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### ABOUT FRED MEIER

Fred Meier's career spans more than 50 years as a control systems engineer, chief engineer, and engineering manager in the oil, chemical and engineering industries in the United States, Algeria, Canada, Germany, Japan, and the United Kingdom. He has held Professional Engineer licenses in New York, New Jersey, California, Alberta, Manitoba, and Saskatchewan. He completed U.S. Army training as an electrical engineer and has a Mechanical Engineering Degree from Stevens Institute of Technology and an MBA from Rutgers University.

Fred has been an ISA member for more than 40 years. He has served as President of the New York Section; the Edmonton, Alberta, Section; and the Tar Heel (North Carolina) Capital Area Section. He was awarded the ISA District II Golden Eagle Award in 2000 and ISA's Golden Achievement Award in 2005.

Fred presented two papers at ISA 1982, "Why Not Be an Adaptive Manager?" and, jointly with co-worker Trevor Haines, "Contractor Handling of Engineering for Distributed Control Systems". He authored the cover article for *CHEMICAL ENGINEERING*, Feb. 22, 1982, "Is your control system ready to start up?" Fred and son Cliff (this book's co-author) presented a joint paper at ISA 1999, "A Standard P&ID, elusive as the Scarlet Pimpernel". Fred also published an editorial viewpoint in *ISA TRANSACTIONS*, October 2002, "A P&ID standard: What, Why, How?". This book won the Raymond D. Molloy and the Thomas G. Fisher Awards in 2004.

After Fred's "first" retirement, he served as the ISA Staff Engineer; after his "second" retirement, as an ISA Instructor and Consultant; and, since his "third" retirement, as co-author of this book. Fred and Jean have been married for 62 years and are the proud parents of four children, four grandchildren, and two great granddaughters, all scattered across the United States and Canada. They currently live in Carolina Meadows, a retirement community near Chapel Hill, North Carolina.

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### ABOUT CLIFF MEIER

Cliff Meier's engineering experience started back in the 70s with a Bachelor of Science degree in Mechanical Engineering from Northeastern University. His attraction to the widgets and intricacies of Instrumentation and Controls has taken him to three continents and involvement in nuclear and fossil fuel power generation, oil and gas production, chemical, pulp and paper processes, microelectronics factories and even wastewater treatment. Cliff has worked on projects ranging in complexity from a few control diagrams to complex modernization projects and green-field installations entailing thousands of loops and hundreds of schematics. His career started with manual drafting on Mylar sheets and has transitioned to computer-aided design (CAD) where efficient data handling has almost eclipsed the importance of the physical drawings.

While he enjoys the team relationships of design projects, he finds construction, commissioning and teamwork with skilled maintenance technicians, especially the ones with fists of ham, to be almost as rewarding as writing with his Dad.

Cliff is a member of ISA and holds a professional engineering license for Control Systems in Oregon. He and his wife, Cris, have been married more than 32 years and are the parents of the two finest kids on earth - Will and Helen. They live in Beaverton, Oregon, where they can gaze at snow-capped mountains when it isn't raining, which, come to think of it, is not that often.