



5. LOCKUP PROBLEMS WITH WESTINGHOUSE IQ-1000 II MOTOR PROTECTORS

On January 17, 1994, the earthquake in Southern California caused widespread power outages in the western portion of the United States, and commercial power was lost at the Idaho Chemical Processing Plant. When commercial power was lost, a standby diesel generator automatically started and supplied power to critical loads. During a power transient caused by starting a large load on the diesel generator, four electric motors dropped off line and did not respond to a start command even though individual controllers indicated a ready-to-start condition. Facility personnel had to completely de-energize and then re-energize the motor controllers before the motors could be re-started. (ORPS Report ID-WINC-LANDLORD-1994-0002)

After commercial power was restored, facility personnel determined that the problem could not be duplicated for partially loaded generator conditions or with commercial power supplying the standby motor control center. Investigators determined that all the affected motors were connected to the same standby motor control center which was equipped with new digital Westinghouse IQ-1000 II motor protectors. Facility personnel developed a series of test procedures to determine the cause of the problem. After extensive testing, they determined that the motor protectors developed a software lockup after a power transient. During a simulation of the loss of commercial power, investigators determined that there was a correlation between voltage swings caused by starting a large load on the standby generator and the software lockup of the IQ-1000 II. The motor protector lockup resulted in the unit tripping and not restarting until control power was removed and re-applied.

Facility personnel contacted Westinghouse with the results of the tests conducted at the Idaho Chemical Processing Plant. Westinghouse personnel confirmed the test results and reported that they had isolated the problem to specific IQ-1000 II units with firmware version "F3" introduced in the fourth quarter of 1991. Westinghouse reported that units manufactured from 1987 through the third quarter of 1991 were not affected.

Westinghouse also reported that the units operated properly if the control voltage is maintained within plus or minus ten per cent of nominal voltage. If the control voltage surges beyond this range, the IQ-1000 II may trip the motor and require a power down to reset itself. Westinghouse offered to modify affected IQ-1000 II units to eliminate the power reset after a voltage surge. Technical support can be obtained by contacting Westinghouse at 1-800-542-7883.

Individuals desiring more information about the testing performed at the Idaho Chemical Processing Plant may contact either R. R. Henderson at 208-526-4750 or J. L. Nation at 208-526-3960.

DOE facility personnel are advised to inspect their facilities for the suspect motor protector and take appropriate corrective actions.

6. GLOVEBAG INTEGRITY BREACHED AT SAVANNAH RIVER

On March 22, 1994, maintenance personnel at the Savannah River F-Canyon Site discovered a glovebag that leaked while it was being used as a containment during replacement of a flange gasket located in a contaminated area. The glovebag is a temporary box-shaped installation made of Herculite that was used to contain a contaminated solution of 50-percent nitric acid. Maintenance personnel discovered that approximately two cups of the acid solution had been released to the floor covering under the glovebag. Because of the contamination and the harsh nature of the acid solution, they immediately donned additional protective clothing and respirators. They then re-tightened the flange connection to stop the acid solution leak. (ORPS Report SR-WSRC-FCAN-1994-0020)