DISCUSSION GROUP 1

on

CENTRIFUGAL PUMP OPERATION, MAINTENANCE, AND RELIABILITY

John W. Silcott, Coordinator, is Maintenance Engineering Section Leader for Celanese Chemical Group at its Clear Lake plant near Houston, Texas. His responsibilities are in the area of maintenance engineering/reliability for rotating equipment and fabricated equipment. These responsibilities include improving maintenance technology, project review and support, materials technology, predictive/preventive maintenance, and mechanical integrity.

Mr. Silcott received a B.S. degree (Mechanical Engineering, 1970) from New Mexico State University. He is a member of: ASME, the Board of Directors of the International Maintenance Institute in Houston, an Advisory Committee at Texas State Technical College for the Industrial Maintenance Mechanic Program, the Inspection and Maintenance Task Group with the Chemical Manufacturers Association, and of Texas A&M University's International Pump Users Advisory Committee.

Kerry F. Gunn, Coordinator, is currently a Rotating Equipment Technologist at Sterling Chemicals, Inc., in Texas City, Texas. He is involved in technical support for machinery repair; troubleshooting of rotating equipment; and design, selection, and installation of new machinery. Prior to his current position, Mr. Gunn worked for five years at Quantum Chemicals Houston Plant as an Area Maintenance Engineer and Project Engineer. Previously, Mr. Gunn was a Senior Research Engineer at Exxon Research and Engineering for nine years. He participated in design, construction, and operation of synthetic fuels pilot plants.

Mr. Gunn received a B.S. degree (Mechanical Engineering, 1975) from Oklahoma University and an M.S. degree (Mechanical Engineering, 1977) from Purdue University. He is a member of the Vibration Institute and ASME.

Martin T. Bowling is a Rotating Equipment Engineer in the Reliability Group at BP Amoco Chemicals, in Alvin, Texas. He has held a variety of positions at BP Amoco in reliability, maintenance, and project engineering, and has worked in the Texas City and Salt Lake City Refineries. His primary focus in these positions has been optimizing pump and compressor seal performance, troubleshooting equipment problems, vibration analysis, lube oil analysis, and improving equipment performance and reliability through improved operations.

Mr. Bowling received a B.S. degree (Mechanical Engineering, 1989) from Texas A&M University and a B.S. degree (Mechanical Technology, 1985) from the University of Houston.

David W. Lawhon is a Senior Rotating Equipment Engineer for Celanese Technical Center, in Corpus Christi, Texas. His responsibilities are to provide consulting services to all the Celanese manufacturing facilities in North America. This includes troubleshooting rotating equipment problems, vibration analysis, root-cause failure analysis, recommendation for repair techniques, and technical evaluation of rotating machinery. He consults with project engineering on new equipment specifications, installations, and startup to increase long-term reliability.

Mr. Lawhon received his B.S. degree (Mechanical Engineering, 1985) from Texas A&I University and his MBA degree from Texas A&M University, Corpus Christi (1997). He is active in the Vibration Institute and is a past chairman of the Coastal Bend Chapter. He is also a member of ASME.

Alan S. Pyle is a Staff Engineer in the Mechanical Equipment Department of Shell Chemical’s Deer Park Chemical Plant, in Deer Park, Texas. He provides rotating equipment support to the olefins units. During his 25 years with Shell, he has been in various rotating equipment support assignments in refineries, natural gas liquids processing plants, and chemical plants. Mr. Pyle is currently a member of the task force that is preparing the Fifth Edition of API 618, “Specification for Reciprocating Compressors,” and is the Chairman of the task force that is writing a new API document RP688, “Tutorial on Pulsation Control,” that will supplement API 618.

Mr. Pyle joined Shell in 1976 after receiving a BSME degree from West Virginia University. He is a member of ASME and SAE.
Watson Tomlinson is presently a Pump Improvement Engineer in the Flow Solutions Division of Flowserve, in Mt. Holly, North Carolina. He joined Flowserve/IDP in the fall of 1999 after more than 17 years with Duke Power Company. His present responsibilities include engineering field support for problem pumps at commercial facilities in the southeast United States and nuclear facilities throughout the U.S. Prior to IDP, Mr. Tomlinson was responsible for coordinating the nuclear pump program for Duke Power Company. His experience also included maintenance and troubleshooting of rotating equipment, where he worked in both nuclear and fossil stations.

Mr. Tomlinson has a B.S. degree (Mechanical Engineering, 1982) from North Carolina State University and is a registered Professional Engineer in the State of North Carolina.

Steve Walden is the Reliability Engineer for the Styrene Strategic Business Unit of Sterling Chemicals, Inc., in Texas City, Texas. His primary responsibilities include developing and managing the reliability program for the 5MM lb/day styrene unit. He is involved in rotating equipment troubleshooting and repair, root cause failure analysis, analysis of vibration data, training operators and machinists, project development, and other duties. He was previously with Equistar Chemicals LP, Solvay Polymers Inc., and Amoco Chemicals.

Mr. Walden has a Bachelor of Arts and Sciences (1977) from The University of Oklahoma and a BSME (1989) from Oklahoma State University.
DISCUSSION GROUP 2
on
MECHANICAL SEALS

Alan O. Lebeck, Coordinator, started Mechanical Seal Technology, Inc. (MSTI) in 1987, in Albuquerque, New Mexico. MSTI performs research and product development, designs software, and consults, all in relation to mechanical seals.

Dr. Lebeck served on the faculty of the University of Illinois, then worked for Shell Development. From 1971 to 1987, he served as Professor and Director of the Mechanical Engineering Department at the University of New Mexico, and as Director of the Bureau of Engineering Research. During this time, he started a mechanical seal research program under the sponsorship of the National Science Foundation and the U.S. Navy. This work served as the basis for numerous papers, reports, and inventions. A seal test program was started in 1978 and has continued. His book, *Principles and Design of Mechanical Face Seals*, was published by John Wiley (1991).

Dr. Lebeck received his B.S. (1964), M.S. (1965), and Ph.D. (1968) degrees (Mechanical Engineering) from the University of Illinois.

Joseph M. Thorp, Coordinator, is an Engineering Specialist within the Technical Services Department of Aramco Services Company (ASC), in Houston, Texas. He has provided technical support for Saudi Arabian Oil Company (Saudi Aramco) projects in Europe and North America, along with supporting field activities during interim assignments in Saudi Arabia as part of the Consulting Services Department. Mr. Thorp is Saudi Aramco’s designated representative to the American Petroleum Institute Subcommittee on Mechanical Equipment that includes Vice Chairmanship of API 610 (Centrifugal Pump) and Chairmanship of API 682 (Seals). He is the API mechanical equipment representative to the International Standards Coordinating Committee who interfaces with ISO, headquartered in Europe.

