



## PERSONNEL QUALIFICATIONS

### Robert D. Gessel | Senior Specialist



#### PRACTICE AREAS

- Bridge Inspection
- Fatigue and Fracture Analysis
- Load Testing
- Nondestructive Testing
- Reinforced Concrete Structures
- Steel Structures
- Weld Quality Assessment

#### REGISTRATIONS

- ASNT NDT Level III Inspector
- AWS Certified Welding Inspector
- Certified Concrete Technologist
- NHI 130078 Safety Inspection of In-Service Bridges

#### PROFESSIONAL AFFILIATIONS

- American Concrete Institute
- American Society for Nondestructive Testing
- American Welding Society
- Heavy Movable Structures

#### CONTACT

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#### EXPERIENCE

Since joining WJE in 1987, Robert Gessel has participated in evaluations of components in a variety of steel and concrete structures. His projects have included assessments of seismic damage, corrosion deterioration, and weld joint quality; fracture critical inspections of bridges and fatigue/fracture studies; evaluation of reinforced and post tensioned concrete; and load testing.

Mr. Gessel has developed special procedures for evaluation of machinery and welded joints and has designed and built customized tools for ultrasonic examinations of sheave trunnions in vertical lift bridges and other components. He has expertise in repair of steel fabrications, welded joints, post-tensioned tendons, and damaged and deteriorated concrete.

Mr. Gessel is skilled in the use of multiple nondestructive methods for evaluation of construction materials, including ultrasonic, radiographic, magnetic particle, liquid penetrant and visual methods for metals, pulse-velocity, rebound hammer, and other methods for use with hardened concrete. He has authored presentations and papers for ASNT, HMS, FHWA Structural Materials Technology, and other conferences regarding the evaluation of fracture critical components welded joints and has provided technical training for ultrasonic and magnetic particle examination methods.

#### REPRESENTATIVE PROJECTS

##### Bridge Inspection

- Fremont Bridge - Portland, OR: In-depth inspection and ultrasonic assessment of fracture critical elements, including pin and hanger connections and welded joints
- Main Street Bridge - Jacksonville, FL: Ultrasonic assessment of sheave trunnions
- Bridge of the Americas - Panama City, Panama: Transfer pin assessment
- Benjamin Franklin Bridge - Philadelphia, PA: Ultrasonic testing of pins
- Congress Street Bridge - Chicago, IL: Assessment of eight bascule trunnions and eight pinion shafts

##### Fatigue and Fracture Analysis

- Robert C. Byrd Green Bank Telescope - Green Bank, WV: Assessment of cracks
- I-435 Bridge - Kansas City, MO: Retrofit and inspection of fracture critical girders
- FHWA, NDE Validation Center: Research of ultrasonic pulse response and intercomponent acoustic coupling phenomenon; detection of cracks in pins
- Sabo Pedestrian Bridge - Minneapolis, MN - Assessment of cracking

##### Nondestructive Testing

- Ash Grove Cement: Ultrasonic evaluation of cracks in seventeen-foot-diameter cast steel "tire"
- Safeco Field (now T-Mobile Park) - Seattle, WA: Ultrasonic detection of cracks in geometrically complex roof transport wheel axles
- Yakima County Jail - Yakima, WA: Investigation of corrosion and welded seam distress in domestic galvanized water pipe
- University of Hawaii - Honolulu: Evaluation of anchor rods, base plate welds, and lighting support
- Crescent Dunes Solar Energy Project: Assessment of pipe weld quality; ultrasonic, radiographic, and phased array review
- Snohomish River Bridge - WA: Magnetic particle and ultrasonic assessment of cracks in sheave trunnions

##### Reinforced Concrete Structures

- Boeing Parking Garage - Renton, WA: Investigation and repair of failed tendons in post-tensioned concrete
- Guam Judicial Center - Hagatna, Guam: Reinforced concrete assessment and repair

##### Steel Structures

- US Airways Center (now Footprint Center) - Phoenix, AZ: Investigation and assessment of weld quality issues
- Tolt River Pipeline - Seattle, WA: Resolution of assembly problems in ninety-inch-diameter bolted water pipe
- United States Embassy: Evaluation of welded moment joints
- University of Washington, Husky Stadium - Seattle: Collapse investigation