

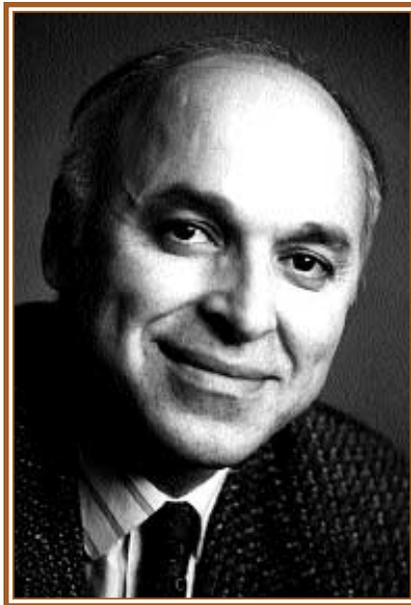
1998 T.R. HIGGINS AWARD ANNOUNCED

Abolhassan Astaneh-Asl, Ph.D., has been named the winner of the T.R. Higgins Lectureship Award presented by the American Institute of Steel Construction, Inc. Astaneh-Asl is a Professor of Civil Engineering at the University of California (Berkeley) and is well known in the steel design and construction industry for his extensive work on seismic design.

The prestigious T.R. Higgins Award, named for Theodore R. Higgins, AISC's former Director of Engineering and Research, has been presented annually for the past 27 years. It recognizes an outstanding lecturer and author whose technical paper or papers, presented during the past five years, are considered an outstanding contribution to the engineering literature on fabricated structural steel. In addition to the award itself, the winner receives a \$5,000 cash prize. Astaneh-Asl will present the Higgins Lecture, a new paper based on his work, at the 1998 National Steel Construction Conference in New Orleans on April 3; in addition, he will present the lecture a minimum of six more times at various locations around the country during the next year.

Paper To Focus On Bolted Moment-Resisting Frames

Astaneh-Asl's 1998 Higgins Lecture is titled "Seismic Performance and Design of Bolted Steel Moment-Resisting Frames." According to Astaneh-Asl: "Bolted moment-resisting frames, and their predecessors riveted frames, have been used for many decades before the use of welds in steel structures. These structures have performed extremely well during the past earthquake including the infamous 1994 Northridge earthquake. The paper presents information on: (a) how the bolted steel moment-resisting frames have performed during the



ABOLHASSAN ASTANEH-ASL
1998 T.R. HIGGINS AWARD RECIPIENT

past actual earthquakes; (b) how these frames and their connections have performed in the laboratory tests; (c) what are the possible reasons for well designed bolted moment-resisting frames to behave so well during the earthquakes; and (d) what are the design procedures to follow to obtain safe, reliable and economical bolted steel moment-resisting frames that are also easy to fabricate and erect. The paper is based on more than 14 years of research and development in this field by the author and his research associates."

Astaneh-Asl received his Master of Science in civil engineering from Tehran (Iran) Polytechnic in 1968. He was a structural engineer and construction manager from 1968 to 1978 in Tehran, designing and constructing more than 5 million sq. ft. of steel-frame high-rises and other structures including elevated water tanks, guyed towers and industrial facilities—much of which was built according to U.S. Specifications.

In 1979, he received his Master of Science in Structural Engineering from the University of Michigan in Ann Arbor. He continued his graduate studies in Michigan and received his doctoral degree in structural engineering in 1982. His doctoral dissertation was on seismic behavior and design of steel bolted and welded double-angle bracings with gusset plates.

After graduation he joined the faculty of the University of Oklahoma in Norman and continued his design-oriented research on steel structures. In 1996 he joined the faculty of the University of California Berkeley. Since then, while at Berkeley, he has conducted a number of projects on seismic behavior and design of steel building structures and has published more than 100 papers and reports in this field. While a researcher, he has continued to be a design consultant on a number of challenging steel structures projects.

He has studied the seismic performance of steel structures for the last 15 years. The 1989 Loma Prieta earthquake, which caused the collapse of a deck portion of the Bay Bridge, literally pulled him into the area of seismic behavior and design of steel bridges. Since then he has conducted several major research and development projects on seismic design and retrofit of steel bridges including the Golden Gate bridge, the Richmond San Rafael Bridge, the Carquinez bridges and the Hayward San Mateo bridge in U.S. and the Auckland bridge in New Zealand.

