

## **N22. Evaluation Of Iron-Based Hardfacing Alloys**

The most promising galling-resistant alloys are three iron-base alloys now being tested in a loop facility operated by Atomic Energy of Canada, Ltd. These alloys were deposited on three-inch gate valves that are being exposed under simulated PWR primary coolant chemistry. Preliminary results from nondestructive examinations (including leak rate, dye penetrant, visual, and profilometry) performed after 1000 cycles of open-shut-open cycles at full system temperature and pressure are very encouraging. EPRI's NOREM alloy, the Stoody Deloro Stellite EB 5183 alloy, and the Thyssen Everit 50 alloy are all performing somewhat better than the cobalt-base standard Stellite 6. These alloys are sufficiently robust to merit consideration for use in a utility's cobalt replacement program. Initial applications should be in small valves.

*For more, see Radiation Control News, No. 6, June 1990 (EPRI, 3412 Hillview Avenue, Palo Alto, CA 94303).*