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Conductivity of Concrete Floors in Dehumidified Buildings

May 15, 1953

A question has arisen concerning the necessity for providing a conductive surface on the floor of Building 412 to be built in the Elmer Assembly Area, when this Building is dehumidified to 80° F and 50% R.H.

Tests in the past have shown that, because of the high ambient humidity, ordinary concrete is sufficiently conductive to make special provisions unnecessary for preventing static sparks. It may be that dehumidification of a building will destroy this natural conductivity.

Therefore, it is requested that you test the concrete floor of a number of the presently dehumidified buildings and advise us of results for use in the design of Building 412. Your report should indicate the temperature and humidity conditions existing at the time of the test.

A suggested method of test, taken in part from the recommended safe practices of the National Fire Protective Association, is attached.

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PACIFIC SOUTHWEST REGION

COLLECTION RG 326 ATOMIC ENERGY COMMISSION

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FOLDER JOB 884 PROJECT ENGINEERING FILE

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TESTING OF CONDUCTIVE FLOORS

The floor shall be tested with a megger or some form of ohmmeter capable of maintaining a voltage of not less than 90 volts nor more than 500 volts across a resistance of 1 megohm. For making contact with the floor surface a circular, soft metal foil electrode is required. It shall be 5 square inches in area, backed by a resilient material such as felt or rubber. A 5 pound weight placed on each electrode when testing shall exert a uniform pressure over the entire area of the electrode.

Two resistance determinations shall be made:

- (a) Point-to-point on the floor between electrodes 3 feet apart.
- (b) Point to ground

The average of at least 5 readings shall be reported together with the maximum deviation from the average.

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