In the aftermath of the 1994 Northridge earthquake, he released information on why none of the damaged welded steel frames collapsed. For the last four years he has been working on a report on "Seismic Design of Steel Bridges," which is being readied for a 1998 release.

Work Emphasizes Seismic Design

Explained Robert F. Lorenz, AISC's Director of Education and the Higgins Award program administrator, Astaneh-Asl was recognized primarily for his work in area of behavior and design of steel structures with an emphasis on seismic design. "Professor Astaneh-Asl's analytical and experimental studies of the seismic behavior of steel structures and connections are recognized nationally and internationally, and used as major references for future developments," according to Subhash C. Goel, Ph.D., a Professor of Civil Engineering at The University of Michigan and the winner of the 1997 Higgins Award. "During a short span of under 20 years, Dr. Astaneh-Asl has worked on

more than 40 major research projects on a variety of topics and has over 100 research publications to his credit. Many of his design procedures and recommendations have been incorporated into design codes and standards, such as ASCE, AISC, UBC and have been used by structural engineers throughout the world," Goel added.

Among his recent papers are:

- "Seismic Behavior and Design of Steel Semi-Rigid Structures"
- "Shaking Table Tests of Rigid, Semi-Rigid and Flexible Steel Frames"
- "Innovative Approach to Controlling the Seismic Response of Steel Structures"
- "Seismic Design of Bolted Steel Moment Resisting Frames"
- "Seismic Design of Steel Column-Tree Moment Resisting Frames—A State of the Art"

In addition to his reputation as an outstanding lecturer and researcher, Astaneh-Asl is notable for the practicality of his work. "Dr. Astaneh-Asl has studied a number of important steel structural systems and components, always with an emphasis on developing practical design procedures that can be used by the profession for improved safety and economy," Goel noted. "His work has included double angle bracing members, gusset plates, column base plates and anchor bolts, groove welds, bolted moment connections, single plate shear connections, composite shear connections, tee framing shear connections, bolted semi-rigid as well as rigid frames, column-tree moment frames and steel piles. Since the 1989 Loma Prieta earthquake, he has conducted major research projects to understand the seismic behavior of steel bridges, which has led to the development of guidelines for the design and retrofit of major steel bridges in California and New Zealand.

This year's jury for the Higgins Award consisted of: Kurt Gerstle, Professor Emeritus, University of Colorado; Lawrence G. Griffis, Senior Vice President, Walter P. Moore and Associates, Inc.; John D. Hooper, Project Manager, Silling Ward Magnusson Barkshire, Inc.; David L. McKenzie, Chief Engineer,

Shawver/Price, Inc.; Donald R. Sherman, Professor of Civil Engineering, University of Wisconsin-Milwaukee; and William G. Zimmerman, President, Zimkor Industries, Inc.

Recent recipients of the award have included academics, fabricators and practicing engineers. For example, in 1996, Donald R. Sherman of the University of Wisconsin-Milwaukee, won for his on Designing with Structural Tubing. In 1995, William A. Thornton, chief engineer with Cives Steel, won for his work on Connections. And in 1994, Lawrence Griffis of Walter P. Moore and Associates was recognized for his work on Composite Frame Construction.

Seismic Short Course Offered After NSCC

A full-day course on Low and Moderate Seismicity Requirements for Low-Rise Steel Buildings will be offered on April 4 in New Orleans following the National Steel Construction Conference.

"Lessons learned from the 1994 Northridge Earthquake have progressed through analytical and physical research and have been incorporated into recent seismic standard updates and model building codes," explained Robert F. Lorenz, AISC's Director of Education. "The purpose of this short course is to acquaint engineers in low and moderate seismic regions with background information and practical design guidelines based on the new provisions of the 1997 NEHRP Standard and the 1997 AISC Seismic Provisions."

Speakers for the short course are Larry G. Griffis, P.E., Senior Vice President & Director of Structural Engineering for Walter P. Moore and Associates, Inc., and Viral B. Patel, P.E., Vice President of for Walter P. Moore and Associates, Inc., in Houston.

The Short Course Program includes:

- A New Look at Seismic Safety
- Seismic Provisions/Seismic Hazard
- NEHRP/AISC Seismic
- Structural Steel—New Requirements
- Seismic Systems/Requirements

and Options

- Design Example—Concentric Braced Frame
- Design Example—Moment Frame
- Questions & Answers

The NSCC, which is sponsored by the American Institute of Steel Construction, Inc., is scheduled for April 1-3 in New Orleans. The conference is the premier event for the steel industry and brings together structural engineers, structural steel fabricators, detailers, erectors and educators.