Prior to joining ASC, Mr. Thorp worked with Phillips Petroleum Company. He holds a B.S. (Mechanical Engineering) from Michigan State University and an MBA from the University of St. Thomas. Mr. Thorp is a registered Professional Engineer in the State of Texas.

Tom Arnold is a Rotating Equipment Engineer with the Consulting Services Department of Saudi Aramco, in Dhahran, Saudi Arabia. He is involved with the implementation of new technologies, upgrading machinery components and design, and provides technical support to plant engineering, operations, and maintenance personnel. Prior to joining Saudi Aramco, he worked for Chevron Research and Technology Company, Bechtel Petroleum Corporation, and Worthington Pump Company.

Mr. Arnold received a B.S. degree from Cal Poly, in San Luis Obispo (1976). He is an active member of the API 682 Task Force.

Darren P. Hebert is a Staff Engineer for Shell Deer Park Refining Services Company, in Deer Park, Texas. He has 14 years of experience in the oil and petrochemical industry and has been involved with rotating equipment for the last 10 and one half years. Mr. Hebert presently supports the distillation, alkylation, and coker areas. In this role, his responsibilities include troubleshooting, repair, and upgrade of plant rotating equipment. He is also the focal point for mechanical seals inside the refinery and sits on the corporate mechanical seal team.

Mr. Hebert received a B.S. degree (Mechanical Engineering, 1988) from Lamar University.
**Michael Huebner** is a Staff Engineer at Flowserve Corporation, Flow Solutions Division, in Deer Park, Texas. He has more than 20 years experience in the design of mechanical seals, centrifugal and positive displacement pumps, and fluid conditioning equipment. For Flowserve, he has served in design, testing, and application functions in both the U.S. and Europe.

Mr. Huebner is a member of the International Pump Users Symposium Advisory Committee and the API 682 Task Force. He received his B.S. degree (Engineering Technology) from Texas A&M University.

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**Francis H. Kludt** is the Associate Rotating Equipment Engineer at the Celanese, Pampa, Texas plant. His present responsibilities include maintenance engineering and technical support for all rotating equipment in the plant. This includes project review and consultation, troubleshooting, repair, lubrication, reliability improvements, and preventive/predictive maintenance programs. He worked with the Westinghouse Power Generation Service Division as Service Engineer and Advanced Reliability Engineer (1969 to 1976), and at Olin Chemical as Senior Maintenance Engineer (1976 to 1978), before joining Celanese Chemical in 1978. He has been a coauthor of papers for the Turbomachinery Symposium.

Mr. Kludt received a B.S. degree (Mechanical Engineering, 1969) from Texas A&M University and an MBA degree (Management, 1999) from Wayland Baptist University. He is a member of ASME, the Vibration Institute, and is a registered Professional Engineer in the State of Texas.

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**Christopher A. Kowalski** performs the function of Consulting Engineer, presently employed in the Fluid Sealing Systems Business of A.W. Chesterton Company, in Groveland, Massachusetts. He provides research and development management for gas sealing projects. The application of close film gas sealing technology to pumps and compressors has been a focal interest since 1990. Mr. Kowalski is coinventor of several patents and has cowritten papers in the field of gas seal technology. He was the Engineering Manager for gas seal products at EG&G Sealol for five years. He also has 15 years of design, maintenance, and field improvements for high-pressure compressors in his experience.

Mr. Kowalski received a B.E. degree from Stevens Institute of Technology and is a member of ASME and STLE.

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**Todd Monroe** is Engineering Manager for C.R. Gregg & Associates, Inc., in Houston, Texas. Before joining them in 2000, he was Senior Rotating Equipment Engineer for Equistar Chemical. He has more than 17 years’ experience in the installation, commissioning, and maintenance of rotating equipment. His “hands-on” experience includes the installation and commissioning of rotating equipment on four major grass-roots petrochemical facilities. He is also the architect of C.R. Gregg & Associates’ Stay-Tru™ Machinery Installation Systems.

Mr. Monroe received a B.S. degree (Mechanical Engineering, 1984) from Texas Tech University, and is a registered Professional Engineer in the State of Texas.

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**Thomas H. Nowak** is the West Regional Engineer for John Crane Inc., in Cerritos, California. He is responsible for technical aspects of design, application, troubleshooting, and failure analysis of mechanical seal installations throughout the western U.S. Mr. Nowak worked for Fern Engineering as a gas turbine design engineer for several years before entering the oil refining industry. He held several maintenance and engineering positions in 13 years in refining, first with Hess Oil Virgin Islands Corporation, and then with Texaco Refining and Marketing. Mr. Nowak worked extensively on reducing fugitive emissions from rotating equipment at the Texaco Refinery in Los Angeles during the early 1990s to comply with the emerging environmental regulations. He joined John Crane in 1997 as Regional Engineer and also spent a year as Operations Manager for the West Region.

Mr. Nowak has a BSME (1979) from California State Polytechnic University and is a member of ASME.
**Eric Vanhie** combines the functions of Engineering and Product Manager for the Engineered Products Group at Burgmann Seals, in Houston, Texas. He focuses on development and sales of economical sealing solutions for difficult applications. He has been active in US and European mechanical seal markets since 1982 in various responsibilities. He started as an Application Engineer and went into design and product development engineering for a major US seal company. In 1988, Mr. Vanhie moved back to Europe to join the European affiliate as Engineering Manager. From 1992 until 1997, he was Sales Manager, first for The Netherlands, then for Western Europe. While in Europe, he wrote several articles on the subjects of fugitive emissions and extending the life of mechanical seals, and was a member of the mechanical seal work group of the European Sealing Association.

Mr. Vanhie has a B.S. degree (Mechanical Engineering, 1978) from Polytechnic College in Belgium.

**Ed Wilcox** is the CVO Rotating Equipment Team Lead with Lyondell/Equistar, in Channelview, Texas. He is responsible for troubleshooting, repair, and condition monitoring of rotating equipment at both the Lyondell and Equistar facilities. Prior to this, he worked for more than 10 years with Conoco and Citgo as a Rotating Equipment Engineer. Mr. Wilcox has authored several papers in the areas of rotordynamics, vibration analysis, and performance testing.

He has a BSME degree from the University of Missouri-Rolla and an MSME degree from Oklahoma State University. He has also done postgraduate work at the Georgia Institute of Technology in the areas of lubrication, rotordynamics, and vibration. Mr. Wilcox is a Vibration Institute Level III Vibration Specialist and a registered Professional Engineer in the State of Oklahoma.
**DISCUSSION GROUP 3**

**on**

**BEARINGS AND LUBRICATION**

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**Lev Nelik, Coordinator.** is President of Liquiflo Equipment Company, in Garwood, New Jersey. He has over 20 years of engineering, manufacturing, sales, field, and management experience in the pump industry. Previously, he worked at Roper Pump, IDP (Ingersoll-Rand), and ITT (Goulds Pumps).

