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For the Record

Recent e-mails to the U.S. Nuclear Regulatory Commission (NRC) have expressed concerns regarding the risk from fire at U.S. nuclear power plants. Protecting public health and safety is of the utmost importance to the NRC. This includes minimizing the risk associated with fires at nuclear power plants.

Many of the e-mails received by the NRC refer to the “Browns Ferry” fire, which occurred on March 22, 1975. Although this fire was a significant event that served as a warning to both the NRC and industry, it did not result in the release of radiation or damage to the reactor fuel. After the Browns Ferry fire, the NRC revised its fire protection regulations not only to reduce the chances of a fire starting, but also mitigate the consequences should a fire occur. The ultimate objective of the regulations is to assure that every licensee maintains the ability to shut down the reactors safely in the event of a fire. The regulations require that each licensee have a fire protection program in place to:

- 1) minimize the potential for fires and explosions;
- 2) rapidly detect, control, and extinguish fires that do occur; and
- 3) ensure that operators can shut down the reactor safely despite a fire.

Today, U.S. nuclear power plants use multiple layers of fire protection features to prevent fires from damaging plant safety systems. These features include fire barriers such as insulation and fire proof doors, fire detection systems, and fire suppression systems such as water sprinklers and carbon dioxide systems. U.S. nuclear power plants also have strategically located fire fighting equipment such as hoses and extinguishers as well as trained fire fighters. If a required element of a plant’s fire protection equipment is not available, the licensee must compensate for it, often by dedicating personnel to fire watch duties which include monitoring the area involved, notifying the control room in the event of smoke or fire, and starting to fight the fire if one occurs. Furthermore, the NRC periodically inspects licensees’ means of achieving and maintaining the reactor’s safe shutdown capability in the event of a fire.

Some of the e-mails sent to the NRC expressed concerns about certain fire retardant materials used at some nuclear power plants to protect electrical cables. The NRC issued a Generic Letter in April 2006 which requested that licensees review the use of fire barriers in their facilities in light of the information in the letter and provide a description of any compensatory measures and corrective actions taken or planned to resolve identified deficiencies. All affected licensees have provided to the NRC the information requested about the adequacy of fire barriers

installed at their plants and have completed or are taking corrective action to address any deficiencies. Until actions are completed, effective compensatory measures are in place to ensure that public health and safety are not jeopardized.

Fire barriers are one element of an integrated fire protection program. They are used in addition to fire suppression systems to protect cables and equipment needed to safely shut down the plant. The first level of defense if a fire occurs is the detection of the fire and the actuation of the fire suppression systems. More information concerning the NRC's oversight of reactor fire protection programs is available on the agency's Web site at <http://www.nrc.gov/reactors/operating/ops-experience/fire-protection.html>.