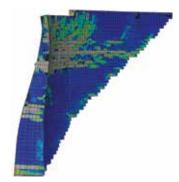


# HYDRO POWER INTEGRATED ENGINEERING SOLUTIONS









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5215 Hellyer Avenue Suite 210 San Jose, CA 95138

### **CONCRETE STRUCTURAL ANALYSIS**

- Non-linear Finite Element Analysis of Dams and Intake/Outlet Structures
- Proprietary Non-Linear Concrete Constitutive Material Model, Validated by many Large Scale Structural Lab Tests
- Dam Stability Analysis
- Structural Seismic Vulnerability Evaluation of Existing Infrastructure and Assessment of Retrofit Concepts
- Thermal/Stress Analysis for New Construction, Mass Concrete

#### **CRITICAL COMPONENT LIFE ASSESSMENT**

- Fitness for Service Analysis (API 570, BS 7910, etc.)
- Remaining Life Predictions
- Flaw Operability Evaluations
- Complex FEM Stress Analysis

#### PENSTOCK INSPECTION AND EVALUATION

- Wall Loss Evaluations using Phased Array and Ultrasonic Techniques
- Advanced Finite Element Analysis
- Fracture Mechanics
- Fatigue Life Assessment

#### SPECIALTY INSTRUMENTATION

- Displacement Monitoring
- Vibration/Dynamic Characteristics
- Frequencies of Vibration and Mode Shapes
- Long Term Health Monitoring

## **SOIL FRAGILITY**

- Probabilistic Risk Assessment of Soil Fragility
- Liquefaction
- Lateral Spreading
- Soil displacements
- Slope stability

#### **MATERIALS & METALURGY LAB**

- Evaluate Material Type and Properties
- Concrete Degradation Assessment: Alkali Silica Reaction (ASR) and Freeze-Thaw

#### SEISMIC EQUIPMENT QUALIFICATION

- Test Plans, Product Similarity Evaluation
- Shake Table Testing (AC 156, IEEE 344, IEEE 382, BelCor, etc...)
- Analysis of Passive Equipment
- Experience Database of Thousands of Previously Tested Equipment Types

#### **TERRORIST THREATS**

- Structural Evaluation of Blast and Aircraft Impact Scenarios
- Evaluation of Safe Standoff Distances
- Window and Glazing Evaluation