

## ADVANCED PUMP & MECHANICAL SEAL TRAINING

**Advanced Pump and Mechanical Seal School** is a one-day course designed for maintenance, operation and engineering personnel involved with centrifugal pumps. R.F. MacDonald Co. has been approved by the California Water Environment Association (CWEA) to offer eight contact hours for those who participated in our Advanced Pump & Mechanical Seal Training course. The CWEA Contact Hours can be credited towards the continuing education requirement for re-certification.

Topics will include reducing pump costs and increasing reliability through proper pump and material selection, use of variable speed drives, pump monitoring protection, mechanical seal material guide, flush systems, auxiliary controls and new dry running seals. The format of this all day course includes lecture and interaction with the class. Many field examples with photos are used along with actual pumps and seals to enhance the learning process. The total time for the course is 8 hours.

### AGENDA

#### PUMPS

##### VARIABLE SPEED PUMPING

- Overview of System Curves
- VS Pump Performance
- Interaction with Systems
- Energy Savings
- Reliability
- Application Considerations

##### SPECIFYING THE “RIGHT” PUMP

- Specifications Importance
- Determining Process & System Requirements – New & Existing
- Suction Conditions Effect on Pump Performance
- Single or Multiple Pump Systems Trim
- Selecting the Optimum Impeller Trim
- Variable Speed Drives
- Fluid Specifications
- Selection of Mechanical Components
- Specifying Test Criteria - Factory & Field

#### MECHANICAL SEALS

##### SEAL ARRANGEMENTS & PIPING PLANS

- Flush/Quench
- When to Use Dual Seals
- Basic Piping Plans

##### **TROUBLESHOOTING**

- Identifying causes of Seal Leakage
- Preventing Seal Problems

##### **NON-CONTACTING SEALS**

- The Concept
- Face Lift-Off
- Advantages & Applications