

"The significance of both events is that the three could have inhaled airborne contamination because of inattention to their surroundings or because they believed the posted radiological signs were in error. Fortunately, none of the three individuals at the two sites inhaled airborne radioactive material."

FINAL REPORTS: SUMMARIES

1. ELECTRICAL BREAKERS FAILED TO TRIP DURING TESTING

On June 10 and 11, 1993, preventive maintenance on electrical breakers was performed by a subcontractor at the Waste Experimental Reduction Facility (WERF) as part of the biennial breaker trip test. The surveillance and test activities included visual inspection, verifying terminal tightness, and breaker testing. These breakers, which are sealed units, were bench tested by the subcontractor to check the trip function using a current generator. A total of three breakers out of 55 failed the trip test. The failed breakers were identified as a Westinghouse 600 volt, 15 amp, 3-pole breaker and two Westinghouse 600-volt, 700-amp, 3-pole breakers. Individually, the failures were not reportable; however, collectively, they are reportable as an off-normal occurrence. Impact on the facility was minor because of its scheduled outage status. (ORPS Report ID--EGG-WERF-1993-0003)

Investigators indicated that the direct cause of this incident was defective or failed parts. Each breaker exhibited uneven wear and worn closing springs and arm assemblies. Two breakers contained failed electronic components on the printed circuit boards. The rating plug on one of the breakers had also failed. All of the failed breakers were locked out/tagged out. Necessary equipment in the facility received power through a realigned electrical distribution system. The affected breakers were sent to the manufacturer for repair. The breaker-testing vendor report identified the cause of the failures as age and normal wear. Normal service life for these breakers is 12 years. Previous breaker testing at this facility was sporadic and poorly documented.

In order to reduce the possibility of future breaker failures, regular breaker trip testing can be re-emphasized in the Electrical Preventive Maintenance Program. Preventive maintenance procedures developed for facilities may need to include testing methodology, frequency, acceptance criteria, and documentation requirements for the testing program. Maintenance requirements are addressed in DOE 4330.4A, *Maintenance Management Program*. Attention should be paid to breakers that are sealed units, sensitive to age-related or environmental deterioration, or are past the midway point of normal service life. A regular breaker test should be sufficient to identify and document any potential circuit overload protection problems with functioning in-service breakers.

2. UNPLANNED ACTIVATION OF EMERGENCY POWER SYSTEM

On June 17, 1993, a plant facilities and services building maintenance mechanic at Argonne National Laboratory was notified by a facility operator that running and cooling alarms had sounded for the emergency turbine generator in wings F, G, and H of Building 212. The generator startup activated the Emergency Power System; however, the generator had alarmed and cleared by the time the mechanic notified his supervisor. The