Dr. Nelik is a registered Professional Engineer and has published over 50 documents, including a “Pumps” section for the *Encyclopedia of Chemical Technology*, a section for the *Handbook of Fluids Dynamics*, and a book *Centrifugal and Rotary Pumps: Fundamentals with Applications*.

Dr. Nelik is a member of the International Pump Users Symposium Advisory Committee, an Advisory Board Member of *Pumps & Systems* and *Pumping Technology* magazines, and a former Associate Technical Editor of the *Journal of Fluids Engineering*. He is a full member of ASME, and a Certified APICS (CIRM). He is a graduate of Lehigh University with an M.S. degree (Manufacturing Systems) and a Ph.D. degree (Mechanical Engineering).

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**Gary A. Krafft, Coordinator.** is a Technical Representative with HydroTex Dynamics, Inc. and BFI Pump Company, in Houston, Texas. He began this role in January 1998. His current responsibilities include utility and industrial accounts for pump repairs/improvements, along with engineering support for systems. Previously, Mr. Krafft was an Engineering Specialist at TU Electric. He worked in power plant maintenance functions for 22 years and was heavily involved with the troubleshooting and problem resolution of large rotating equipment. This type of equipment not only included pumps, but also steam turbines, generators, fans, and electric motors.

Mr. Krafft received his B.S. degree (Mechanical Engineering) from Texas A&M University. He was the originator of TU Electric’s Equipment Repair Group (1982), which was formed to improve reliability. He has worked with fossil and nuclear plants, and the gas pipeline and mining divisions. Mr. Krafft is a registered Professional Engineer in the State of Texas.

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**Chesley Brown** is Senior Engineer in the System Engineering Department for TXU Electric, Comanche Peak Steam Electric Station, in Glen Rose, Texas. CPSES is a two unit, 1150 megawatt (each), nuclear generation facility. His primary duties include coordination of both the Lubricant Analysis Program and the Lubricant Control Program, with collateral duties in vibration analysis, acoustic emission analysis, thermography, and bearing failure analysis. He joined TU Electric in 1987 as an Associate Engineer in the Maintenance Engineering Department.

Mr. Brown received a B.S. degree in Agricultural Engineering and a B.S. degree in Mechanical Engineering from Texas A&M University. He is an active member of STLE.

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**Joseph R. Cervassi** is a Staff Engineer with Exxon Chemical Company, in Baytown, Texas. He is presently assigned to Major Projects where he is involved in specification and NPQC of both general and special purpose machinery. Until recently, he was the Section Supervisor of the Machinery Section in Exxon’s Baytown Olefins plant.

Since joining Exxon in 1978, he has had several assignments in engineering with Exxon Enterprise, Exxon Chemical Bayway, and Aramco. Prior to joining Exxon, he worked for Drew Chemical Company on industrial water and fuel additives.

Mr. Cervassi received his B.A. degree (Chemistry) from Boston University, and an M.S. degree (Chemical Engineering) from New Jersey Institute of Technology.
Donald C. (Don) Ehlert has been employed with Lubrication Systems Company, in Houston, Texas, for the past 25 years. His present position is that of Sales Manager. Mr. Ehlert has been involved with lubrication equipment and system technology for a total of 34 years. His present responsibilities include product sales in North America, along with being a key account manager to several major clients.

Mr. Ehlert has field maintenance and system installation experience that spans a large number of industries. He has served as a technical sales representative and has system experience that includes troubleshooting of aviation flight control systems for the U.S. Navy, research and development of oil field land and subsea wellhead controls, and blowout preventer systems.

Mr. Ehlert has authored several articles on the practical use and justification of lubrication systems, and presides over training classes and lubrication workshops for end users.

Donald H. Hastie is a Senior Project Engineer for the Torrington Company, Fafnir Bearings Division, in Torrington, Connecticut. He is responsible for design and application of ABEC 1 and ABEC 3 angular contact, double row, and radial ball bearings. He has worked for Torrington’s Fafnir Division for 12 years. Prior to joining Fafnir, Mr. Hastie worked in technical positions for Barden, Barry Controls, and Armstrong Rubber.

Mr. Hastie received his B.S. degree (Mechanical Engineering, 1979) from Northeastern University.

Michael Polk is the founder and President of Reliability Associates, a turbomachinery consulting firm, in Slidell, Louisiana. He retired from Mobil Oil’s (formerly Tenneco) Chalmette Refinery in 1996, after 16 years of service as a Staff Reliability Specialist and Machine Shop Supervisor.

Mr. Polk has more than 30 years of experience with rotating equipment. He has had broad experience in the installation and repair of rotating equipment in oil production facilities, petrochemical plants, and other industries. Previous employers include the Elliott Company, Brown and Root, Inc., Melamine Chemicals, Bernard and Burke, and Chevron, USA.

Mr. Polk has written for several technical publications, and is affiliated with the Vibration Institute (past officer) and Gulf South Compression Conference. He has a technical degree from Nashville Auto-Diesel College.

Patrick Stepchinski is a Machinery Engineer for GDS Engineers, Inc., in Baytown, Texas. His responsibilities include machinery bid/purchase specification writing and analysis of machinery problems for petrochemical clients in the Houston/Texas City area.

Mr. Stepchinski was previously employed by Exxon Company, USA, at the Baytown Refinery for 16 years. His assignments included: oil mist lubrication system design and troubleshooting; vibration and failure analysis of pumps, motors, fans, compressors, gearboxes, steam turbines, and gas turbines; specification writing and bid evaluation of new machinery; commissioning of new pumps, motors, compressors, steam turbines, and gas turbines.

Mr. Stepchinski graduated with a B.S. degree (Mechanical Engineering, 1976) from the University of Houston. He is a member of ASME, has Vibration Specialist Level II certification from the Vibration Institute, and is a registered Professional Engineer in the State of Texas.

Todd Stevens is a Machinery Engineer for ExxonMobil, at the Baytown Refinery, in Baytown, Texas. His responsibilities include troubleshooting, repair and developing long-term solutions to rotating equipment problems. Mr. Stevens has 11+ years of experience in the field of rotating equipment gained at Equistar Chemicals and Celanese Chemicals.

Mr. Stevens received his B.S. degree (Mechanical Engineering, 1989) from Texas A&M University. He is a member of the Houston Chapter of the Vibration Institute and ASME.
**DISCUSSION GROUP 4**

**on**

**COUPLINGS, ALIGNMENT, AND PIPESTRAIN**

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**Gary E. Glidden, Coordinator**, is a Specialist at Reliant Energy Generation, in Houston, Texas. He has been with REI for more than 30 years. Before his current position, he was Crew Leader in the Maintenance Division for more than 17 years. Twelve of those years were spent in Field Maintenance with responsibilities of performance monitoring, vibration analysis, troubleshooting, field inspections, and repair of all types of rotating equipment. The last five years as Crew Leader, Mr. Glidden was in charge of rotating equipment repairs in the Central Repair Shop.

