Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

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August 9, 1974

Mr. Angelo Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
Office of Regulation
U. S. Atomic Energy Commission
Washington, D. C. 20545

Subject: Review of Dresden Units 2 and 3, and Quad-Cities Units 1 and 2, Control Circuit Deficiencies, AEC Dkts 50-237, 50-249, 50-254 and 50-265

Dear Mr. Giambusso:

In a letter to you dated April 25, 1974 concerning this subject, the schedule for completing the associated corrective measures was indicated as the 197 refueling outages. The corrective measures were completed on Quad-Cities Unit 1 during its recently completed refueling outage. However, because delivery of the necessary materials was delayed, the corrective measures were not completed during the Dresden Unit 3 refueling outage. All materials have been delivered and the corrective measures for Unit 3 will be completed during the next outage of at least five (5) days. The refueling outages for Dresden Unit 2 and Quad-Cities Unit 2 are to begin December 1st and January 1st, respectively, at which time the necessary modifications are to be made.

It is not expected that any further change in these schedules will be necessary; however, you will be notified if changes do occur. Administrative Controls that were discussed in a letter to Mr. D. J. Skovholt dated March 7, 1973 will be maintained until the final corrective measures are completed.

Very truly yours,

Byron Lee, Jr.
Vice-President

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

December 22, 1972

Docket Nos. 50-10, 50-237, 50-249,
50-254 and 50-265

Commonwealth Edison Company
ATTN: Mr. Byron Lee, Jr.
Assistant to the President
Post Office Box 767
Chicago, Illinois 60690

Gentlemen:

Two incidents have occurred at a nuclear power plant that indicate a deficiency in the control circuit design that warrants a review of the control circuits of all facilities to assure that these types of deficiencies do not exist or are corrected if they do exist. Both incidents involved the inadvertent disabling of a component by racking out the circuit breaker for a different component. In one case, this caused the loss of capability to isolate secondary containment when this capability was required. In the second case, the racking out of a breaker for one pump disabled not only the pump being removed from service but also its redundant counterpart. Both of these occurrences resulted from the use of auxiliary contacts on the movable portion of the circuit breakers in the control circuits of other components. When the breaker is racked out, the control circuit employing these contacts is opened and may be rendered inoperable. A copy of the licensee's reports on these two occurrences are enclosed for your information. The licensee's corrective measures for both of these cases included redesign of the control circuits so that racking out the breakers would not render the control circuits of other equipment inoperable.

As a result of these occurrences, we request that you perform a review of the control circuits of all safety related equipment at the plant to assure that disabling of one component does not, through incorporation in other interlocking or sequencing controls, render other components inoperable. All modes of test, operation, and failure must be considered. It appears that in the cases cited above, the racked out position of breakers had not been included in the failure mode analysis of those control circuits.

Also, your procedures should be reviewed to ensure they provide that, whenever part of a redundant system is removed from service, the portion remaining in service is functionally tested immediately after the disabling of the affected portion and, if possible, before disabling of the affected portion.

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The results of your review are requested within sixty days. This information should be provided with one signed original and thirty-nine additional copies.

Sincerely,

Donald J. Skovholt
Assistant Director for
Operating Reactors
Directorate of Licensing

Enclosures:
Licensee's reports on
occurrences

cc w/enclosure:
Mr. Charles Whitmore
President and Chairman
Iowa-Illinois Gas and
Electric Company
206 East Second Avenue
Davenport, Iowa 52801

John W. Rowe, Esquire
Isham, Lincoln & Beale
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One First National Plaza
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Jersey Central Power & Light Company

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April 20, 1972

Dr. Peter A. Morris, Director
Division of Reactor Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Dr. Morris:

Subject: Oyster Creek Station
Docket No. 50-219
Loss of Secondary Containment Integrity

The purpose of this letter is to report to you a violation of a Limiting Condition for Operation in that Secondary Containment Integrity was not maintained as required by Specification 3.5.B.1. of our Technical Specifications.

On April 11, 1972, during performance of a routine weekly surveillance test of isolation of the Reactor Building and initiation of the Standby Gas Treatment System due to simulated high radiation levels on the Reactor Building Operating Floor and in the Reactor Building Ventilation Exhaust ducts, the supply dampers for the Reactor Building Ventilation System failed to close as required. As a result of this failure, Secondary Containment was not in effect.

Isolation of the Reactor Building Ventilation System supply damper is initiated by "b" contacts from the Reactor Building Ventilation System supply fans, SF1-12, SF1-13, and SF1-14 wired in series. However, due to an electrical problem with supply fan 1-13, which resulted in the discovery that the motor was shorted, its supply breaker was racked-out. Thus, the logic control circuit for the dampers was "opened", the normal situation with the fans in operation. When the remaining fans were tripped during the surveillance test conducted at 2:00 a.m. on April 11, 1972, the logic control circuit was still open, the damper control relays remained de-energized, and the dampers did not close.

