Commonwealth Edison
Zion Generating Station
101 Shiloh Blvd.
Zion, Illinois 60099
Telephone 312/746-2084

October 26, 1989

Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Zion Nuclear Power Station, Units 1 and 2
License Nos. DPR-39 and DPR-48
Confirmation of Temporary Waiver of Compliance
Technical Specifications, Section 3.17.2 - Aircraft Fire Detection
NRC Docket Nos. 50-295 and 50-304

Reference: a) October 25, 1989 telephone conversation between NRR, Region III and Commonwealth Edison personnel

b) October 26, 1989, telephone conversation between NRR and Commonwealth Edison personnel

Dear Sir:

This letter confirms an October 25, 1989 telephone conversation between J. G. Partlow et.al. from NRC/NRR; C. Papariello et.al. from NRC Region III, and T. P. Joyce et.al. of Commonwealth Edison Company regarding a recent event at Zion Station which necessitated a request for a Temporary Waiver of Compliance. The event is related to operation of the Diesel Generator (DG) room air intake dampers and their relative position, i.e., open or closed, and the resultant operability determination of the Diesel Generator itself. These dampers will open on the start of a DG to provide room ventilation and will close on a signal from the aircraft fire detection system.

Each of the five DG rooms are provided with an aircraft fire detection system which is intended to close the DG room air intake dampers upon an initiating signal from the fire detection circuitry. The purpose of this system is designed to mitigate the consequences of an aircraft crash into areas of the ventilation ducts where the effects of a fire from the aircraft fuel could affect operation of plant equipment necessary for plant shutdown. Technical Specification Section 3.17.2., requires each fire detection circuit to be tested every six months by simulating a signal equivalent to a fire condition and to verify that the associated DG room vent fan will trip and the air intake damper will close within two seconds.

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Recent surveillances performed on the aircraft fire detection circuits have discovered that DGs 2A and 2B room air intake dampers failed to close within the required 2 seconds. The dampers for both rooms closed within 2.85 seconds. In addition, similar testing for DG "0" determined that the room air intake damper closed within 2.08 seconds. Therefore, because of the failure to meet the surveillance requirement, the aircraft fire detection systems for the DGs were declared inoperable and placed in the accident mode as required by Technical Specification 3.17.2.1. Placing the system in the accident mode required the DG room vent fan control switches to be placed in the pull-to-lock position, thus ensuring the fire dampers remained closed. However, with these switches in the pull-to-lock configuration, the other function of these dampers, which is to provide cooling to the DG rooms, was also defeated. An evaluation of the effect of the defeated room intake dampers in the closed position, raised the concern of the potential inoperability of the DG's themselves.

A telephone conversation was held between Commonwealth Edison/NRC personnel to discuss the operability concern and the prudency of a Temporary Waiver of Compliance to justify the restoration of the vent fan control switches to the operable position. Commonwealth Edison feels that the return of the fan control switches to the operable position is prudent because the greater concern was determined to be the availability of DG room cooling capability in order to support operation of the DG, if the machine was required to start. This decision was based on an evaluation of the comparison of risks between the likelihood of a condition occurring where the DG was required to start and the likelihood of an aircraft crash affecting the DG room air intake ventilation ducts. A comparison of the probabilities of the two events occurring was 7.61 E-1 for any condition requiring a DG to start, and 6.94 E-8 for the condition associated with the aircraft crash scenario.

Also, a noncompliance with Technical Specification Section 3.17.2 does not require a unit shutdown because Technical Specification Section 3.0.3 does not apply. Technical Specification 3.15 which governs operation of the DG's, does not contain the reference that Technical Specification Section 3.0.3 does not apply, and therefore a noncompliance with Section 3.15 would require a unit shutdown. The Technical Specifications attached a greater importance to DG operability and also appeared to be consistent with Commonwealth Edison's decision to ensure that the ventilation equipment should be available to support operation of the DG.

As a result of this evaluation, the vent fan control switches were returned to the operable position at 1740 hours on October 25, 1989. This action, however, placed the station in noncompliance with Technical Specification Section 3.17.2, and necessitated the request for a Temporary Waiver of Compliance. A Temporary Waiver of Compliance was granted on October 25, 1989 at 1700 hours.

On October 26, 1989 a second telephone conversation occurred between P. Shemanski et.al. (NRR) and T. P. Joyce et.al. (Commonwealth Edison) to discuss the appropriate corrective action to be taken to comply with the conditions that are required by the Temporary Waiver of Compliance procedure. Prior to the October 25, 1989 event, Commonwealth Edison had submitted a proposed amendment that was primarily a Probabilistic Risk Assessment of the aircraft detection system in an attempt to justify the position of removing the requirements for operation of this system from the Technical Specifications. Upon NRC review of the submittal, NRC personnel had determined that additional information would be necessary to support this position.

During the October 26, 1989 telephone conversation, the NRC requested that the additional information be submitted to them on an expedited basis for their review and consideration as a possible resolution to the event. In addition, Edison personnel suggested a modification to the aircraft detection system which would improve damper closure time in order to achieve compliance with the existing 2-second requirement. These two actions would be performed in parallel and completed according to the following schedule:

1. Forward additional data to NRC by November 6, 1989.

2. Install a modification to improve closure by November 13, 1989.

We appreciate your prompt attention to this matter and are available to answer any additional questions that you may have.

Very truly yours,

Glenn E. Trzyna

G. E. Trzyna
Nuclear Licensing Administrator

GET/nd

cc: Regional Administrator - RIII
Chandu Patel - NRR
Senior Resident Inspector - Zion

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