

## Copper Valley Electric is Dam Safe.



Aerial view of the Solomon Lake Dam from a helicopter

Hundreds of people visit Dayville Road every day to see the sights, enjoy the beauty, view the wildlife, and try their hand at catching the millions of salmon returning to the waters surrounding the Valdez Fish Hatchery, but few think about the water behind the dam in Solomon Gulch Lake, 685 feet above them.

Copper Valley Electric is proud to say that you don't think about dam safety because we do. CVEA is serious about its responsibilities. Read on to see how your electric cooperative works to keep the Dam and the community safe from incident.

In addition to CVEA's internal procedures, the Federal Energy Regulatory Commission (FERC) sets standards for Solomon Gulch Dam and many other dams across the United States. These standards are spelled out in regulations and guidelines that are used every day at the Solomon Gulch Hydroelectric Plant.

Because of this, there is a multitude of activities performed at the Solomon Project that few people know or realize, all done to keep the Dam safe.

To begin, the Solomon Gulch Hydroelectric Project is staffed 24 hours a day, 365 days per year

with a qualified Operator. This Operator controls all the shutoff valves necessary to stop water from flowing down the two pipes (penstocks). If there was a break in the penstock or a malfunction at the turbine, the Operator can stop the water with remotely controlled switches. This gives the Operator a chance to immediately address penstock related problems at the first indication of any leaks or unusual changes in water flow.

To assist the Operator, highly technical arrays of sensors and monitors that provide real time feedback have been installed. These sensors tell the Operator about any problems such as too much volume coming down Solomon Gulch Creek or the penstock.

In addition, the sensors tell the Operators about high temperature/fire warnings, vibration warnings, lake level readings and other variables all related to the safety of the equipment and the personnel in the vicinity of the project.

This array of sensors feed into our Early Warning System (EWS) and the Supervisory Control and Data Acquisition (SCADA) system. In simple terms, when something is wrong, SCADA alerts the



Operator and the EWS sounds an alarm.

In addition to monitoring water conditions, CVEA has a strict inspection standard to look at the Dam and other structures. As an example, there are 32 monuments (permanent location markers-seen above) built into the dam, dike and spillway. CVEA routinely hires a professional surveyor who visits the site and measures the monuments for movements to one hundredth of an inch.

The structures are measured for front and back movement, left and right movement, and up and down movement. Any movement larger than .02 inches requires CVEA action or increased inspection.

Routine inspections of the Dam are conducted every week, but the Dam is also inspected when situations occur. An earthquake is a good example requiring a situational inspection. An Operator is dispatched to the lake after every reportable earthquake. These physical inspections (routine and situational) are completed year-round. In the winter, a track vehicle must be used to reach the Dam. CVEA maintains its own track vehicle to accomplish this winter visit.

After all the monitoring, testing and inspecting, our job of keeping you safe is still not complete. CVEA has written and annually updates an Emergency Action Plan (EAP).

This plan is coordinated with all the emergency response agencies in Valdez to include Fire, Police, Coast Guard, Alyeska Security, Providence Hospital, Department of Transportation, National Weather Service, FERC and others.

CVEA performs training every year and exercises the EAP at least twice a year with Valdez emergency response agencies. During these exercises, warning sirens and flashing lights are activated on Dayville Road to notify anyone in the inundation (danger)



**Above left, one of 32 monuments, or permanent location markers, built into the dam, dike, and spillway at Solomon Lake.**

**Top, Mike Rodgers, CVEA Plant Operator, monitoring the SCADA System at the Solomon Gulch Hydroelectric Plant.**

**Above, CVEA warning beacon used to notify those in the inundation area of the Dam.**

Photos by John Hunter, CVEA Plant Manager

area of the Dam. An emergency notification is also practiced to make sure our notification procedures are tested and true.

The next time you visit the Valdez hatchery to admire the salmon, please turn around and wave at the Operators in the Solomon Gulch Hydroelectric Plant.

These Operators are not only making sure your lights are on but they are also watching out for you 24 hours a day to make sure you are Dam safe. ■