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NRC STAFF ASKS UTILITIES FOR ADDITIONAL INFORMATION ON "THERMO-LAG" FIRE BARRIER MATERIALS

The Nuclear Regulatory Commission staff has sent a letter to all utilities licensed to operate or construct nuclear power plants asking for additional information the staff needs to verify that the use of "Thermo-Lag 330-1" fire barriers meets the agency's requirements.

The letter expands on two earlier directives requesting information about specific uses of the material in individual nuclear power plants after tests showed that the material may not provide the level of fire protection intended by the regulations. The agency also required that each licensee, which relies on the "Thermo-Lag" material to meet NRC requirements, implement extra measures to prevent damage due to fire.

While the staff is concerned that the use of this material may not, in all cases, meet NRC requirements, it believes the relative safety significance of these concerns is low for several reasons, including:

(1) In response to the two earlier directives, licensees have established fire watches to compensate for possibly inoperable fire barriers. This measure provides an adequate level of fire protection until licensees develop and implement permanent corrective actions.

(2) In addition, nuclear power plants rely on a defense-in-depth concept where multiple safety measures are incorporated. Automatic fire detection and sprinkler systems are provided in areas which have equipment that is important to safely shutdown a reactor. Trained fire brigades are required 24 hours per day at all plants. Fuels that can feed a fire and ignition sources to start a fire are controlled. Because of these measures, it is unlikely that a fire significant enough to challenge a fire barrier will occur.

Current NRC requirements call for features to ensure that systems are able to safely shut down a nuclear power plant in the event of fire in any area. This protection normally is provided

by two trains that are physically independent so that a fire in one of the two trains does not damage the other train.

Electric cables important to the safe shut down of a nuclear power plant are routed in electrical raceways and conduits which must be protected from fire. When this protection is accomplished using fire barriers, the cables could be exposed to warmer temperatures during normal plant operation due to the insulating effect of the surrounding barrier material. The staff also is concerned that some licensees may not have adequately accounted for the insulating effects of the "Thermo-Lag" material in analyses of electric current carrying capacity and, therefore, may not be meeting NRC requirements. The warmer temperatures for cables may result in long-term aging effects on the cable insulation material.

The earlier directives requested information on the use of "Thermo-Lag 330-1" materials in specific configurations. The current letter expands the requirements of the earlier directives to include information on all "Thermo-Lag 330-1" fire barriers by any assembly method--such as installing preformed panels and conduit shapes or by applying the material using a spray, trowel or brush. Further, it requires, for the first time, that information be submitted on ampacity derating issues where the barriers are used either to protect the safe shut down capability from fire or to achieve physical independence of electrical systems.

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