ATTACHMENT #3

STATE OF ILLINOIS)
) SS.
COUNTY OF COOK)

A F F I D A V I T

I, JAMES S. ABEL, being first duly sworn on oath, depose and state that the following is true to the best of my knowledge and belief:

1. I hold a degree in Engineering from Rose-Hulman Institute of Technology, and am currently employed as a Section Engineer in the Station Nuclear Engineering Department of Commonwealth Edison Company with responsibility for supervising engineering efforts in connection with each of Commonwealth Edison's boiling water reactors, including Dresden Unit 1. These responsibilities require familiarity with the upgrading of the Dresden Unit 1 sphere safety devices, modifications of the reactor protection system and the fire protection for electrical cable as well as other design aspects of the Unit.

2. The upgrading of sphere safety devices, modifications of the reactor protection system (RPS) to comply with the single failure intent of IEEE 279-1968 and fire protection for electrical cable in the area of containment sphere penetrations and in the cable tunnel are being designed and installed as required by the NRC Order for Modification of License, Docket 50-010, dated June 23, 1976. This Order required that the modifications be completed following the chemical cleaning for decontamination or not later than December 31, 1977.

3. The systems presently being designed to accomplish the intent of the Order are described below.

Upgrading of Sphere Safety Devices

The devices within the containment sphere have been analyzed to determine which devices are necessary for the safe shutdown of Dresden Unit 1. These devices were tabulated and submitted with a recommended action in Commonwealth Edison Company's June 30, 1975 letter to J. G. Keppler, Region III, U.S. Nuclear Regulatory Commission.

The following summarizes the actions to be taken for safety related devices located inside the containment.

a. Replace all instrumentation cable that was installed before 1970.

b. Replace all single conductor power and control cable installed before 1970.

c. Replace Limitorque motor operators for AC and DC service installed before 1970.

d. Provide new power supply source for six (6) motor operated valves that is not susceptible to failure due to the sphere environment. This new source could include relocation of motor controllers outside of the sphere due to the environment qualifications and the installation of new sphere penetrations for power and control cable.

e. Replace existing unqualified instruments with qualified replacement instruments.

f. Provide a neutron monitoring system qualified for post-accident conditions. It will be a single division system consisting of seven (7) analogue-sensing, converting, indicating, recording, alarming and tripping channels. This system will be operational after the design basis event in order to provide the station operator with sufficient and reliable monitoring of the status of the reactor. This information will be used to mitigate the consequences of an accident.

Modifications of the Reactor Protection System

The reactor protection system(RPS) including sensing devices, logic, and scram solenoids will be modified to comply with IEEE 279-1968. These modifications will accomplish the following:

a. Provide additional circuitry to assure proper system protective action following a single failure within the reactor protection system.

b. Provide physical protection to assure channel integrity during malfunctions, accidents, or other unusual events.

c. Provide additional redundancy and physical separation to assure channel independence.

The scope of the proposed modifications to affect compliance will include the following:

a. Isolate existing or new sensing instruments by barrier or relocation, as necessary, to provide separation of redundant instruments.

b. Install two new conduit wireways between sensors and control room to separate RPS digital sensor input cabling from other cables.

c. Install terminal block cabinets and rearrange conductors at the sphere electrical penetrations to provide two safety system penetrations. Construct barriers to provide additional separation between RPS input and output cable at these penetrations.

d. Reconstruct existing RPS logic cabinet to provide a four-channel, one-out-of-two twice logic system with two manual push-button scram channels. Install barriers to provide adequate physical separation between channels.

e. Install two new conduit wireways between control room and scram solenoids to separate the RPS scram output signal cabling from other cables.

f. Install an additional scram backup solenoid to provide redundancy necessary for a two-channel manual scram.

g. Install a fixed automatic fire protection system at the sphere electrical penetrations and in the cable tunnel connecting the sphere to the control room complex.

h. The outputs of the neutron monitoring devices will be modified, where necessary, to be compatible with the proposed four-channel RPS scram logic.

Automatic Fire Protection

An automatic fire protection system will be installed in the cable tunnel and on both sides of the associated containment penetrations. The intent of the system is to detect a fire, alarm the situation and actuate a water spray.

The fire detection system will use a primary and backup detection system. The primary system will be a heat sensitive cable on cable trays. The secondary system will use temperature detectors, ionization detectors or other detection systems, appropriate for the location being monitored. The water spray system will be a zoned dry pipe system that is operated by deluge valves. The fire protection system water supply will be obtained from the existing fire protection system. The fire protection water outside of the sphere will be supplied directly from the existing system. The fire protection water inside the sphere will be piped from the existing fire protection system through isolation valves, and through a spare penetration into the containment sphere. The deluge valves for the inside sphere fire protection system will be located in the cable tunnel area outside the containment sphere. The existing fire protection water supplies are continuously pressurized sources of water with alarms on pressure failure.

4. Commonwealth Edison Company is proceeding as expeditiously as possible to implement the modifications discussed in Item 3. of this Affidavit. As the detailed design has progressed, specific design and procurement problems have delayed the final completion date. Recognizing the importance of the commitment and the extremely short schedule for such a complex problem, Commonwealth Edison established in Fall, 1976, a specific engineering project group for Dresden Unit 1 and is utilizing a critical path method to schedule these activities. In spite of these best efforts, it is apparent that procurement, delivery and construction schedules will prevent completion of the modifications by December 31, 1977.

5. The chemical cleaning for decontamination of the primary system of Dresden Unit 1 is now scheduled for November, 1978. To minimize personnel exposure, it is prudent to complete certain portions of these modifications after the chemical cleaning when radiation levels are reduced.

6. To further assure health and safety of the public, Commonwealth Edison Company is taking the following measures:

a. Remove the plastic face from each of the drum level switches. This will qualify these switches to perform their ECCS function in a LOCA environment.

b. Review the sphere high pressure and drum level sensors, switches, and cables which initiate the ECCS to determine that they will function in a LOCA environment and make modifications as necessary.

7. Commonwealth Edison Company requests that the required completion date for these modifications be extended from December 31, 1977, to December 31, 1978.

James S. Abel
JAMES S. ABEL

Subscribed and sworn to before me
this 8th day of July, 1977.

Nancy M. Hollingsworth
Notary Public