Mr. Glidden has written several articles for *Pumps & Systems* magazine and for the past six years served on their User Advisory Team. He is a member of the International Pump Users Advisory Committee and is a certified Mechanical Inspector with the American Society for Quality.

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**Kenneth J. (Ken) Savoie, Coordinator**, is a Senior Staff Engineer with Equilon Enterprises LLC. He is currently assigned as a Rotating Machinery Specialist at the Shell Deer Park Refinery, in Deer Park, Texas. He began his career with Shell Oil Company and spent five years working as a Project and Maintenance Engineer in various areas of the refining and chemical facilities until moving into the Rotating Equipment group in 1985. Since then, Mr. Savoie has worked as a Machinery Engineer throughout the 290K B/D Refinery. In this capacity, he was responsible for providing technical support for rotating and reciprocating machinery systems. This included implementation of strategies and programs to improve the reliability of pump and compressor systems. He also specializes in solving multidiscipline engineering and maintenance problems in refineries.

Mr. Savoie has a B.S. degree (Civil Engineering, 1980) from the University of Southwestern Louisiana. He is a member of ASME.

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**Richard Ay** is Vice President of Software Development at COADE, Inc., in Houston, Texas. Joining COADE in 1985, he is one of the main authors of the CAESAR II Pipe Stress software program.

Mr. Ay holds a B.S. degree from Florida Institute of Technology and an M.S. degree from the University of Houston. He is a registered Professional Engineer in the State of Texas.

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**Donald B. (Don) Cutler** is Technical Service Manager for the Thomas Flexible Disc Coupling Operations of Rexnord Corporation, in Warren, Pennsylvania. He spent five years as a field service supervisor with Dresser Clark. During this period, he developed an optical hot alignment check system for the rotating equipment along with graphical analysis of reverse indicator alignment. He then served eight years leading up to Head Contract Engineer for Dresser Clark, before joining Rexnord as Manager of Engineering.

In the past, Mr. Cutler has been a tutorial speaker on coupling hydraulic mounting at the Turbomachinery Symposium. He holds a patent on coupling balancing. He also serves on active committees with both API and AGMA in coupling specification development.

Mr. Cutler graduated from the University of Vermont with a B.S. degree (Mechanical Engineering, 1954). He went to graduate school at New York University in Meteorology while with the United States Air Force.
Michael W. Johnson is an Engineer in the Condition, Assessment, and Monitoring Department of Houston Industries—Power Generation, in Houston, Texas. Mr. Johnson graduated from the University of North Dakota (1980) and is a registered Professional Engineer in the State of Texas.

C. Richard Massey is the President of A-Line Manufacturing Company, Inc., a manufacturer of precision reverse alignment tools, located in Liberty, Texas. He gained 16 years of experience with the Atlantic-Richfield Houston refinery as a machinist. After being granted a patent on the alignment tools he now manufactures, he took early retirement from ARCO and founded A-Line Manufacturing in 1985.

Mr. Massey is a member of ASME, the Vibration Institute, International Maintenance Institute, and the Pacific Energy Association.

Christopher P. (Chris) Rackham is Engineering Manager for John Crane Flexibox, in Houston, Texas. He has been with Flexibox, Inc., since receiving a B.S. degree in Engineering from Pennsylvania State University (1979). Prior to his current position, he served as Design Engineer and Applications Engineer. His responsibilities include design specifications, application reviews, quality assurance, and field support for power transmission couplings, mechanical seals, and ancillary equipment.

Mr. Rackham has served on the API Manufacturers Subcommittee on Couplings (671) and consultant to API Manufacturers Subcommittee on Mechanical Seals (610).

Robert (Bobby) Vega is Senior Mechanical Inspector with Shell Chemical Company, at the Norco Refinery, in Norco, Louisiana. He began his career in 1972 as a machinist, serving a four-year apprenticeship in the New Orleans area. He joined Shell Chemical Company in 1978 as a Machinist, performing routine maintenance work on turbines, pumps, gearboxes, etc. In 1990, he began his career as a Mechanical Inspector for Project Engineering, which is largely new construction.

In addition to being a Mechanical Inspector, Mr. Vega also handles all the pipe stress analysis for Shell Chemical Company at the Norco facility. He began doing stress analysis in 1997. As a Mechanical Inspector, he can relate to the importance of pipe alignment to mechanical equipment when he is doing a stress analysis.
DISCUSSION GROUP 5
on
VERTICAL PUMP PROBLEMS AND SOLUTIONS

Herman A.J. Greutink, Coordinator, formerly Vice President and Technical Director, is now Consultant to Johnston Pump Company, in Brookshire, Texas. Mr. Greutink has demonstrated his engineering expertise on large vertical pump projects worldwide, and he is internationally acknowledged as one of the pump industry’s long standing experts on vertical pump design, testing, and application. He frequently conducts pump seminars for the engineering personnel of customers and for consulting and construction firms throughout the world.

He was educated at the Mechanical Engineering College in Enschede, The Netherlands. From 1951-58, Mr. Greutink was Project Engineer for Aramco, Oil Handling Facilities, Dhahran, Saudi Arabia. Since 1958, he has been in engineering management at Johnston Pump Company. He is a member of the Hydraulic Institute and ASME.

Michael (Mike) Cugal is a Senior Hydraulic Engineer for the Johnston Pump Company of Flow Products, in Brookshire, Texas. He has been with Johnston Pumps for six months and has the hydraulic engineering responsibilities in testing and performance, applications and selection, aftermarket services, and new product development. Prior to joining Johnston Pumps, he worked as a Project Engineer in the Technology Group at Flowservce Corporation, in Vernon, California, for 11 years. His responsibilities there included new hydraulic designs and analysis using CFD codes and providing hydraulic engineering support for applications, sales, and aftermarket groups.

Mr. Cugal is a 1990 BSME graduate of California Polytechnic University at Pomona. He is a registered Professional Engineer in the State of California.

Gerald Harrelson is an Account Manager, and has been employed by Johnston Pump Company, in Chattanooga, Tennessee, for 22 years. He has specialized in the nuclear power industry for the last 20 years. This has included management of large multiyear power uprate and life extension projects. Mr. Harrelson has organized and hosted pump seminars for Johnston Pump with more than 100 attendees from nuclear plants all around the US. He has worked closely with power company engineering and maintenance departments on pump and system troubleshooting. Before coming to Johnston Pump, he spent five years with Weyerhaeuser Company as Procurement and Project Manager in the pulp industry, and six years in the US Army as aircraft maintenance officer and test pilot.

