ATTACHMENT A

CHANGE NO. 17 TO THE TECHNICAL SPECIFICATIONS

LICENSE NO. DPR-2

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-10

1. Delete the fifth paragraph of Section B.11 which begins "Operation of this cooling system . . .." and insert in its place the following:

> "The reactor operator may also manually initiate operation of this system. The system will be maintained in operable condition at all times the primary system is pressurized. Operation of the Core Spray System will take priority over the operation of the containment cooling system. Since both systems are supplied cooling water from the fire protection system, the containment cooling will be automatically shut off if insufficient water is available."

2. Add the following Section B.13:

> "13. Core Spray System
>
> The reactor is provided with a spray type, emergency core cooling (core spray) system for use in the event of a serious loss-of-coolant accident (LOCA) resulting from a primary system rupture. The core spray system will provide 1.8 gpm of cooling water per fuel bundle through a single, circular, 60-nozzle sparger located above the core and in the reactor water turning vane assembly.
>
> Operation of the core spray system will be automatically initiated by signals from high sphere pressure and low primary steam drum level. To provide long-term core coolant after a LOCA, the core spray supply will be transferred to the existing post-incident containment cooling pumps by the control room operator. The Emergency Core Cooling System shall be maintained in operable condition whenever irradiated fuel is in the reactor vessel with the following exceptions:

a. The isolation condenser need not be operable when reactor pressure is less than 140 psig.

b. The core spray subsystem need not be operable unless the primary system is pressurized.

c. From and after the time that one of the core spray subsystem pumps is made or found to be inoperable for any reason, the reactor shall be in a cold shutdown condition within 48 hours unless the core spray subsystem pump is sooner made operable. Immediately upon finding or making one of the core spray subsystem pumps inoperable (and daily thereafter until the core spray subsystem pump is made operable), the other core spray pumps, all active components of the emergency condenser, the diesel generator and motor-operated valves shall be demonstrated to be operable or the reactor will be brought to a cold shutdown within 24 hours.

d. From and after the time that the Unit 1 diesel driven fire pump is made or found to be inoperable for any reason, the reactor shall be in a cold shutdown condition within 48 hours unless the Unit 1 diesel driven fire pump is sooner made operable. Immediately upon finding or making the Unit 1 diesel driven fire pump inoperable (and daily thereafter until the Unit 1 diesel driven fire pump is made operable), the Unit 2 diesel driven fire pump and associated motor-operated valves shall be demonstrated to be operable or the reactor will be brought to a cold shutdown within 24 hours.

e. From and after the time that one of the post-incident containment cooling pumps is made or found to be inoperable for any reason, the reactor shall be in a cold shutdown condition within 48 hours unless the post-incident containment cooling pump is sooner made operable. Immediately upon finding or making one of the post-incident containment cooling pumps inoperable (and daily thereafter until the post-incident containment cooling pump is made operable), the other post-incident containment cooling pump, the diesel generator and motor-operated valves shall be demonstrated to be operable or the reactor will be brought to a cold shutdown within 24 hours.

f. From and after the time that the emergency condenser is made or found to be inoperable for any reason, the reactor shall be in a cold shutdown condition within 24 hours unless the emergency condenser is sooner made operable.

g. From and after the time that Unit 1 diesel generator is made or found to be inoperable for any reason, the reactor shall be in a cold shutdown condition within 24 hours unless Unit 1 diesel is sooner made operable.

h. From and after the time that one of a pair of redundant motor-operated valves is made or found to be inoperable for any reason, the reactor shall be in a cold shutdown condition within 48 hours unless the motor-operated valve is sooner made operable. Immediately upon finding or making one of a pair of redundant motor-operated valves inoperable (and daily thereafter until the motor-operated valve is made operable), the redundant valve shall be demonstrated to be operable or the reactor will be brought to a cold shutdown within 24 hours.

i. From and after the time that the Unit 2 diesel driven fire pump is made or found to be inoperable for any reason, the reactor shall be in a cold shutdown condition within 48 hours unless the Unit 2 diesel driven fire pump is sooner made operable. Immediately upon finding or making the Unit 2 diesel driven fire pump inoperable (and daily thereafter until the Unit 2 diesel driven fire pump is made operable), the Unit 1 diesel driven fire pump and associated motor-operated valves shall be demonstrated to be operable or the reactor will be brought to a cold shutdown within 24 hours.

