



Sensing Systems has been involved in hundreds of projects requiring measurements to be performed in the field at customers' facilities. Following is a sampling of Sensing Systems experience in the field.

Equipment Troubleshooting:

Sensing Systems has been involved in countless projects to determine the causes of equipment malfunction, inefficiency or failure. We install and monitor sensors to obtain real time measurements during equipment operation. We have pinpointed fatigue failure, dynamic stresses, misalignment, vibration, thermal stresses, insufficient cross sections and other reasons as the root cause for failure of equipment and systems.

Structural Integrity Tests:

Sensing Systems personnel have performed over 30 Structural Integrity Tests (SIT) at Power Plants throughout the United States. SITs must be performed to certify the structural integrity of the Containment Building at power plants. The Containment Building is internally pressurized and parameters such as stress and displacement are measured throughout the structure and compared to acceptable values. Each test may include up to 150 individual measurements to ensure compliance with design requirements.

Motor Operated Valves (MOV) and Air Operated Valves (AOV):

Sensing Systems developed techniques and procedures to measure Thrust and Torque on MOVs and AOVs. The measurements are used to properly setup and maintain valve switches and components. Over 1000 installations have been performed in the field.

Stress Monitoring of Bridges:

Sensing Systems has conducted several short term and long term structural monitoring projects on bridges. Stresses are measured on steel or concrete load bearing members using bonded or welded strain gages. Analyses such as rainflow are performed on real time and data downloaded using telephone connections. Major bridges such as the Triborough and Cross Bay in New York City have been monitored using this approach to confirm and/or adjust analytical models.

Balancing Movable Bridges:

Lift bridges require a proper weight balance between the movable roadway and counterweights. Sensing Systems has balanced a multitude of bridges by measuring the torque experienced by the drive train when the bridge is opened and closed. Torque is measured using bondable strain gages and connected to a data acquisition system. Counterweight adjustment is performed based on the acquired data until the desired condition is achieved.

Measurement of Engine, Turbine and Motor Output:

Ship owners, power plants, process plants and pharmaceutical labs require accurate knowledge of torque and horsepower delivered by engines, motors or turbines to ensure operational efficiency of their plants and equipment. Sensing Systems performs accurate torque and horsepower measurements using bonded strain gages and wireless telemetry systems. We have pioneered the use of in-situ calibrations in the marine industry to achieve accuracies of 0.50 percent of full scale output in the field. Sensing Systems has also designed, manufactured and installed permanent torque and horsepower monitoring systems.

Tunnel Stress Monitoring:

Sensing Systems personnel installed 298 strain gage installations on the Ted Williams tunnel to monitor stresses throughout the structure. The outer and inner steel shells were instrumented as well as rebar encased in concrete. All of the installations were surrounded by water or concrete once the tunnel was set in place. A portable data acquisition system was provided to read all the gages.

Roof Monitoring:

Most commercial buildings in the United States utilize steel joist construction to support the roof. Sensing Systems has installed strain gages to monitor dynamic loading of the roof by external agents such as snow or rain. We have also used optical measurements to measure deflection due to static loading of the steel joists. The sensors can be connected to temporary or permanent monitoring systems to alert the business owner of unusual or excessive loading conditions and to take corrective action.

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