

GEOFFREY R. EGAN, Ph.D.

SPECIALIZED PROFESSIONAL COMPETENCE

Experience includes fatigue, fracture, and stress analysis of welded structures involving pressure vessels, offshore platforms, oil and gas pipelines, bridges, and steel framed buildings; fracture control procedures for pressure vessels; integration of fracture mechanics, stress analysis, and nondestructive examination (NDE) for fracture safe design; and materials selection procedures, welding methods and procedures, and properties of welded joints.

Recent work includes technology development for the Oman-to-India Gas Pipeline focussed on pipeline risk analysis, reliability, and welding and material issues; specifications for quality control during line laying and issues related to subsea repair; analysis of liquids pipeline rupture and leaks; design procedures for chilled natural gas lines; gas pipeline failure analysis and line internal inspections; elastic-plastic finite element analysis; the effect of imperfections on structural integrity; significance and effect of residual and restraint stresses on structural performance; measurement of residual stresses; selection of welding procedures for avoiding hydrogen cracking; analyses of defects in linepipe; repair welds and procedures; prediction of stress corrosion crack growth in austenitic piping; evaluation of fatigue performance of deep water platforms; fracture controls for chilled natural gas pipelines; review and evaluation of inspection records; reinspection programs; assessment of document tracking systems; sampling programs for weld quality assessments; analysis of inspection requirements for cast austenitic power plant components; development of life extension programs for LNG plants; evaluation of inspection data for cooling water systems; analyses of ERW pipeline failures; concrete intake structure damage monitoring schemes; risk analyses of gas pipelines; risk prioritization of maintenance activities for chemical plants; inspection program prioritization; licensing hearings; and litigation support.

Dr. Egan is based in APTECH's Corporate Headquarters located in Sunnyvale, California.

EDUCATION AND PROFESSIONAL BACKGROUND

- B.E. (Mechanical), University of Canterbury, New Zealand (1966)
- DIC, Imperial College of Science and Technology, England (1970)
- Ph.D., University of London (1972)
- Member, American Society of Mechanical Engineers
- Member, American Welding Society
- Member, Institution of Mechanical Engineers (Chartered Engineer)
- Member, The Welding Institute
- Member, The American Society for Nondestructive Testing
- Member, The American Society of Naval Engineers

SELECTED REPORTS, PUBLICATIONS, AND INVITED LECTURES

Advanced Maintenance Technologies for Optimized Turnaround Efficiency and Future Reliability
NPRA Refinery and Petrochemical Plant Maintenance Conference, Austin Texas (with F. Maxwell and R. Heller) (May 23-26, 2000).

Mechanical Integrity: Repair or Replace, NPRA Refinery and Petrochemical Plant Maintenance Conference New Orleans Louisiana (with D. Joiner, et.al.) (May 25-28, 1999).

San Diego Unified Port District Lindbergh Field Expansion- Terminal Building Structural Steel Project, Construction Litigation Superconference, San Francisco California (December 1998).

Risk-Based Mechanical Integrity and its Impact on Environmental and Process Safety Management, Enprotech Exhibition, Taipei, Taiwan (with E.A. Merrick, et.al.) (February 1997).

Plant Maintenance Improvements Using Risk and Reliability Tools, The 1996 Maintenance Management Convention: Proceedings, Midrand, South Africa (with T.D. Burnett) (October 1996).

Risk Assessment of a Deep Sea Pipeline, Offshore Technology Conference, Houston, Texas (with S. Kaplan and E.L. Zebroski) (May 1996).

Life Cycle Management Workshop, NPRA 24th Refinery and Petrochemical Plant Maintenance Conference, San Antonio Texas (with S.M. Kohan) (May 24-25, 1995).

Life Cycle Management of Service Water Systems, The Fourth International Topical Meeting on Nuclear Thermal Hydraulics, Operations and Safety, Taipei, Taiwan (with P. Besuner and S. Mahajan) (April 1994).

Life Cycle Management of Aging Plant Equipment to Assure Mechanical Integrity, First International Symposium on Process Industry Piping, Orlando Florida (with P. Ruebush and E.A. Merrick) (December 1993).

Calculating Remaining Useful Life of Ships, Offshore Technology Conference, Houston, Texas (with B.V. Andrews) (May 1992).

Remaining Useful Life Applied To Ships, (with B.V. Andrews) (1991).

Long-Term Damage Management Strategies for Optimizing Steam Generator Performance, Steam Generator Repair/Replacement Workshop, Denver, Colorado (with P.M. Besuner and E.A. Merrick) (July 1990).

Evaluation of CTOD Results on USX O-Ten Four-Inch Thick Plate, BP Exploration (June 1990).

Effect of Disk Weight Increase Upon Integrity of Four-Inch High-Pressure Check Valve Arm, TU Electric Company (with P. Besuner) (May 1990).

Evaluation of Catalytic, Inc., Contract Work and Its Impact on Piping Stress Analysis for the Mohave Generating Station, Unit 2, Hot Reheat Piping System, Utah Power & Light Company (April 1990).

Fatigue Data Workshop, National Bureau of Standards, Boulder, Colorado (January 1988).

ADDITIONAL INFORMATION

For more information regarding APTECH's personnel and services, please contact our Corporate Headquarters in Sunnyvale, California (USA) at (408) 745-7000 or visit our website (<http://www.aptecheng.com>).