

## CABLE FIRE AT BROWNS FERRY NUCLEAR PLANT

The following material supplements and modifies IE Bulletin 75-04.

### DESCRIPTION OF CIRCUMSTANCES

Additional, though still preliminary, information has become available related to the fire which occurred at the Browns Ferry Site on March 22, 1975. The fire started in the cable spreading room at a cable penetration through the wall between the cable spreading room and the reactor building for Unit 1. A slight differential pressure is maintained (by design) across this wall, with the higher pressure being on the cable spreading room side. The penetration seal originally present had been breached to install additional cables required by a design modification. Site personnel were resealing the penetration after cable installation and were checking the airflow through a temporary seal with a candle flame prior to installing the permanent sealing material. The temporary sealing material was highly combustible, and caught fire. Efforts were made by the workers to extinguish the fire at its origin, but they apparently did not recognize that the fire, under the influence of the draft through the penetration, was spreading on the reactor building side of the wall. The extent of the fire in the cable spreading room was limited to a few feet from the penetration; however, the presence of the fire on the other side of the wall from the point of ignition was not recognized until significant damage to cables related to the control of Units 1 and 2 had occurred.

Although control circuits for many of the systems which could be used for Unit 1 were ultimately disabled by the fire, the station operating personnel were able to institute alternative measures by which the primary system could be depressurized and adequate cooling water supplied to the reactor vessel. Unit 1 was shut down manually and cooled using remote manual relief valve operation and condensate booster pump, and control rod drive system pumps. Unit 2 was shut down and cooled for the first hour by the RCIC. After depressurization, Unit 2 was placed in the RHR shutdown cooling mode with makeup water available from the condensate booster pump and control rod drive system pump.

### ADDITIONAL ACTIONS TO BE TAKEN BY LICENSEES

1. Because the occurrence appears to have resulted from modifications being made to an operating unit, all power reactors with operating licenses should address the actions requested in Bulletin 75-04 as well as the actions described below.
2. Review your policies and procedures relating to construction or maintenance and modification work to assure that activities which might affect the safety of a unit in operation, including the

ability to shut down and cool the unit are properly controlled. Your review should consider particularly your policy on deferring construction, maintenance or modification work on a unit until a shutdown period except for emergency maintenance vital to continued safe operation or safe shutdown of the unit.

3. Review your policies and procedures to assure that for construction or modification and maintenance activities during plant operation, particular attention is given to the following areas:
  - a. The degree of safety significance of affected and nearby cabling and piping.
  - b. The use and control of combustible materials.
  - c. The use and control of equipment that may be an ignition source.
  - d. The assignment of personnel, knowledgeable of plant arrangement and plant operations, whose sole temporary responsibility is monitoring the safe performance of construction or maintenance and modification work, including attention to otherwise unattended areas adjacent to the work areas.
  - e. Provision of installed or portable equipment to provide the monitoring personnel with prompt communication with the operating staff in the control room.
  - f. Provision of adequate fire prevention and fire suppression equipment, installed or portable, for the following locations:
    - (1) Areas where work is being performed.
    - (2) Areas where occurrence of a fire has high safety significance, even though the probability of occurrence is relatively small.
  - g. Recognition that a fire, even one involving electrical equipment, may, if of sufficient intensity require water as the ultimate suppression medium.
4. Review your emergency procedures to assure that consideration for alternate methods for accomplishing an orderly plant shutdown and cooldown are provided in case of loss of normal and preferred alternative shutdown and cooldown systems for any reason (e.g., a fire). In this connection, assure that the minimum

information necessary to assist the operators in such shutdown actions, the minimum protection system actions required (e.g., scram) and the spectrum of alternative paths available to the operators to supply cooling water and remove decay heat dependent on plant conditions are included in your emergency procedures.

5. Report to this office, in writing, within 20 days of the date of this Bulletin, your schedule for review in each of the above areas.
6. Upon completion of your reviews, provide this office with the results of these reviews and the schedule for accomplishment of any revisions to your policies and procedures, and any proposed changes to the facility, and the date by which the changes are scheduled to be completed. If this latter date is more than 30 days after the date of the initial report, provide a monthly summary report detailing your progress in the review and/or proposed procedure or facility modifications. Reports requested by Bulletin No. 75-04 may be incorporated with the initial response to this Bulletin.