Mr. Harrelson received a B.S. degree (Business Management) from Pembroke State College. He is a member of ASME and ANS.

Michael Polk is the founder and President of Reliability Associates, a turbomachinery consulting firm, in Slidell, Louisiana. He retired from Mobil Oil’s (formerly Tenneco) Chalmette Refinery in 1996, after 16 years of service as a Staff Reliability Specialist and Machine Shop Supervisor.

Mr. Polk has more than 30 years of experience with rotating equipment. He has had broad experience in the installation and repair of rotating equipment in oil production facilities, petrochemical plants, and other industries. Previous employers include the Elliott Company, Brown and Root, Inc., Melamine Chemicals, Bernard and Burke, and Chevron, USA.

Mr. Polk has written for several technical publications, and is affiliated with the Vibration Institute (past officer) and Gulf South Compression Conference. He has a technical degree from Nashville Auto-Diesel College.
DISCUSSION GROUP 6
on
PUMP VIBRATION MONITORING AND ANALYSIS

Thomas R. (Tom) Morton, Coordinator, is Vice President for Engineering for Sulzer Pumps (U.S.) Inc., in Portland, Oregon. His current responsibilities include direction of Design, Order Related Engineering, Field Engineering, Hydraulics Department, and CAD. He has been with Sulzer Bingham (formerly Bingham Willamette Company) since 1969, serving in managerial/leadership positions.

Mr. Morton was born, raised, and educated in Scotland at Stow College, Glasgow. Before leaving Scotland, he was employed at G&J Weir Pump Company, Glasgow. Mr. Morton is a member of ASME and the International Pump Users Symposium Advisory Committee.

Vernon L. (Vern) Maddox, Coordinator, is Senior Engineering Advisor with Equistar Chemicals LP, Channelview, Texas. In this capacity, he serves as a consultant to all Equistar facilities on machinery engineering, condition monitoring, and vibration analysis for new and existing equipment. Mr. Maddox also provides services to new projects in the area of equipment selection, specifications, and installation and startup of rotating and reciprocation equipment. He has more than 35 years of experience in machinery engineering, troubleshooting, and condition monitoring. Prior to his current assignment, he was in charge of reliability engineering and condition monitoring operations at the Equistar facilities at Clinton, Iowa, and LaPorte, Texas.

Mr. Maddox has a B.S. degree (Mechanical Engineering) from the University of Texas, Austin. He is a member and former Director of the Vibration Institute and is a registered Professional Engineer in the State of Texas.

Mark Cooper is a Senior Machinery Engineer with Equistar Chemicals, LP, in the Machinery and Reliability Engineering Department, in Channelview, Texas. He has been involved for the past 10 years with machinery reliability, root cause failure analysis, and machinery design improvements for polymer, chemical, and olefins units within Equistar Chemicals.

Mr. Cooper received a B.S. degree (Mechanical Engineering) from Lamar University in (1991).

Patrick J. Gonzales is presently Senior Vibration Specialist for the Pump Division of Flowserve Corporation, in Vernon, California. He is responsible for establishing generic rotordynamic and structural signatures for new designs, and for furnishing technical assistance in diagnosing rotating equipment vibration problems.

Mr. Gonzales has been associated with the Pump Division for 35 years in the areas of design, testing, and field problems involving vibration, fluid pulsation, and noise. He was directly involved in the development of the Byron Jackson feedpump expert diagnostic software program, which diagnoses vibration and flow related problems on horizontal type feed pumps.

Mr. Gonzales graduated from East Los Angeles College with an A.A. degree (Engineering Technology, 1966).
Terry Hernandez is the Rotating Equipment Engineer supervisor at Lyondell Chemical, in Channelview, Texas. He supervises technicians responsible for the vibration and lube oil predictive maintenance programs along with the mechanical inspection and quality control on outside machinery repairs. Mr. Hernandez also provides technical machinery support to maintenance and operation personnel, manages turnaround execution on major machinery repair overhauls or upgrades, troubleshoots equipment problems, evaluates equipment repair techniques, generates machinery repair work scope and bid packages, develops maintenance procedures, develops machinery design changes, revises machinery specifications, and installs machinery upgrades. He prepares specifications, evaluates bids, purchases, and installs machinery for project activities.

Mr. Hernandez graduated from McNeese State University with a B.S. degree (Mechanical Engineering, 1974) and has worked since then in turbomachinery installation, maintenance, performance and troubleshooting, vibration analysis and field balancing, and mechanical seals. He is also active in professional development seminars with the ASME South Texas Chapter.

Malcolm E. Leader is a Turbomachinery Consultant and Owner of Applied Machinery Dynamics, in Dickinson, Texas. He is currently involved in the design, testing, modification, and installation of rotating equipment. He spends time doing theoretical design audits and working in the field implementing changes and overseeing installations.

Mr. Leader obtained his B.S. (1977) and M.S. (1978) degrees from the University of Virginia. While there, he worked extensively on experimental rotordynamics and hydrodynamic bearing design. He has written several papers on the subjects of experimental rotordynamics, bearing design, design audits for rotating equipment, and practical implementation of rotordynamic programs. Mr. Leader is a member of ASME, Sigma Xi, the Houston Chapter of the Vibration Institute, and is a registered Professional Engineer in the State of Texas.

Jerome A. (Jerry) Lorenc is Senior Research Engineer in the Industrial Pump Group of ITT Industries, in Seneca Falls, New York. He has been with ITT since 1976, serving as Instrumentation Engineer, Supervisor of the R&D Lab, and his present position. His responsibilities include design of pump test facilities, managing new technology projects, and engineering assistance to sales and field service. Mr. Lorenc has been involved in vibration, pressure pulsation, and condition analysis of pumps for the past 25 years. He has published five papers and has a several centrifugal pump related U.S. patents.

Mr. Lorenc received a B.S. degree (Aircraft Maintenance Engineering, 1970) from Parks College of Saint Louis University, completed a full year of graduate work in Mechanical Engineering at Rochester Institute of Technology (1976), and is certified Vibration Specialist III (1996). He is a member of ISA and the Vibration Institute.

Steven M. Schultheis is a Principal Engineer in the Specialty Engineering group at Equistar Chemical LLP, in Channelview, Texas. He acts as the focal point for condition monitoring projects throughout the enterprise in addition to providing machinery analysis technical support to solve problems with rotating and reciprocating machinery. Before joining Equistar, he worked as a diagnostic engineer for Bently Nevada, and as a research engineer for Southwest Research Institute.

