



Commonwealth Edison  
1400 Opus Place  
Downers Grove, Illinois 60515

April 11, 1991

Mr. A. Bert Davis  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Subject: Quad Cities Station Units 1 & 2  
"Transmittal of Information Pertaining  
to Quad Cities Station Emergency  
Preparedness Program"  
NRC Docket Nos. 50-254 and 265

Reference: Letter from T. J. Kovach (CECo)  
to A. B. Davis (NRC), dated  
February 5, 1991

Dear Mr. Davis:

On January 18, 1991, representatives of Commonwealth Edison (Ms. I. M. Johnson, et al) met with Messrs. W. Snell and T. Ploski of your staff with regard to Emergency Preparedness matters. One topic discussed involved Commonwealth Edison's desire to do a more thorough job of communicating with the Region in regard to our Emergency Preparedness activities. This is especially true given the limited opportunities for NRC Emergency Preparedness Inspectors to visit each of our nuclear sites.

The attached material is meant to highlight the activities relative to Emergency Preparedness during the Quad Cities Nuclear Power Station SALP 9 time frame. The activities undertaken by Quad Cities Station, listed in the Attachment, reflect management's desire to make a strong program even better. It also summarizes actions taken to address NRC concerns identified during the SALP period. We trust that this material will serve as an additional method of communicating with the Region and hope it will aid the Region in its SALP 9 evaluation of Quad Cities.

If you have any questions regarding this correspondence, please contact Irene M. Johnson at (312) 294-8532 or Robert Carson at (312) 294-8662.

Sincerely,

T.K. Schuster  
Nuclear Licensing Administrator

Attachments A-D

cc: W. Snell  
T. Ploski  
L. Olshan, NRR Project Manager  
NRC Resident Inspector - Quad Cities  
NRC Document Control Desk

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## "ATTACHMENT A"

### SUMMARY OF NRC CONCERNS

NRC Inspection Report 254(265)/90002 noted that additional management attention could be needed in the functional area of Emergency Preparedness because of a late event classification that occurred February 13, 1990. This was due to both emergency diesel generators being inoperable on Unit One for a short period of time, and was discussed in Licensee Event Report 254/90-003. Eight other Unusual Events were properly classified during the period of time between January, 1989 and August, 1990 (NRC Inspection 254(265)/90025).

In addition, a Transportation Accident was properly classified and declared on April 19, 1990. No other Emergency Classifications have been declared since that time.

Corrective Actions to preclude any late classifications in the future included the following:

- Training sessions were held to discuss this event and other scenarios to ensure understanding of the Station's Emergency Action Level tables (EALs) and to reinforce the fact that all EALs should be considered when evaluating plant conditions. These training sessions were completed by the end of April, 1990.
- All appropriate Operating Department management were required to read the EALs to ensure familiarization. This was completed by May, 1990.

A routine Emergency Preparedness Inspection Report (254(265)/90015) identified a non-cited violation for failure to provide periodic requalification training to six communicators within the required time frame.

Corrective Actions in response to this item included:

- The six individuals in question were all promptly retrained by September 7, 1990; one week after the inspection exit.
- An enhanced training records tracking system was fully implemented by early December, 1990. This is an upgrade from the old method of tracking personnel GSEP training by hand to a computerized GSEP training data base. The procedure for utilizing this computerized tracking program calls for checking the data base each quarter to determine who is in need of retraining during the quarter.

The routine Emergency Preparedness inspection also resulted in two Open Items. Open Item #254/90015-01, addressed several inoperable emergency lights within the EOF and JPIC which were in need of repair and improved provisions for maintenance.

Corrective Actions toward resolution of this item included:

- The repair of the emergency lights was completed prior to December, 1990.
- A purchase order was initiated for a vendor to conduct a quarterly inspection of emergency lighting fixtures in the EOF and JPIC, during a two year period beginning in January, 1991. This Open Item was closed in Inspection Report 50 254(265)/90018.

