

DIAGNOSTICS OF MOTOR OPERATED VALVES

Small Business Innovation Research

Acentech



CONSULTING SERVICES

- Development of signature analysis methods

PROJECT DESCRIPTION

This project, a Small Business Innovation Research program for the U.S. Navy and the Nuclear Regulatory Commission, researched monitoring the condition of motor-operated valves (MOV's), one of the critical components for safe operation of nuclear power plants and nuclear ships. The large number of valves, operated by motors mounted directly on the valve, control flow at various points within the plant or ship. These components are subject to a number of potential failures due to faults in the electric motor, gear transmission, valve seats, or valve stem.

By remotely monitoring voltage and current to the motor and by measuring the vibration on the MOV casing, the torque (or force) that the motor provides and the rotation of the gears can both be deduced in order to form a diagnostic signature that will provide information about the condition of the components. The RH Lyon Division of Acentech developed the signature analysis methods to monitor the condition of MOV's. This technology has since been used at nuclear plants and on shipboard sites.