3. Add to the "Other Automatic Functions Performed" column of Table I "Safety System" for the External Sensors of High Sphere Pressure and Low Water Level in Primary Steam Drum:

"Initiation of core spray and the emergency condenser systems."

4. Add the following Section B.14:

"14. Emergency Core Spray System Surveillance

Surveillance shall include a simulated automatic actuation test of the incident mode and post-incident mode operation to be done each refueling outage. Simulated automatic actuation means the injection of simulated signals into the sensors such that the system is activated and performs as if an accident had occurred. For the core spray system in incident mode and in post-incident mode, pump operability tests, and a check of the motor-operated valve operation will be conducted monthly. Flow rate tests shall be conducted each refueling outage. Flow rate tests shall demonstrate a total core spray flow of at least 2100 gpm at a vessel pressure of 140 psig. A logic system functional test of the circuitry shall be made each refueling outage. A logic system functional test means a test of all relays and contacts of a logic circuit from sensor to activated device to assure that all components are operable per design intent. Where possible, action will go to completion, i.e., pumps will be started and valves opened.

Nondestructive testing of the core spray supply line welds and the nozzle to which the core spray is attached shall be inspected in accordance with Section 11 of the ASME Boiler and Pressure Vessel Code except that the inspections shall be performed each time the vessel head is removed."

5. Add the following Section B.15:

"15. Isolation Condenser System

a. Whenever the reactor pressure is greater than 140 psig and irradiated fuel is in the reactor vessel, the emergency condenser shall be operable.

b. Surveillance of the Isolation Condenser System shall be performed as follows:

(1) The shell side water level and temperature shall be checked daily to assure that it contains a minimum of 30,000 gallons and that the temperature of the water does not exceed 100°F.

(2) Simulated automatic actuation and functional system testing shall be performed during each refueling outage or whenever major repairs are completed on the system.

(3) The system heat removal capability shall be determined once every five years.

(4) Calibrate vent line radiation monitors quarterly.

(5) A test of operability of the motor-operated condensate return line valves shall be conducted every cold shutdown except that tests need not be conducted more frequently than every 30 days."

6. Add the following Section B.16:

"16. Auxiliary Electrical Systems

a. The reactor shall not be made critical unless all of the following requirements are satisfied:

(1) One 138 kV line, associated switchgear, and the reserve auxiliary power transformer shall be supplying power to Unit 1.

(2) The Dresden 1 diesel generator shall be operable.

(3) An additional source of power consisting of one of the following shall be operable:

(a) One other 138 kV line, fully operational and capable of carrying auxiliary power to Unit 1.

(b) The 34/4 kV, 2500 kVA substation.

(4) The Unit 1 125 volt battery, the two Unit 1 Diesel Fire Pump 12 V batteries, the Unit 2 and Unit 3 125 volt batteries, and a battery charger for each required battery are operable.

b. Except when the reactor is in the Cold Shutdown or Refueling modes with the head off, the availability of electric power shall be as specified in 16.a, except as specified in 16.b.(1) and 16.b.(2):

(1) From and after the date that incoming power is available from only one line, reactor operation is permissible only during the succeeding seven days unless an additional line is sooner placed in service providing the Unit 1 emergency diesel generator is demonstrated to be operable.

(2) From and after the date that the Unit 2 or Unit 3 125 volt battery system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days, unless such battery system is sooner made operable.

c. Diesel Fuel

There shall be a minimum supply of 2100 gallons of diesel fuel onsite for the Unit 1 diesel generator, 500 gallons for the Unit 1 diesel driven fire pump and 1000 gallons for the Unit 2 diesel driven fire pump.

d. Diesel Generator Operability

Whenever the reactor is in the Cold Shutdown or Refueling modes, the Dresden 1 diesel generator shall be operable whenever any work is being done which has the potential for draining the vessel, containment is required, or a core or containment cooling system is required.

e. (1) The Unit 1 diesel generator shall be manually started and loaded once each month to demonstrate operational readiness. The test shall continue until both the diesel engine and the generator are at equilibrium conditions of temperature while full load output is maintained.