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The logic circuit was restored by disconnecting the motor leads from the breaker and racking-in the breaker. At 9:20 a.m. on April 11, 1972, an operability check of Reactor Building Isolation was conducted and proved to be satisfactory. A caution tag was placed at the fan control switches in the Control Room to notify operators that if a supply fan breaker is racked-out, the Reactor Building supply damper isolation control logic is defeated unless a jumper is installed in the breaker cabinet. A similar caution note is being stenciled locally on the supply fan breakers.

As noted in the FDSAR, the primary objective of the Secondary Containment System is to minimize ground level release of airborne radioactive materials and to provide for controlled elevated release of the building atmosphere under accident conditions. The containment systems, Primary and Secondary, provide the principle mechanism for mitigation of accident consequences. The off-site accident consequences, however, are relatively insensitive to the Reactor Building in-leakage rate as long as the Standby Gas Treatment System can maintain the building at a vacuum. In this particular instance, the supply and exhaust fans tripped, the exhaust dampers closed, and the Standby Gas Treatment System was initiated. With the above situation, the air supply to the building was not only via the various in-leakage paths but also, and no doubt primarily, via the Reactor Building supply dampers.

Any accident conditions postulated that require secondary containment in determining environmental releases would, under these conditions, have a second path permitting release of the Reactor Building air at approximately a 60-foot elevation.

In order to prevent a reoccurrence of this incident, a circuit design change will be implemented that will permit a Reactor Building supply fan breaker to be racked-out for maintenance without defeating the Reactor Building supply damper isolation logic. Until this design change can be implemented, a standing order will be issued instructing plant personnel in the appropriate practice to be followed to avoid defeating the Reactor Building supply damper isolation logic.

Very truly yours,

Ivan R. Finfrock, Jr.
Manager, Nuclear Generating Stations

IRF/pk
Enclosures

cc: Mr. J. P. O'Reilly, Director
Division of Compliance, Region I

Jersey Central Power & Light Company

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October 6, 1972

Mr. A. Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Giambusso:

Subject: Oyster Creek Station
Docket No. 50-219
Inoperable Standby Liquid Control System

The purpose of this letter is to report to you an incident that occurred at Oyster Creek on September 26, 1972 in which it was discovered that the two pumps in the standby liquid control system were inoperable at the same time.

At 10:45 a.m. on September 25, 1972, the "A" standby liquid control pump was removed from service for replacement of the pump packing. The pump was taken out of service using Technical Specification 3.2.C.3 as the basis. It states, "If one standby liquid control system pumping circuit becomes inoperable during the run mode and specification 3.2.A is met, the reactor may remain in operation for a period not to exceed seven days, provided the pump in the other circuit is demonstrated daily to be operable". Specification 3.2.A is met, therefore, the "A" pump breaker was racked out and the pump secured in accordance with plant safety procedures. The work was not completed by the end of the day shift, and the "A" pump was left in an inoperable condition. At 4:20 a.m. on September 26, 1972, the "B" liquid control system pump was to be run to comply with Technical Specification 3.2.C.3. When the operator depressed the start button, the pump did not start.

An interlock in the starting circuitry prevents two standby liquid control pumps from being run simultaneously. This interlock also prevents the "B" pump from starting when the "A" pump breaker is in the racked out position. The interlock is composed of a normally closed contact in the starting circuit of each pump. This contact is operated from a relay in the opposite pump circuit. If the "A" standby liquid control pump is started either from the control room with the key lock switch or locally from the

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push button station, a relay is picked up which opens the normally closed contact in the "B" standby liquid control pump starting circuit which prevents this pump from operating with the "A" pump running. The reverse is true if the "B" pump is started. The problem developed when the breaker for the "A" pump was racked out. It disabled the pump and at the same time it physically removed the contact in the starting circuitry for the "B" pump which simulated an open contact. This prevented the "B" pump from starting.

As soon as the Shift Foreman was aware of the inoperability of both pumps, he started a normal shutdown of the plant. In the meantime, he received permission to clear the maintenance safety tags and rack the "A" pump breaker to its normal position. He then ran a successful operability check on the "B" pump. The load reduction was stopped and the plant returned to full load.

In order to prevent a recurrence of this event, operating procedures have been changed so that operability tests of redundant engineered safeguards system components will be made immediately following any action that requires one of the systems to be inoperable for maintenance purposes.

We are enclosing forty copies of this letter.

Very truly yours,

Ivan R. Finfrock, Jr.

Ivan R. Finfrock, Jr.
Vice President

IRF/pk

Enclosures

cc: Mr. J. P. O'Reilly, Director
Directorate of Regulatory Operations, Region 1