



South line crew members **Robert Flores**, left, **Geof Buchholz** and **Brian Adams** change insulators in a tower structure. (Photo by **Joel Carrillo**.)

SN insulator replacement improves reliability

by **Dave Christy**

Line crews in Northern California will complete insulator replacement later this year to improve the reliability of Western's Cottonwood-Roseville 230-kV line.

Sierra Nevada Region's North Line and South Line Maintenance crews have changed out 1,200 insulators and will change out the remaining 500 this fall. "We've done 50 miles and have 22 left to do," said **Ross McFate**, North line crew foreman.

Maintenance crew members who worked on the project this spring included **Brian Adams**, **Geoffrey Buchholz**, **Joel Carrillo** and **Robert Flores** from the South line crew and **Scott Hicks**, **Ralph Armstrong**, **David Floyd**, **Daren New**, **Will Schnyer** and **David Horton** from the North line crew.

When the Cottonwood-Roseville line was rebuilt in 1981, the Cottonwood-Oroville section was reinsulated with polymer insulators, a new technology at the time. "The line has been tripping ever since," McFate said.

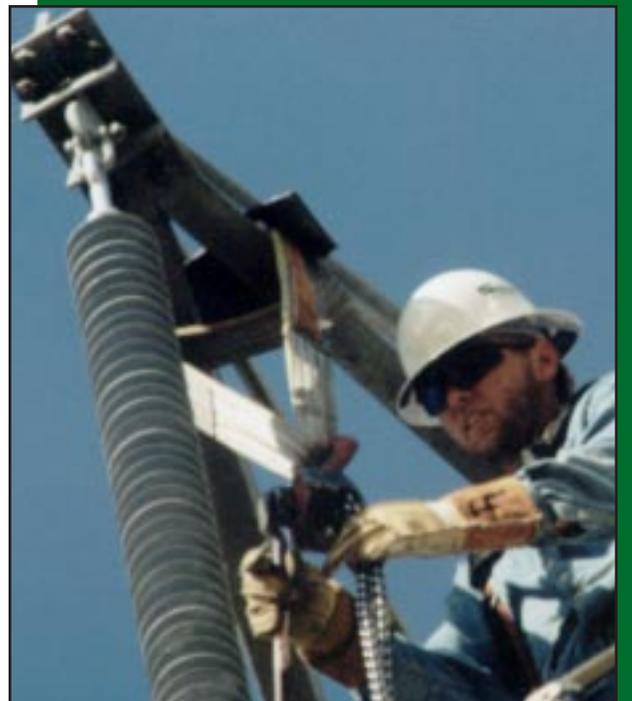
The line has averaged about 8.5 faults each year, but crews couldn't determine exactly where they were occurring. Patrols of the line found no obvious problems such as trees or flashed insulators.

Bonneville Power Administration and Western tested the insulators, but they found no problems.

The replacement project has produced evidence of insulator problems, though, and maintenance personnel expect the project will improve the line's reliability. When line crews removed a number of old insulators this spring, they found problems such as water leaking in the insulators and power arcing on the stems of some insulators.

Crews used both a truck and ladders to do the work, perfecting the process to replace insulators on a complete tower in 45 minutes, using ladders while observing safety requirements.

(Note: Christy is a public affairs specialist in Folsom.)



North line crew member **Ralph Armstrong** adjusts a sling during insulator changeout. (Photo by **Joel Carrillo**.)