Mr. Schultheis received a B.S. degree (Mechanical Engineering) from New Mexico State University. He is a registered Professional Engineer in the State of Texas, and is a certified Vibration Specialist Level II. He is a member of ASME and the Vibration Institute.
DISCUSSION GROUP 7

on

SEALLESS PUMPS

William J. (Bill) Mabe, Coordinator, is the Director of Technology Development and Quality Assurance for Sundyne Corporation, in Arvada, Colorado. He is primarily responsible for coordinating technology and product development for Sundyne’s business units. Mr. Mabe joined Sundyne in 1974 as a Senior Engineer involved in high speed centrifugal pump design. Previous turbomachinery experience includes six years at Rocketdyne, Liquid Rocket Division of Rockwell International, where he was a member of the technical staff responsible for the analysis and design of the space shuttle turbo pumps. He has several patents related to pumping equipment.

Mr. Mabe holds a B.S. degree (Mechanical Engineering) from the University of Missouri at Rolla and a Masters of Business Administration and Technology Management from the University of Phoenix. He also serves on the corporate advisory board for the Colorado School of Mines.

Julien LeBleu, Jr., Coordinator, is the Principal Engineer for Rotating Equipment for Lyondell Chemical, in Lake Charles, Louisiana. He is responsible for all rotating equipment in the Lake Charles facility and has more than 25 years of experience in the field of rotating equipment. He has worked for General Electric Company as a technical director for the installation and maintenance of large steam turbine and generator sets. Mr. LeBleu is a licensed aircraft mechanic and has worked on both reciprocating and jet aircraft engines. He is a member of the International Pump Users Advisory Committee, has authored several articles, and has lectured at Pump Symposia.

Mr. LeBleu received his B.S. degree from the University of Florida (1974).

Steven K. (Steve) Campbell is a Senior Mechanical Engineer with Motiva Enterprises, LLC, at the Norco Refinery in Norco, Louisiana. He is presently assigned as Rotating Equipment Engineer for several of the refining units. In this capacity, he is responsible for providing technical support to operations and maintenance, improving equipment reliability, and assisting in the specification of new equipment.

Mr. Campbell joined Shell at the Deer Park Refinery in 1988 after receiving a B.S. degree (Mechanical Engineering) and an A.S. degree (Petroleum Technology) from Louisiana Tech University. In 1996, he transferred to the Shell Norco Refinery, which later became Motive Enterprises, LLC.

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PIPELINE APPLICATIONS

Bruce Weber, Coordinator, is the Operations Manager for Best Equipment, in Houston, Texas. As Operations Manager, his duties include supervision of the pump repair facility, consulting with clients concerning pumping systems, and pump troubleshooting. Other areas include failure analysis, pump modifications, bearings, high pressure mechanical seals, and lubrication systems. Prior to joining Best Equipment, Mr. Weber was associated with Koch Hydrocarbon, in Medford, Oklahoma, for 18 years. His responsibility as Maintenance Supervisor included 10,000 miles of pipelines that employed 2300 pumps. He also served as a consultant for Koch’s four light hydrocarbon processing plants.

Mr. Weber is currently enrolled at the University of Oklahoma, working toward a B.S. degree.

Ronald B. (Ron) Adams is Global Portfolio Manager, HPI, with Sulzer Pumps (US) Inc., in Houston, Texas. He has been with Sulzer since 1991 and has held various sales management and alliance management positions with them. Previously, he was with Ingersoll-Rand Pumps from 1973 to 1991, where he held various positions in applications, sales, and marketing of centrifugal, reciprocating, and magdrive pumps.

Gary Daileda is currently Manager of Project Engineering for TEPPCO, in Houston, Texas. Since joining TEPPCO in 1982, he has held a variety of positions in engineering, operations and maintenance, and business development. He is responsible for the overall project management and engineering design functions for the company’s capital improvement projects. He has been involved with numerous capacity expansion projects with TEPPCO, encompassing the hydraulic rerate of existing centrifugal pumps as well as the sizing and selection of new pumping equipment. As District Superintendent for Operations and Maintenance from mid-1989 through mid-1991, he was involved on a daily basis with field technicians responsible for maintenance and repairs to rotating equipment.

Mr. Daileda received a B.Sc. degree (Water Resources’ Engineering Technology) from Pennsylvania State University.

Marc De Silva is the Marketing Manager for Process Pumps at Flowserve, in Houston, Texas. His 20 year career in the pump industry has included sales and marketing positions at Ingersoll-Rand, IDP, and now Flowserve. For eight years he was the multistage axially split Product Manager in IDPs Phillipsburg, New Jersey, plant, where he became involved in numerous pipeline projects around the world.

Mr. De Silva has a B.A.Sc. degree (Mechanical Engineering) from the University of Waterloo and an MBA degree from McGill.

William R. (Bill) Litton is an Initiative Manager (pumps) Williams Company, in Tulsa, Oklahoma. He has more than 20 years of experience in the petroleum industry. He has ability and experience in mechanical equipment, prime mover economics, power optimization, and pipeline system capacities. Mr. Litton also has project engineering ability and experience in handling pipeline expansions, pipeline pump stations, refineries, fractionators, gas and processing facilities, crude oil, refined products, NH3, and propane terminals (brine cavern and excavated caverns). He also has experience in maintaining mechanical equipment company-wide to provide reliable and economical service. This includes rerating of pumps and pump modifications to reduce resonant and nonresonant vibration levels.

Mr. Litton has a B.S. degree (Mechanical Engineering, 1979) from Kansas State University and a B.S. degree (Mathematics, 1978) from Emporia State University. He is a registered Professional Engineer in the State of Oklahoma and participated in the API 610 Task Force.
**George J. Maddox** is the Manager of Engineering for the PumpWorks division of Best Equipment Service and Sales, located in Tyler, Texas. He has more than 21 years experience in a variety of engineering design and engineering management positions. Mr. Maddox is currently involved in the remanufacture, repair, rerating, and packaging of centrifugal pumps. His responsibilities include the hydraulic and mechanical design and design evaluations of centrifugal pumps and pump units.

Mr. Maddox has a BSME degree from the University of Texas at Arlington and an MBA from Amber University. He is a registered Professional Engineer in the State of Texas.

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**James (Jim) Rector** is currently Manager of Application Engineering and Project Management for Schlumberger Well Completions and Productivity-Artificial Life Business segment, specializing in Reda Horizontal High Pumping Systems, in Owasso, Oklahoma. He has spent the last 10 years involved in a wide variety of rotating pumping equipment positions, including three years as an Inside Sales AE for Gould Pumps, two years as Engineering Manager for Texas Process Equipment, and two years as Senior Project Manager for Flowtronix International.

Mr. Rector received his BSME (Mechanical Systems, 1987) from the United States Military Academy at West Point. He began his business career after serving as an office in the U.S. Army at Fort Bliss, Texas, as a Patriot Missile Fire Control Leader and Brigade Motor Maintenance Officer. He is a 14 year member of ASME.
DISCUSSION GROUP 9

on

POSITIVE DISPLACEMENT PUMPS—MAINTENANCE, OPERATION, RELIABILITY

Lev Nelik, Coordinator, is President of Liquiflo Equipment Company, in Garwood, New Jersey. He has over 20 years of engineering, manufacturing, sales, field, and management experience in the pump industry. Previously, he worked at Roper Pump, IDP (Ingersoll-Rand), and ITT (Goulds Pumps).