In addition to the post-conference full-day short course, there is a half-day short course on Floor Vibrations scheduled for before the conference begins on April 1. Scheduled speakers at the Floor Vibrations Short Course are Thomas M. Murray, P.E., Ph.D., of Virginia Polytechnic Institute and State University, David E. Allen, Ph.D., of the National Research Council of Canada, and Eric E. Unger, Sc.D., P.E., of Acentech, Inc. The course will cover the full range of vibrations that commonly occur in buildings. Highlights include: acceptance criteria for human comfort; design for walking excitation; evaluation and solutions of vibration problems; and design for sensitive equipment.

The NSCC also offers 29 technical sessions and the 1998 T.R. Higgins Lecture by Professor Abulhassan Astaneh-Asl of the University of California-Berkeley. In addition, the winners of the 1998 Engineering Awards of Excellence will be announced.

Keynote speaker this year is Daniel R. DiMicco, President and General Manager of Nucor-Yamato Steel Company. DiMicco will speak on the steel industry from a producer's perspective.

"In addition to the educational seminars, attendees will benefit from the extensive networking opportunities presented at the conference," explained Patrick Newman, AISC's Director of Technical Information Services and the conference director. "Many of the industry's top professionals will be on hand and this is a chance to exchange ideas with your peers," he added.

The NSCC also includes an extensive Guest Program, including a wide variety of daily tours. The conference dinner will be held at the Aquarium of the Americas in New Orleans.

Finally, the NSCC includes a large exhibit hall with nearly 70 vendors of such products as software, fabrication equipment and bolts.

Conference registration costs \$395 (\$320 for non-AISC members) with additional fees for the short courses. An advance program has been mailed to all *Modern Steel Construction* subscribers. If you have not yet received your copy, you may request one by faxing 312/670-5403. Also, conference and registration information can be found at AISC's web site:

www.aisc.org.

AISC Seminar Series: "Designing Steel for Serviceability" To Conclude in March

The advent of powerful computer software allows engineers to readily review a myriad of alternative design schemes to obtain optimum strength designs. Today's successful designer must look beyond just strength, however, and consider a building's function and maintenance requirements. In short, serviceability issues are becoming increasingly important.

AISC's new 49-city Seminar Series, "Designing Steel for Serviceability", covers five important topics: frame layout options & strength design; roof ponding; floor elevation & levelness; control of lateral drift; and control of floor vibrations.

or controlling this problem.

The seminar series has a CEU value of 0.55 (5.5 PDH). Registration is \$120 (\$90 for AISC members). The registration fee includes a wide range of handouts.

Please note that all MSC subscribers will automatically receive a registration form six weeks prior to the seminar scheduled in their area.

For more information, call 630/369-3772, fax 630/369-3773 or point your favorite web browser to:
<http://www.aisc.org>

1998 NSCC Schedule and Speakers

- Reinforcement Design for Metal Building Systems (Donald Johnson, P.E., and James M. Fisher, Ph.D., P.E.)
- Design of Connections Framing into the Weak Axis of Columns (Duane S. Ellifrit, Ph.D., P.E., and Marshall T. Ferrell)
- Designing for Torsion (Charles Carter, P.E., and Paul Seaberg)
- Results of New Research (John Dawe, P. Eng., and Venkatesh K.R. Kodur, P.Eng.)
- Steel Joist Topics (Walter Schultz, P.E., Thomas M. Murray, Ph.D., P.E., and Cary M. Andrews, P.E.)
- Steel Deck Topics (Dick Heagler, Larry Luttrell and Sam Easterling)
- Engineering and Quality Criteria for Steel Structures (David T. Ricker and Cindi Zahn)
- 1997 AISC Seismic Provisions for Structural Steel Buildings (C. Mark Saunders, Subhash Goel and Gregory Deierlein)
- Seismic Design (Enrique Martinez-Romero)
- Specifications: Is Your Steel Specification Up-To-Date? (William Minchin and Richard DiSalvo)
- Design/Build: When It Works and When It Doesn't (Richard Sharpe, FAIA, and Kenneth Gible)
- Special Inspection (Frank

Zamecnik and Terry Gilbertson)

