Resume:
Michael S. Shelton
Michael.Shelton@msseng.com

Shelton, Michael

SUBJECT MATTER EXPERT: ROTATING EQUIPMENT, VIBRATION, FATIGUE AND FRACTURE MECHANICS

Mr. Shelton was a Worley Subject Matter Expert (14 years) in the following fields:

1.) Finite Element Analysis (FEA) (26 years).

2.) Vibration/Fatigue/Fracture Mechanics/Noise (32 years)

3.) API 579 Fitness-for-Service, Parts 9 (Crack-like Flaws) (16 years)

4.) Flanges (32 years).

5.) ASME B31.3, B31.4 and B31.8 (42 years).

6.) Hydrogen (22 years).

7.) Corrosion Control (NACE Accredited Corrosion Specialist, 41 years)

- *Manager and SME, Jacobs/Worley Special Projects Advanced Technology Group, FEA, Vibration/Fatigue.*
- *Mr. Shelton has an expert level in FEA, vibration/fatigue, AutoCAD and Inventor.*

ASME Code Committee Involvement

American Society of Mechanical Engineers, Boiler and Pressure Vessel Code Committee Service,

- Strength Ferrous Alloys, Section II, Part D (18 years).
- Working Group Fatigue Strength (Vibration) (Secretary/Vice-Chair)(13 years).
- Elevated Temperature Design (8 years).
- Bolted Flange Joint (13 years).
- Working Group, Material Properties (2 years).
- Adjunct Professor, Advanced Finite Element Analysis, West Virginia University.
  Adjunct Professor, University of Alaska, Anchorage, C++, AutoCAD (9 years).

EDUCATION/QUALIFICATIONS

Bachelor of Science, Mechanical Engineering, University of Houston, 1980

Master of Science of Science, Mechanical Engineering, West Virginia University (WVU), 2004.

Certificate of Subsea Engineering, University of Houston, 2019

REGISTRATIONS/ CERTIFICATIONS

Registered Professional Engineer, State of Texas, State of Pennsylvania, State of Oregon, State of Tennessee, State of West Virginia, State of Alaska

Registered Petroleum Engineer, State of Alaska

MEMBERSHIPS AND AFFILIATIONS

National Association of Corrosion Engineers (NACE) Accredited Corrosion Specialist

AWARDS/HONORS

- Length of service: +20 Years
- Joined Jacobs: 2006
- Office location: Houston, TX

Relevant Project Experience

Finite Element Analyses (FEA) (SME)

Client: Various

Title: Finite Element Analysis SME

Start/End Dates:9/1998–current

Scope/Description: Advanced Finite Element Analysis per ASME Section VIII, Div. 2, Part 5 and ASME B31.3/4/8

Responsibilities:ASME Section VII, Div. 2 and 3, Vibration, Elevated Temperature, API 579, Fitness-for-Service

Vibration/Fatigue SME

Client: Various

Title: Vibration SME

Start/End Dates:1/1988–Current

Scope/Description: Fracture mechanics, fatigue root cause analyses, vibration mitigation, flow-induced vibration (FIV), acoustic-induced vibration (AIV), harmonic analyses. .

Responsibilities: Characterize vibration, root cause analysis, mitigation and vibration control specifications. Fatigue analyses, forensic assessments.

Flow Assurance/Fluid Transients/Flow-Induced Vibration (FIV)

Client: Various

Title: Flow Assurance SME

Start/End Dates:2/2003–current

Scope/Description: Two-phase flow modeling (PipeSim), single-phase transient modeling (AFT Impulse), slug flow calculations, turbulence modeling, pipeline sizing, slug catcher sizing. Developed Worley's two-phase Work Instruction.

Responsibilities: Offshore pipeline, slug cathcer sizing, refinery slug flow piping restraint modeling, relief line sizing.

API 579-Fitness-for-Service, ASME FFS-1

Client: Various

Title**:**API 579, Fitness-for-Service SME

Start/End Dates:02/2004–current

Scope/Description: Overview of the project and scope

Responsibilities: Expert level for API 579 with focus API 579, Part 3, Brittle Fracture, Part 9, Crack-like flaws and Part 14, Fatigue.

Areas of Expertise

Fatigue Analysis
Acoustic-Induced Vibration (AIV)
Flow-Induced Vibration (FIV)
Crack-like Flaw Assessments (API 579, Part 9).
Flow Assurance and PVT Modeling
Transient Flow Modeling
Fracture Mechanics
Advanced Finite Element Analysis
AutoCAD (Expert level)
Autodesk Inventor (Expert level)
C++ Programming
MathCAD

Publications:

"A Study In the Process Modeling of the Startup of Fuel Cell/Gas Turbine Hybrid Systems", Michael S. Shelton, et.al., IGTI Proceedings, Reno, Nevada, June 2005 (accepted for Journal Publication and designated as "Hybrid Paper of the Year").Fuel Cell/Gas Turbine Transients – A Study in Process Modeling Using Simulink Modeling of a Hybrid Test Facility, Michael S. Shelton, et.al, IGTI Proceedings, Reno Nevada, June 2005.

"The Role of Solid Oxide Fuel Cells in Advanced Hybrid Power Systems of the Future", Michael Shelton, et.al, The Electrochemical Society, Interface, Vol. 18, No. 3, Fall 2009.

"An Assessment of the State of Acoustic-Induced Vibration (AIV) Management Technology While Presenting Alternative Statistical Approach", Michael S. Shelton, et. al., Internoise 2012, New York City, August 19-22, 2012.

"An Alternative Use for an API 6A Type RX Ring Type Joint Flange", Proceedings of the 2013 Pressure Vessels and Piping Division Conference. PVP2013-97187, PVP 2013, Paris, FR.