

AROUND THE LOOP #117

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## PROCESS ANALYZER SAMPLE SYSTEM TECHNOLOGY

When ISA's 700+ page volume, *Analytical Instrumentation : Practical Guide for Measurement & Control*, was published in 1996, it became the top seller among 2500 ISA titles in that year. Robert E. (Bob) Sherman, overall editor and author of one of 37 contributed chapters, received the Raymond D. Molloy Award in 1997 for this achievement. The Analyzer Practical Guides volume continues to record substantial sales ranking 7<sup>th</sup> among the Top Ten ISA titles in the year 2000 and 3<sup>rd</sup> among 51 titles on Amazon.com's Chemical Engineering list, a tribute to the high interest in process analyzer related technologies and the tutorial qualities of the material presented.

Sherman's companion volume, *Process Analyzer Sample-Conditioning System Technology* (Wiley-Interscience 1-800-CALL-WILEY), scheduled for publication in January 2002, is a 575+ page reference book on every aspect of sample system design and fabrication. The 12 chapters cover components (probes, transfer lines, filters, coolers, pumps, separators, flow-pressure measurement and control), materials of construction, electrical hazards, climate controls and other matters. In the final chapter, Sherman reviews thirteen case examples discussing systems & components that worked and why as well as those that didn't and why.

Based on almost 30 years of experience with analyzers and sample systems, Sherman is aiming to provide young engineers with a basic source of design parameters and performance-proven components while also providing more seasoned professionals with a comprehensive reference source to complement their field experience. While there is little tutorial material in the new sample-conditioning system volume, save for the case study discussions in Chapter 12, extensive appendices are provided on system component sourcing, analyzer shelter design & documentation, sample system design, line sizing and flow indication. A listing of ISA Analysis Division Technical Interest Groups is also included. This volume was not intended as a tutorial. For that function, the ISA Analyzer Practical Guides, or any of the extensive list of analyzer sample system technical references that Sherman cites in his PREFACE, should be consulted. The Author is particularly emphatic in his praise of K.J. (Ken) Clevett's *Process Analyzer Technology* (Wiley-Interscience 1986) stating the he personally has three copies (office, home, travel kit) to insure ready access.

The Author's purpose in compiling *Process Analyzer Sample-Conditioning System Technology* (PAS-CST), simply stated, is:

*I have long felt that the process sample presented to the process analyzer should be of similar quality to the calibration material presented to the analyzer except that the sample's composition is representative of the process at the time of sampling and analysis (which should be very nearly the same time in a properly designed sample conditioning system). In this volume I attempt to cover each part of a process analyzer sample-conditioning system in great detail. At the risk of dating this text, I offer two or more vendors for most items of equipment reviewed unless the item is unique to a single manufacturer.*

The book does not reference either ISA's SP76 working group on analyzer sample system standardization or CPAC's NeSSI (Initiative), see AROUND THE LOOP - August 2001. Both efforts emerged during the development of PAS-CST and at no time presented fixed target. Going forward, both could have a significant impact on sample system design and fabrication, particularly with respect to components specifically developed to interface the NeSSI substrate.

Sherman has Bachelor's and Master's degrees in Chemistry from St. Louis University as well as an M.S.B.A. in Management Sciences from IUNW in Gary, IN. His industrial career has spanned four distinct phases: Amoco Oil (now BP Amoco) 12 years rising from Refinery Lab Chemist to Senior Corporate Analyzer Engineer. Consulting Technologists Inc. 7 years, Founder and President, growing to a 12 employee, three location business. Fluor Daniel /Duke Power Consortium 4 years commissioned over 150 CEMS on coal-fired generating plants, start-up manager for a \$2.7 Billion fossil-fueled power complex in East Timor, Indonesia. Since 1999, Sherman has served as President of Petrolab, a supplier of physical properties analyzers (distillation, Flash Point, Viscosity, Moisture, Other) for laboratory and on-stream usage based in Latham, NY.

Sherman has an extensive publications list extending well beyond the two book titles cited previously. These credits include professional society seminars, corporate technical conferences, trade magazine articles and other genre. At the ISA/2001 Awards Banquet (9 SEPT), Sherman received the Kermit Fischer Environmental Award which recognizes outstanding achievement in the application of instrumentation and control to the field of environmental science. Sherman's citation reads:

*In recognition of outstanding contributions to the design, application, and education of process analyzers and continuous emission monitoring systems.*

*Process Analyzer Sample-Conditioning System Technology* is a work that deserves a place in every corporate library where on-stream analysis is important to the company's long-term economic health.

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