

# **Ralph D. Bowman, P.E.**

Senior Engineer  
Engineering Sciences Division



## **Biographical Sketch**

Mr. Ralph Bowman serves as Senior Engineer in MME's Engineering Sciences Division area. As a licensed Structural Engineer, his areas of consulting include materials aspects of structural failures, component and system structural integrity, mechanical testing, and structural design/evaluation. Mr. Bowman also holds the ASNT NDT Level III certification in three disciplines. Prior to his tenure at MME, Mr. Bowman served as a metallurgist for QORE Inc. and Metallurgical Engineers of Atlanta as well as a Principal for Consulting Metallurgical Services.

## **Education**

Purdue University, B.S. Aeronautical Engineering, 1966  
Purdue University, Graduate Courses in Structural Engineering  
Kodak Industrial Radiography School  
Gamma Industries Isotope Training Program  
Fracture Mechanics Approach to Life Prediction, ASME 1998  
Design Inspection and Repair of ASME Section VII Pressure Vessels  
Principles of Failure Analysis, ASM International, 2001

## **Experience And Expertise**

Mr. Bowman has over 32 years of experience in the following technical disciplines:

Structural Engineering and Design  
Applied Mechanics  
Fracture Mechanics  
Metallographic Interpretation  
Welding Engineering  
Pressure Vessel Evaluation  
Failure Analysis  
Industrial Radiography  
Aircraft Structural Analysis  
Mechanical Property Evaluation: Static and Dynamic Mechanical Testing, Hardness  
Non-Destructive Testing: ASNT Level III Certified in RT, MT, PT

## **Representative Projects**

1. Structural evaluation of beam crane failures.
2. Greyhound Bus maintenance pit inspection of bus support structure.
3. Evaluation of light tower welding at Sanford Stadium at the University of Georgia.
4. Evaluation of buckled oil storage tank in Florida for American Bureau Ships industrial verification.
5. Evaluation of overhead cranes at GM & Atlantic Steel plants for damage assessments.
6. Remaining life evaluation of liquid ammonia nitrate storage tanks at Columbia Nitrogen Plant.

## **Professional Certifications**

Professional Engineering Registration, Georgia, Ohio  
ASNT NDT Level III, RT, MT, PT  
AWS Certified Welding Inspector

## **Publications**

4. "Metallurgical Failure Analysis of Cold Cracking in A Structural Steel Weldment" M.E. Stevenson, S.L. Lowrie, R.D. Bowman and B.A. Bennett *Practical Failure Analysis* 2(4)p. 55-60 (2002).
3. "Stress Corrosion Cracking in a Downcomer Expansion Joint", pp 217-221 in *Handbook of Case Histories in Failure Analysis*, ASM International, 1993.
2. "Failure of a Tied Universal Expansion Joint", pp.347-348 in *Handbook of Case Histories in Failure Analysis*, ASM International, 1992.
1. "Embrittlement of a 76mm Stainless Steel Pipe and Liner From a Hydrogen Plant Quench Pot Vessel", pp107-109 in *Handbook of Case Histories in Failure Analysis*, ASM International, 1992.