

NUCLEAR PLANT'S TOUGH FLOOR COATING MINIMIZES SPREAD OF RADIOACTIVE CONTAMINANTS

Keeping concrete floors clean is always an important maintenance function.

All nuclear plants have radiation safety programs established and monitored by the federal government. When the floors are kept free of radioactive contamination, workers may freely access all areas of the plants without undergoing time-consuming decontamination procedures. As a result, keeping the main access area of the plant free of this low-level radioactive material is important for efficient plant operation and maintenance.

At the Duane Arnold Energy Center (DAEC) in Palo, Iowa, both the turbine building and the reactor building are considered radiation exposure areas. Workers or visitors to these areas must walk through monitors upon leaving. When higher-than-acceptable levels of radiation are detected, individuals are required to follow decontamination procedures.

Because contamination, like dirt, can be picked up by shoes and tracked, keeping floors clean is one of the ways radiation exposure, and the need for decontamination, are minimized at the DAEC. However, floor maintenance is complicated by the damage caused when tools and equipment are dropped on the floor or dragged across it.

As a result, a properly specified concrete floor coating system is necessary to protect the underlying concrete substrate and to provide a smooth surface that is easy to clean. When the DAEC decided to refinish its floors five years ago, it chose two-part epoxy coating products. The coatings provide a high-gloss, hygienic surface that is hard-wearing and durable. The abrasion-resistant topcoat offers selfleveling properties as well as chemical - and impact - resistance.

During scheduled plant-shutdown, the entire 5,000 square feet of the first floor of the reactor building is wet-mopped at least twice a day, and dry mopping with the oil-impregnated wipes occurs four or five times daily. No harsh abrasives are used on the floor and all water is recycled for re-use by the plant.

The coating system is now being used at the DAEC for the turbine building, the reactor building and the pump house. Historically, these areas are repainted every 18 to 36 months. "We are satisfied that with this coating system, we will not have to recoat these areas for many years," says the manager.

The Sherwin-Williams Co., 10-T Prospect Avenue N.W., Cleveland. (abridged)

IMPOMAG January 2002.

TRAVAIL A EFFECTUER PAR LE CANDIDAT

I. COMPREHENSION

Faites un compte-rendu en français de l'article intitulé « *Nuclear Plant's Tough Floor Coating Minimizes Spread of Radioactive Contaminants* ». (10 points) (180 mots environ)

II. EXPRESSION (Répondre en anglais aux 2 questions)

II.1. What does DAEC do to insure safety in their nuclear facility? (3 points) (*about 70 words*)

II.2. As future technicians, do you think that safety should be every plant manager's main concern? Explain your point of view by giving examples and reasons. (7 points)
(*about 130 words*)