

Three individuals were contaminated, two with contaminated shoes and one with clothing and skin contamination. An inspector who was leaving the 13 foot elevation of the AB and a HP Technician responding to the event had contaminated shoes. The Decon Technician from the Gate 2 assignment had contamination on his shirt, pants, elbow, and nose. The Decon Technician had a positive indication on a nasal smear and received a whole body count in accordance with licensee procedures.

The Planner and HP Technician who wore respirators into the Ix Alley and two Decon Technicians received Whole Body Counts (WBCs) on March 26, 1990. All four had measurable activity from cobalt 60. Seventeen additional personnel received WBCs on March 27, 1990, with three additional persons having measurable MPOB's. The licensee gave a WBC for all identified personnel who had been in or near the contaminated areas on the - 2 and 13 foot elevations of the AB. A total of seven personnel had measurable internal exposures greater than 1 percent MPOBs. The measured activities ranged from 1.1 to 2.1 percent MPOB. No additional internal exposures were detected. The licensee calculated MPC Hour exposures from stay times and measured air activities. The seven MPC Hour exposures ranged from 0.1 to 1.2.

e. Respiratory Protection

The inspector reviewed the adequacy of the licensee's respiratory protection equipment assigned to the Planner and HP Technician on March 26, 1990.

10 CFR Part 20.103(b)(2) states in part, that when it is impracticable to apply process or other engineering controls to limit concentrations of radioactive material in air below those defined in section 20.203(d)(1)(ii), other precautionary procedures, such as provision of respiratory protective equipment, shall be used to maintain intake of radioactive material by any individual within any period of seven consecutive days as far below that intake of radioactive material which would result from inhalation of such material for 40 hours at the uniform concentrations specified in Appendix B, Table I, Column 1, as is reasonably achievable.

10 CFR Part 20.103(c) specifies requirements for the use of respiratory protection equipment. One of the requirements is to select respiratory protective equipment that provides a protection factor greater than the multiple by which peak concentrations of airborne radioactive materials in the working area are expected to exceed the values specified in Appendix B, Table I, Column 1 of Part 20. The equipment so selected shall be used so that the average concentration of radioactive material in the air that is inhaled during any period of uninterrupted use in an airborne radioactivity area, on any day, by any individual using the equipment, does not exceed the values specified in Appendix B, Table I, Column 1 of Part 20.

On March 26, 1990, the licensee failed to select respiratory protective equipment that provided a protection factor greater than the multiple of airborne radioactivity exceeding the quantities specified in Appendix B, Table I, Column 1, of Part 20, in that, persons entering the Ix Alley or Gate 2 area on the -2 elevation of the licensee's AB, were provided with a respirator having a protection factor of 50, and exposed to airborne radioactivity concentrations 99 times the quantities Specified in Appendix B, Table I, Column 1, of Part 20.

At the exit meeting on April 20, 1990, the inspector stated that the issuance of respiratory protection equipment having a protection factor of 50 in an area having concentrations 99 times the MPC concentrations was an apparent violation of 10 CFR Part 20, Section 103(c). However, after further review it was determined that the licensee had not violated the requirement because the the airborne radioactivity concentrations the workers were exposed to were not expected by the licensee. The licensee's radiation protection staff estimated that the respiratory protection equipment required on the RWP, having a protection factor of 50, would be adequate to protect the persons entering the Ix Alley that day.

f. Dewatering Spent Resin

The licensee's liquid radioactive waste processing systems were located in the licensee's Decon Building (DB). The licensee utilized a Mobile Resin Transport System (MRTS) to collect and process spent resin transferred from ion exchangers to a spent resin shipping container. Spent resin from filters located in the AB traveled through a pipe tunnel to the DB. That pipe tunnel also was connected to the FHB. The shipping containers were then dewatered and were transferred to a shipping cask for shipment to a licensed disposal site.

The inspector determined that the licensee's HIC dewatering pumping capabilities exceeded the DB's sump pump. Rather than overflowing the DB sump, the licensee ran the dewatering pump effluents through a 300 foot long rubber hose from the DB to a floor drain in the licensee's AB. The 1.5 diameter hose passed through the tunnel that connects the DB with the FHB and AB and entered a floor drain in the AB. The AB floor drain was located in an area called the Ix Alley on the -2 foot elevation.

On March 23, 1990, the licensee transferred spent resin from a spent fuel pool ion exchanger to a MRTS shield and HIC. The licensee had collected the fuel pool ion exchange resin along with low level radioactivity resin from a condensate polishing system for disposal. The licensee began dewatering of the HIC that day, about 3:00 PM and continued to 4:40 PM, March 26, 1990. The resin radioactivity was