- Electronic Data Interchange (Roger Stroud and Keith Grubb)
- World Wide Web (Jacques Cattan)
- Don't Be Caught Off Guard! Theft (Eugene F. Ferraro)
- Increasing Fabricators Profits (Phillip D. Sherrill, James E. Drylie and Dennis Randall)
- Are You Hiring the Right People? Personnel—Do You Need Them? Absolutely! (Charles Baco)
- The Customer is King, Right? Only If He Pays His Bills (Dan Biedenbender and Gerry Martin)
- EPA-Environmental Protection Agency (Ron Peppe)
- Welding Solutions (Jerry Stoball and Jeff Post)
- Details for Ductility (Omer Blodgett)
- Prequalification of Welding for Engineers (Duane Miller)
- Weld Inspection (Robert Shaw)
- Erector Certification (Fred Haas and Jim Mirgliata)
- The Practice of Field Welding Moment Connections (Roger Ferch)
- Temporary Bracing—Let's Have No More Failures (Mike West, John Bailey and Bob Dunn)
- Safety on the Jobsite (Barry L. Barger)
- Case Study: Phoenix Baseball Stadium (Stan Welton)

HSS Seminars Scheduled To Kick Off In February

In response to the growing popularity and use of hollow structural sections, AISC will offer an HSS seminar in 13 cities next year. The seminar, offered in association with the Steel Tube Institute and the American Iron & Steel Institute, will review and cover all aspects of HSS design and connections, including both simple and moment connections.

"The course is based on AISC's new *HSS Connection Manual*, which provides a consistent basis from which HSS connections can be designed, including simple shear and moment connections," explained Charles Carter, P.E., AISC's Director of Manuals. "It present the information that has been synthesized into a single practical sourcebook on HSS connection design.

The seminar, to be offered in 13 cities, will run all afternoon and into the evening. Sessions include:

- Materials and Specifications;
- Welding & Bolting;
- Shear Connections;
- Moment Connections;
- Tension & Compression Connections, Column Splices, Base and Cap Plates;
- Truss Connections and Examples;
- Constructability.

Cost of the seminar, including dinner, is \$175 for non-AISC members (\$135 for each additional attendee

from the same firm) and \$140 for AISC members (\$100 for additional attendees from the same firm).

The seminar will include extensive hand-out material, but will not include the new HSS Connections Manual, which is now available and can be purchased for \$72. The seminar starts at 1:00 p.m. in each city and runs through 9:00 p.m. It has a continuing education value of 6.0 Professional Development Hours or .6 CEUs.

All *Modern Steel Construction* subscribers will automatically receive a detailed program mailing.

1998 HSS Seminar Schedule

February 3	Charlotte
February 4	Atlanta
March 18	Philadelphia
March 19	Houston
April 28	Cincinnati
April 29	Chicago
May 19	Boston
May 20	New York
June 2	Denver
June 3	Kansas City
June 16	Los Angeles
June 17	San Francisco
June 18	Seattle

8th Annual Construction Safety Conference

Scheduled for Feb. 17-19 in Rosemont, IL, the 8th Annual Construction Safety Conference will feature sessions on such topics as: fall protection; prequalification; work zone safety; demolition dangers; silica hazard awareness; and disaster recovery.

For more information, contact: Construction Safety Council, 4415 W. Harrison St., Hillside, IL 60162 (ph: 800/552-7744).

Contractor Prequalification

A course on "Choosing The Best Constructor and Avoiding Constructor Failure" will be offered at the College of Engineering at the University of Wisconsin-Madison on Feb. 26-27.

Faculty for the course is Jeffrey S. Russell, P.E., an associate professor and Chair of the Construction Engineering and Management Program at UW-Madison. Included in the course will be a breakout team exercise.

For more information, call 800/462-0876.

Second World Conference on Steel in Construction

Following upon the success of the first world conference, which was held in Acapulco, Mexico, in December 1992, the Second World Conference on Steel in Construction will be held May 11-13, 1998, in the picturesque and interesting city of San Sebastian, on the north coast of Spain.

Supported by steel organizations from all over the world, including AISC, the American Iron and Steel Institute and the Steel Deck Institute, the conference promises to be major event with broad as well as in-depth discussions on all areas of steel construction. The three-day program offers more than 200 papers by authors from over 50 countries. Topics include bridges, buildings, industrial construction, tube/space

structures, cold-formed construction, connections, plated structures & fatigue, environmental issues, marketing strategies, materials, fire protection, seismic design, composite construction, information technology, and codes & standards.