Dr. Nelik is a registered Professional Engineer and has published over 50 documents, including a “Pumps” section for the Encyclopedia of Chemical Technology, a section for the Handbook of Fluids Dynamics, and a book Centrifugal and Rotary Pumps: Fundamentals with Applications.

Dr. Nelik is a member of the International Pump Users Symposium Advisory Committee, an Advisory Board Member of Pumps & Systems and Pumping Technology magazines, and a former Associate Technical Editor of the Journal of Fluids Engineering. He is a full member of ASME, and a Certified APICS (CIRM). He is a graduate of Lehigh University with an M.S. degree (Manufacturing Systems) and a Ph.D. degree (Mechanical Engineering).

James R. (Jim) Brennan is Market Services Manager for Imo Pump, in Monroe, North Carolina. His responsibilities include worldwide marketing and technical support for pumping applications. He has more than 30 years of service with Imo Industries. Engineering manager for five years, Mr. Brennan has spoken at a number of conferences worldwide and has published more than three dozen technical articles and papers.

Mr. Brennan is a 1973 graduate of Drexel University in Philadelphia and a member of the Society of Petroleum Engineers.

Terry Hernandez is the Rotating Equipment Engineer supervisor at Lyondell Chemical, in Channelview, Texas. He supervises technicians responsible for the vibration and lube oil predictive maintenance programs along with the mechanical inspection and quality control on outside machinery repairs. Mr. Hernandez also provides technical machinery support to maintenance and operation personnel, manages turnaround execution on major machinery repair overhauls or upgrades, troubleshoots equipment problems, evaluates equipment repair techniques, generates machinery repair work scope and bid packages, develops maintenance procedures, develops machinery design changes, revises machinery specifications, and installs machinery upgrades. He prepares specifications, evaluates bids, purchases, and installs machinery for project activities.

Mr. Hernandez graduated from McNeese State University with a B.S. degree (Mechanical Engineering, 1974) and has worked since then in turbomachinery installation, maintenance, performance and troubleshooting, vibration analysis and field balancing, and mechanical seals. He is also active in professional development seminars with the ASME South Texas Chapter.

Steve A. Larson is a Professional Engineer at Cat Pumps Corporation, in Blaine, Minnesota. He is responsible for designing and troubleshooting complete water systems. He has worked his way up in the engineering department from the R&D test lab to a lead engineering position.

Mr. Larson graduated (Hydraulics and Pneumatics) from Alexandria Technical College. He then joined Cat Pumps and, at the same time, attended the Institute of Technology at the University of Minnesota. He graduated with a B.S. degree with Honors (Mechanical Engineering). Mr. Larson is a registered Professional Engineer in the State of Minnesota and has been with Cat Pumps for 17 years.
Luis Rizo is the Senior Reliability Engineer with GE Plastics, in Selkirk, New York. He is responsible for plant reliability upgrades and long term service factor improvements. Mr. Rizo provides support in improving the process that yields long-term equipment reliability plantwide as well as support for intraplant issues.

Previous rotating equipment experience includes 10 years of reliability engineering at Exxon, and three years of design, development, and application of pumps at Worthington Pumps. At these positions, Mr. Rizo was involved in all facets of machinery design, testing, installation, and specification of rotating equipment.

Mr. Rizo has a B.S. and an M.S. degree (Mechanical Engineering) from the New Jersey Institute of Technology. He is a member of ASE and was a member of the Pumps and Systems Magazine User’s Advisory Board.

Andrew Shelton is Engineering Manager for the Myers/Aplex Industrial Pump Division, part of the Pentair Pump Group, in Ashland, Ohio. He is responsible for the new product design and existing product upgrades for both the Myers and Aplex brand of reciprocating pumps.

Mr. Shelton has a B.S. degree (Mechanical Engineering, 1991) from Texas A&M University.
DISCUSSION GROUP 10
on
PUMP SUPPORT ON THE INTERNET

William J. (Bill) Mabe, Coordinator, is the Director of Technology Development and Quality Assurance for Sundyne Corporation, in Arvada, Colorado. He is primarily responsible for coordinating technology and product development for Sundyne’s business units. Mr. Mabe joined Sundyne in 1974 as a Senior Engineer involved in high speed centrifugal pump design. Previous turbomachinery experience includes six years at Rocketdyne, Liquid Rocket Division of Rockwell International, where he was a member of the technical staff responsible for the analysis and design of the space shuttle turbo pumps. He has several patents related to pumping equipment.

Mr. Mabe holds a B.S. degree (Mechanical Engineering) from the University of Missouri at Rolla and a Masters of Business Administration and Technology Management from the University of Phoenix. He also serves on the corporate advisory board for the Colorado School of Mines.

Daniel W. (Dan) Wood is Manager of Advanced Technology for Flowserve Corporation, in Irving, Texas. His group is responsible for sensors, data acquisition, diagnostics and prognostics, reliability analysis, and reliability improvement tools. He began his career at Flowserve Corporation in 1991 in Product Development and, more recently, has served as a technology transfer channel between Flowserve and DuPont while on special assignment in Wilmington, Delaware.

Mr. Wood graduated from the University of Cincinnati (BSME, 1991). He is a member of ASME and the Hydraulic Institute. He is also a certified Level III Vibration Analyst.
DISCUSSION GROUP 11

on

IMPROVING MEAN TIME BETWEEN PUMP FAILURES

John P. Joseph II, Coordinator, is an independent consultant with Rotating Equipment Systems Technical Associates, in Houston, Texas. He was previously with BP Amoco where he provided technical and maintenance support for rotating equipment systems to existing asset organizations in BP Amoco, and to Project Management on new projects. Prior to that, Mr. Joseph was with the Amoco Petroleum Products Refinery, in Texas City, Texas. He supervised the rotating equipment engineers and the rotating equipment specialists for the refinery. Mr. Joseph spent six and one half years as Superintendent of Central Shops and three years in Amoco’s Refining and Transportation Engineering Department, in Chicago, Illinois. Previous assignments at the Amoco Texas City refinery also included the Rotating Equipment Consulting Group, the Project Engineering Group, and as a Maintenance Engineer on the Hydrocracking Unit.

Mr. Joseph received his B.S. degree (Mechanical Engineering, 1972) from the University of Texas at El Paso.

