PERSONNEL QUALIFICATIONS

Venkata P. Nadakuditi | Associate III

EDUCATION

- Indian Institute of Technology Guwahati, India
  - Bachelor of Technology, Civil Engineering, 2004
- Pennsylvania State University
  - Master of Science, Civil Engineering, 2008

PRACTICE AREAS

- Nonlinear Finite Element Analysis
- Engineering Criticality Assessment and Fitness for Service
- Peer Review
- Repair and Rehabilitation

REGISTRATIONS

- Professional Engineer in TX

PROFESSIONAL AFFILIATIONS

- American Society of Mechanical Engineers
- American Welding Society

CONTACT

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EXPERIENCE

Venkata Nadakuditi specializes in strength, fatigue and fracture mechanics in metals with primary interests in steel structures and pressurized containing systems. Prior to joining WJE in 2016, Mr. Nadakuditi spent his career in the oil and gas industry. His past work included extreme event strength assessments, extreme event strain-based assessments, defect acceptance criteria, fatigue life predictions, and experimental testing. He has experience using API 579, BS 7910, ABAQUS finite element software, special purpose fracture mechanics software programs, classical methods, and design documents (e.g., API, ASME, AISC, BS, DNV) to calculate defect acceptance criteria, material requirements, remaining fatigue lives, strength, and ductility.

Mr. Nadakuditi's graduate studies focused on the seismic analysis of horizontally curved steel girder bridges and their parametric response. Since 2006, he has gained experience using ABAQUS.

REPRESENTATIVE PROJECTS

Nonlinear Finite Element Analysis

- 3-D solid element model of beam-to-column bolted connections with plasticity and contact
- Stress amplification factors for tapered stress joints *
- Stress intensity factors for threaded riser connection joints *
- Thruster Room Design: Design by analysis for dynamic positioning thruster rooms for semi-submersible drilling vessel *
- Transport of Semi-Submersible: Stress analysis of pontoon and columns subjected to wind and wave loading on a heavy vessel transport carrier *
- Flare Boom and Life Boat Support Structure: Structural analyses of flare booms, life boat support structure, and deck extensions on semi-submersible drilling vessel *
- ASME Section 8 Division III Pressure Vessels: Design by analysis of pressure vessels for global collapse, local strain, and fracture mechanics based fatigue assessment *
- Residual Fluid Catalytic Cracking Unit - Houston, TX: Strength, thermal and vibration stress analysis of the of cracking unit
- API Flange Design Charts: FEA to develop design charts of API flanges *
- Mud Pump Frames: Stress analysis of mud pump frames to quantify the stress ranges at critical locations (fatigue cracks) *
- Riser joint in a flex joint - Houston, TX: Stress analysis of travelling riser joints subject to contact in extreme bending *

Engineering Criticality Assessment and Fitness for Service

- Engineering criticality assessments for ship hulls
- Engineering criticality assessments for titanium stress joints *
- API Flange Analysis: FEA of 15K flange to develop leak based design criteria based on analysis and test data *
- Blast Containment Vessel: Design (by analysis) of the blast containment for ASME Section 8 Div III pressure vessel *
- Subsea Jumpers and Elbows: Strength analysis and ECA of a modified elbow to meet the code requirements *
- Limit load analysis of deformed casings for API 579 criteria *
- Limit load analysis of corroded fixed riser pipe for API 579 criteria *

Peer Review

- Dual Derrick System Structural Review *
- Subsea Manifold Structural Review and Design *

Repair and Rehabilitation

- Piping Support Structure: Vibration analysis (random response) on multiple retrofit options to quantify vibration reduction *
- LNG Piping Structure with Fatigue Cracks: Vibration analysis (random response)of the repaired pipe structure to calculate the fatigue*

** Projects completed previous to joining WJE*