One of the major sessions will be held at the new Guggenheim Museum in the city of Bilbao, with presentations by renowned architect Frank Gehry and structural engineer Hal Iyengar of Skidmore Owings and Merrill.

Other major sessions will feature:

- Jose Rafeal Moneo, an architect from Tudela, Spain, and the winner of the Pritzker Architecture Prize will discuss the glass & steel Kursaal Convention Centre and Auditorium under construction in San Sebastian
- Patrick Dowling, Vice Chancellor and Chief Executive of the

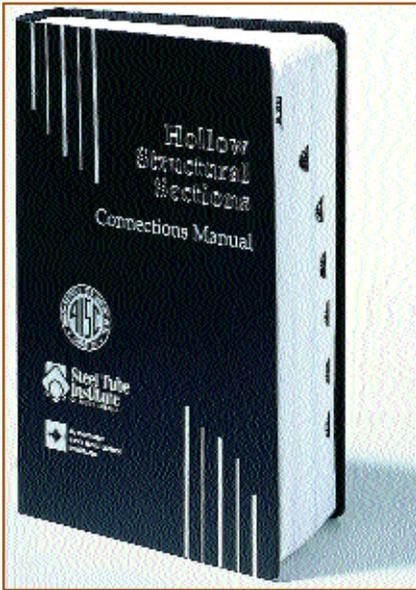
University of Surrey and a leader in the development of the European Design Codes, will give a technical overview of future opportunities for steel structures in the new millennium.

- Norman Foster, one of England's most distinguished architects will discuss some of his significant projects
- Jose Ignacio Lopez de Arriortua, worldwide head of purchasing at General Motors, will speak on "Cost Reduction in Steel Construction."

For further information and a copy of the registration brochure, contact Professor Reidar Bjorhovde, Department of Civil and Environmental Engineering, University of Pittsburgh, Pittsburgh, PA 15261. Telephone 412-624-9876; fax 412-624-0135; email bjorh@civ.pitt.edu.

News Briefs....

New HSS Connections Manual



AISC's new Hollow Structural Sections Connections Manual is now available. The new manual is a guide to shear, moment, bracing, truss and other connections for HSS. Similar in format to the AISC LRFD Manual of Steel Construction, Volume II (Connections), the manual includes chapters on:

- Dimensions & Properties
- Welding Design & Fabrication
- Bolted Connections
- Simple Shear Connections
- Moment Connections Between HSS and W-Shapes
- Tension & Compression Connections
- Cap Plates, Base Plates and Column Splices
- Welded Truss Connections
- Truss Design Examples

The manual is a must for every engineer, fabricator, erector, detailer and contractor. It was prepared by the AISC Committee on Manuals, Textbooks and Codes and published by AISC in partnership with the Steel Tube Institute of North America and supported by the American Iron and Steel Institute.

To order a copy of the \$72 (\$54 for AISC members), call 800/644-2400 or order from AISC's web site at www.aisc.org.

Farewell To A Friend

Patrick M. Newman, P.E., AISC's longtime Director of Technical Information Services, announced his departure from the Institute in January.

"Pat provided more than 12 years of engineering service to AISC," said Nestor Iwankiw, AISC's Vice President of Engineering and Research. "His work always was professional and reliable and he truly reflected the high standards of excellence that AISC strives to maintain."

AISC's duties at AISC were varied and extensive, ranging from answering outside engineer's technical questions to editing AISC's *Engineering Journal*. Readers of this magazine will most miss him for his contributions to the Steel Interchange column and for his reviews of articles for technical accuracy. "As much as I'll miss him as a colleague, I'll miss him even more as a friend," said Scott Melnick, Editor and Publisher of *MSC*.

Though Newman's work on *MSC* and *EJ* occupied a lot of his time, he is best known in the industry for his work on the National Steel Construction Conference. "Pat was the driving force behind the advances the conference has made in recent years," said Franklin B. Davis, Chairman of the NSCC Committee and President of Precise Fabricating, A Division of L.B. Foster Co. During his tenure as Director of the NSCC, attendance increased substantially while the quality of the program also showed marked improvement. "He worked hard to make the conference successful and the entire NSCC Committee will miss him."

Added Louis Gurthet, President of AISC: "Pat had the unique ability to work well with everyone both within AISC and outside the institute. His organizational skills will be sorely missed, but we wish him the best on his new endeavors."

Bureaucracies and old standards never die...

