continues to increase his knowledge in these fields. Mr. Fradsham is an ISA recognized Level II Certified Control Systems Technician.

**Mr. Ralph Spinelli**, Senior Project Engineer, is a graduate in Computer Engineering Technology of the New Hampshire Technical Institute and has worked on many diverse and critical Central Utility and Site Power Generation projects at TVC. Mr. Spinelli is a Wonderware Certified InTouch and InSQL Engineer. Mr. Spinelli has been with TVC Systems since 1999.

**Ms. Colleen Conte**, Drafting and Controls Technician / Safety Manager, holds an Associate's Degree in Computer Electronics and is responsible for all of TVC's project drawings. Ms. Conte is certified in AutoCAD Electrical 2006 and Klockner Moeller PLC Programming, and has completed the New Hampshire electrical apprenticeship program. She has worked on numerous projects in TVC's shop, as well as instrumentation calibration. Ms. Conte has been with TVC Systems since 1997.

**Mrs. Melanie Pergerson**, Manager of Purchasing and Documentation, is responsible for the procurement of all materials for TVC's varied projects. She is also responsible for the production of all project documentation from submittal through final documentation and assists with Quality Control. Mrs. Pergerson has been with TVC Systems since 1997.



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For More Information  
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## TVC Systems Controls Solution Definition