(2) During the monthly generator test, the diesel fuel oil transfer pump shall be operated.

(3) During each refueling outage, the conditions under which the diesel generator is required will be simulated and a test conducted to demonstrate that it will start and accept the emergency load.

f. Unit 1 and Station Batteries

(1) Every week the specific gravity and voltage of the pilot cell and temperature of adjacent cells and overall battery voltage shall be measured.

(2) Every three months the measurements shall be made of voltage of each cell to nearest 0.01 volt, specific gravity of each cell, and temperature of every fifth cell.

(3) Every refueling outage, the Unit 1 batteries and the station batteries shall be subjected to a rated load discharge test. Determine specific gravity and voltage of each cell after the discharge. If this specification has been complied with for a particular battery for Dresden Unit 2 or 3, it shall not be required for Dresden Unit 1.

g. Diesel Fuel

(1) Once a month the quantity of diesel fuel available shall be logged.

(2) Once a month a sample of diesel fuel shall be checked for quality."

7. Add the following Section B.17:

"17. Station Fire Protection System

a. The Station Fire Protection System shall be operable whenever the primary system is pressurized.

b. The proper operating condition for the Station Fire Protection System shall be tested weekly. The weekly Fire Protection System pump tests shall include operability of the 2 Unit 1 screen wash pumps, the Unit 1 diesel fire pump, the Unit 2/3 diesel fire pump, and the motor-operated valves.

c. A simulated automatic actuation of the Fire Protection System shall be performed each refueling outage.

ATTACHMENT B

ADDITIONAL INFORMATION REQUIRED

1. Discuss the maximum reactivity worth of a control rod over the full operating range, including cold, cold to hot, hot standby and low through full power under the three categories, (1) In-sequence rods, (2) Worst non-sequenced rod in an otherwise sequenced pattern, (3) Worst possible configuration, as is done, for example, in the Dresden 2 and 3 SARs. An acceptable criterion for Dresden 1 is that a 280 cal/gm fuel enthalpy shall not result from the drop of a non-sequenced rod in an otherwise sequenced pattern. Indicate over the full operating range where 280 cal/gm peak enthalpy is exceeded for the rod drop accident. For category 1 and 2 ranges where 280 cal/gm might be exceeded, indicate the fraction of operating time normally associated with such ranges and any mitigating changes which might be made in the calculations such as more realistic initial source levels in the "zero power" range and details of procedures needed to prevent non-sequenced rods.

2. Prompt energy deposition into the reactor coolant may occur at fuel enthalpies as low as 280 cals/gm in contrast to the 425 cals/gm assumed in your October 7, 1971 presentation to DRL. Show the relationship between reactivity insertion, prompt energy deposition and mass of promptly dispersed fuel for a range of assumed fuel enthalpy thresholds between 280 and 425 cals/gm. Identify the conditions necessary to cause (1) excessive vessel lift and (2) excessive loss of reactor vessel integrity or reduction in ECCS effectiveness, e.g., overpressure, considering the various modes of permissible operation from cold-solid startup to hot operating conditions.

3. The design of the valves in the emergency condenser return lines and of the core spray isolation valves are required to meet the single failure criterion. The acceptability of all dc-operated motors on the isolation condenser condensate return line valves and all ac-operated motors on the core spray isolation valves is dependent on provisions for redundant onsite dc and ac power. If redundant and independent onsite ac and dc power supplies are to be provided and each of a pair of valves with the same type of operators is to be powered from different sources, the design would be acceptable. In the absence of redundant ac and redundant dc power, one valve of each pair must be ac powered and the other dc powered to satisfy the single failure criterion. Which of these alternatives will you take to meet the single failure criterion?

4. Regarding the adequacy of information available to the operator under accident conditions, you have indicated those instruments which monitor the operability of the proposed core spray system but you have not indicated those instruments which monitor vital information on the condition of the primary coolant system and primary containment. You are requested to augment your response in this regard.

5. Provide an evaluation of the adequacy of the seismic design of the fire protection system. If the system does not meet the criteria for seismic design of the core spray system piping and equipment described in your letter of March 26, 1971, discuss your plans for upgrading this system sufficiently to assure availability of water under design basis earthquake conditions.