(Author unknown—Submitted via email by Bob Leclerc, Highland Technical Services, Randolph, NH)

The US Standard railroad gauge (distance between the rails) is 4'-8.5". That's an exceedingly odd number.

Why was that gauge used? Because that's the way they built them in England, and the US railroads were built by English expatriates.

Why did the English people build them like that? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.

Why did "they" use that gauge then? Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing.

Why did the wagons use that odd wheel spacing? Well, if they tried to use any other spacing the wagons would break on some of the old, long distance roads, because that's the spacing of the old wheel ruts.

So who built these old rutted roads? The first long distance roads in Europe were built by Imperial Rome for the benefit of their legions. The roads have been used ever since.

And the ruts? The initial ruts, which everyone else had to match for fear of destroying their wagons, were first made by Roman war chariots. Since the chariots were made for or by Imperial Rome they were all alike in the matter of wheel spacing.

Why that spacing on the chariots? Because Roman chariots were made to be just wide enough to accommodate the back-ends of two war horses.

Thus, we have the answer to the original questions. The United States standard railroad gauge of 4'-8.5" derives from the space that Imperial Rome determined was required for two horses.

Specifications and Bureaucracies live forever!

Quality Policies And Goals Need To Be Meaningful

By John Stokes

Quality Policy is often defined as “The intentions and direction of an organization with regard to quality as formally expressed by top management”.

ISO 9001 further states that “The quality policy shall be relevant to the supplier’s organizational goals and the expectations and needs of its customers.”

Now more than ever the need for a meaningful quality policy and clear goals is essential. How many times have you seen a quality policy statement that was filled with motherhood statements too vague to provide any idea of what are the expectations of the company and needs of the customer?

To help in establishing and writing a quality policy statement the following basic guidelines should be considered.

1. The policy should be formulated by top management.

Key executive management must be involved in the formulation of the quality policy. They should represent all parts of the organization. It is essential that commitment be from the top down. In this way lower level managers and workers will be more likely to be motivated to follow the quality system.

The completed policy statement should be signed at least by the highest official at the location covered even if it is contained within a Quality Manual which has been endorsed by the same or other manager. Additionally the next level of management should also sign the statement. This reinforces the commitment.

2. Clear statement content.

It should be easy to understand, ambitious yet attainable, and verifiable. To have the highest impact it should be short and to the point.

The statement usually consists of two parts. The first part consists of one or more quality objectives and the second part addresses the specific commitments to quality for obtaining these objectives.

Examples of objectives are:

- *It is the policy of ABC Company to*

provide products and services to our customers that meet agreed upon requirements and on time delivery by...

- *It is the policy of XYZ Company to maintain a leading position with its products within the markets and market segments important for the company by...*

However, the commitments to obtain the objectives may be general in nature, such as:

- *Implementing and maintaining continuous process improvement through internal auditing, corrective/preventive action and management reviews*
- *Working closely with vendors to obtain source materials that meet agreed upon specifications*
- *Providing adequate resources, and assigning trained personnel for management, performance of work and verification activities*
- *Assuring that all of our actions recognize the responsibility to the community, environment, employees and the shareholders.*

3. Good communication of quality policy.

The Quality Policy Statement should be posted throughout the company and be available to outside interests such as vendors, existing and potential customers.

Training sessions should be held to familiarize all personnel with the policy so that each employee has a thorough understanding and appreciation of their part in the process.

4. Goal must be set.

To be more effective a quality policy must be supplemented with the setting of goals by management at least on an annual basis. This can be done as a separate activity or as part of the management review of the quality system.

These goals are very specific either to correct or to improve conditions adverse to quality that are found through reviews of information such as trend analyses, audit and corrective/preventive action reports, and suggestions from managers and other employees.

Goals must be measurable and must be monitored on a regular basis to assess their status.

Examples of specific goals are:

- *Reduce rework in Department A by 2% over the next two quarters.*
- *Improve customer complaint system by processing all complaints within fifteen (15) days instead of the permitted 30 days.*

As goals are completed new ones must be set in the never ending process of quality improvement.

John Stokes is a well-respected Quality Management Consultant and President of John W. Stokes Inc. He also is a member of the Board of Directors of the Quality Auditing Co., which provides the auditors for AISC's Quality Certification program. He has substantial experience both in the U.S. and Europe with third-party audits.

For more information on AISC's Quality Auditing program, point your favorite web browser to:

www.aisc.org