William R. (Bill) Litton, Coordinator, is an Initiative Manager (pumps) Williams Company, in Tulsa, Oklahoma. He has more than 20 years of experience in the petroleum industry. He has ability and experience in mechanical equipment, prime mover economics, power optimization, and pipeline system capacities. Mr. Litton also has project engineering ability and experience in handling pipeline expansions, pipeline pump stations, refineries, fractionators, gas and processing facilities, crude oil, refined products, NH3, and propane terminals (brine cavern and excavated caverns). He also has experience in maintaining mechanical equipment company-wide to provide reliable and economical service. This includes rerating of pumps and pump modifications to reduce resonant and nonresonant vibration levels.

Mr. Litton has a B.S. degree (Mechanical Engineering, 1979) from Kansas State University and a B.S. degree (Mathematics, 1978) from Emporia State University. He is a registered Professional Engineer in the State of Oklahoma and participated in the API 610 Task Force.

Robert C. Eisenmann, Jr., currently holds the position of Rotating Equipment Engineer for BP-Amoco at the Texas City Refinery. He provides technical support on maintenance, operation, and installation of refinery rotating equipment. Prior to his current position, Mr. Eisenmann was the Manager of Rotating Equipment at Hahn & Clay, in Houston, Texas. He was responsible for the repair, refurbishment, and enhancement of process machinery for a wide variety of industrial applications.

Mr. Eisenmann received his B.S. degree (Marine Engineering, 1992) from Texas A&M University, at Galveston.
DISCUSSION GROUP 12

on

SEAL USER/MANUFACTURER ALLIANCES

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Alan O. Lebeck, Coordinator, started Mechanical Seal Technology, Inc. (MSTI) in 1987, in Albuquerque, New Mexico. MSTI performs research and product development, designs software, and consults, all in relation to mechanical seals.

Dr. Lebeck served on the faculty of the University of Illinois, then worked for Shell Development. From 1971 to 1987, he served as Professor and Director of the Mechanical Engineering Department at the University of New Mexico, and as Director of the Bureau of Engineering Research. During this time, he started a mechanical seal research program under the sponsorship of the National Science Foundation and the U.S. Navy. This work served as the basis for numerous papers, reports, and inventions. A seal test program was started in 1978 and has continued. His book, *Principles and Design of Mechanical Face Seals*, was published by John Wiley (1991).

Dr. Lebeck received his B.S. (1964), M.S. (1965), and Ph.D. (1968) degrees (Mechanical Engineering) from the University of Illinois.

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Bruce Weber, Coordinator, is the Operations Manager for Best Equipment, in Houston, Texas. As Operations Manager, his duties include supervision of the pump repair facility, consulting with clients concerning pumping systems, and pump troubleshooting. Other areas include failure analysis, pump modifications, bearings, high pressure mechanical seals, and lubrication systems. Prior to joining Best Equipment, Mr. Weber was associated with Koch Hydrocarbon, in Medford, Oklahoma, for 18 years. His responsibility as Maintenance Supervisor included 10,000 miles of pipelines that employed 2300 pumps. He also served as a consultant for Koch’s four light hydrocarbon processing plants.

Mr. Weber is currently enrolled at the University of Oklahoma, working toward a B.S. degree.

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Steve Knoner is the Alliance Development Manager for Flowserve Flow Solutions Division, in Burr Ridge, Illinois. He is responsible for promoting alliance activity across North America. He has held various sales positions for Flowserve and has more than 14 years of experience in the sealing industry including several years in the field applying mechanical seals.

Mr. Knoner has a B.S. degree (Mechanical Engineering) from Iowa State University and an MBA degree from Washington University, St. Louis.

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Tim Reece is the Strategic Alliances Development Manager for John Crane Inc., North America, in Wakefield, Rhode Island. His group is responsible for coordinating and developing alliances with strategic customers for John Crane, North America. Mr. Reece joined John Crane, Inc., in 1996 to work as a National Accounts Manager. At that time, the process industry was beginning to move toward expanding national contracts to include reliability engineering services and writing site-specific fixed fee agreements for their annual mechanical seal usage. Previously, Mr. Reece held sales or sales management positions with EG&G Sealol Industrial Division and EG&G Sealol Eagle. He spent 10 years working in California on the production side of the oil industry as a Regional Sales Manager with Baker Hughes and as a Reliability Engineer with Oil Dynamics, Inc.

Mr. Reece has a B.S. degree (Business Administration) from the University of Phoenix.
DISCUSSION GROUP 13
on
LIFE-CYCLE COSTS

William A. (Alan) Evans, Coordinator, is Manager of Engineering for the Mechanical Seal Division of A.W. Chesterton Company, in Groveland, Massachusetts. During his eight years with the company, he has held several positions. He has spent 20 years in the field of rotating equipment, focusing primarily on pumps and turbomachinery. He gained broad experience as an end-user of rotating equipment during his 14 years as maintenance/reliability engineer in process industries. Mr. Evans' technological background and experience cover a wide range of topics, including tribology, machine design, predictive maintenance, and reliability engineering. He has conducted lectures, seminars, and presentations on improving reliability as it relates to pumps/seals and pumping systems. He has published articles for STLE, of which he is a member.

Mr. Evans received his MBA from Northeastern University and his BSME from Rochester Institute of Technology. He also has an Associates degree in Applied Science from Pennsylvania State University.

Kenneth R. (Ken) Burkhardt is a Pump Consultant with the DuPont Company, in Wilmington, Delaware, where he provides pump, mechanical seal, and pumping system technical support throughout DuPont. Prior to his current position, Mr. Burkhardt held manufacturing site positions of Site Maintenance Technology Leader, Mechanical/Reliability Team Leader, Site Rotating Equipment Engineer, Maintenance Engineer, and Project Engineer.

Mr. Burkhardt participates in ASME Standards Committee B73 (Chemical Standard Pumps) and is a member of ASME B73.3 Sealless Pump revision subcommittee working group. He graduated from Virginia Polytechnic Institute with a BSME degree (1981). He is a member of ASME and is a registered Professional Engineer in the State of Alabama.
DISCUSSION GROUP 14
on
MIXERS AND AGITATORS

Bruce E. Freeland, Coordinator, is with Lightnin, in Rochester, New York. He was previously Director of Product Design and Development for the Industrial Products Group of Goulds Pumps, Inc. in Seneca Falls, New York. He was responsible for all product development of pumps sold in the chemical, paper, power, petrochemical, and refining industries, along with product engineering of currently produced products for these markets. His past experience includes positions as Market Manager and 20 years of experience in research and development.

Mr. Freeland was Goulds Pumps representative for all API committee activity and member of the API 610 and API 685 Task Forces. He has presented various technical papers in the past and has been awarded the Goulds Pumps Engineering Excellence Award. He was formerly an Advisory Committee member of the International Pump Users Symposium.

Mr. Freeland received his B.S. degree in Mechanical Engineering from Clarkson University and is a registered Professional Engineer in the State of New York.