In response to Open Item 50-254/90015-02 regarding the incomplete description of the station's meteorological monitoring system in the station GSEP Annex, the station has taken the following Corrective Actions:

- The Station GSEP Annex has been enhanced to include a detailed description of this system. Onsite review of the enhanced GSEP Annex was completed on March 14, 1991. Attached for information is a copy of the revised information (see Attachment D). This change will be submitted to the NRC, along with other annex changes, which resulted from the implementation of the Revision 7 to the Generic Generating Station Emergency Plan (GSEP). It is anticipated that the revised Quad Cities Annex will be submitted by April 19, 1991.

One Emergency Exercise was conducted during the SALP 9 period, resulting in two exercise weaknesses and two items to consider for improvement.

Corrective Actions for these items were addressed in a letter to NRC Region III dated February 5, 1991 (see copy - Attachment C). Progress toward completion of these corrective actions continues to be on schedule.

Response to a tornado which touched down onsite on March 13, 1990, was noted by the NRC resident inspector (NRC Report 254(265)/90002) as being exemplary, as evidenced by the fact there was only one individual injured and repairs to damaged components were expeditiously accomplished. One item of concern that resulted from this event was the inability of personnel in the Reactor and Turbine buildings to clearly understand the messages on the page, and the lack of pagers in trailers.

A study of the current in-plant paging system was conducted on November 29, 1989, and the results issued in a report dated May 25, 1990. This study identified several problems with the current system and recommended solutions to these problems. The selected solutions are scheduled for installation in 1992. The possibility of permanent and/or portable pagers for use in trailers is currently being investigated by the station.

ZDCP:88/48-49

## **"ATTACHMENT B"**

### **SUMMARY OF EMERGENCY PREPAREDNESS INITIATIVES**

Revision 7 to the Generating Stations Emergency Plan (GSEP) was implemented on March 1, 1991, with the majority of groundwork for this implementation completed during the SALP 9 period. The groundwork included a significant revision of the station's implementing procedures, updating of training lesson plans, and training of personnel who were added to the emergency organization to fill newly designated positions. A new standardized MATRIX of required EP instruction modules was developed in a one year joint effort between the six stations' EP Trainers and the Corporate Emergency Preparedness staff. Lesson plans have been and continue to be rewritten to meet these new Standardized Technical Knowledge Objectives (TKO's). These TKO's have been established to provide the same base knowledge level for all Emergency Responders at all six Edison stations, with provisions for station specific additions. In addition, the Quad Cities specific Annex was updated and improved and will be issued to NRC Region III by April 19, 1991 for review and approval.

A tabletop drill, designed for use in the Operational Support Center (OSC), was developed in January of 1991. This OSC tabletop will allow the OSC Director and Supervisor positions to demonstrate activation, setup, and use of the OSC and will assist the station in meeting a company directive aimed at ensuring that exercise proficiency is demonstrated on a biennial basis.

To facilitate timely accountability and to relieve crowding during site assemblies, the station designated two new assembly areas. These areas were officially added to the EP program in conjunction with implementation of Generic GSEP Revision 7. They include the second floor meeting room in the existing service building, and the shop area in the Substation Construction building.

Illini Hospital in Silvis, Illinois, was set up as a receiving hospital for contaminated and injured personnel. This location will serve as a backup to the United Medical Center in Moline, Illinois, and ensure the availability of a support hospital when needed. Setup of the facility involved negotiations with the hospital's administration, training of hospital personnel, stocking of appropriate equipment and supplies, and conduct of drills to demonstrate proficiency. Illini Hospital was officially declared available for receipt of contaminated and injured personnel on March 18, 1991. With the addition of this hospital, Quad Cities became the first station in Commonwealth Edison to have a dedicated backup facility.



The Morrison EOF was upgraded during the SALP period to include an Executive Management Center (EMC). The EMC serves as a conferencing area for the key managers and directors in the EOF, and includes space for NRC Site Team representatives. The EMC provides upgraded capabilities for the easy viewing of plant status information and for teleconferencing with State and Federal authorities. In addition to construction of the EMC, the dedicated NRC Site Team meeting area has been moved to a room adjacent to this new facility.

Quad Cities, with the assistance of the Corporate Emergency Preparedness Staff, voluntarily installed the Emergency Response Data System (ERDS) during the SALP period in order to provide the NRC Response Center in Bethesda with real time plant status information during an emergency event.

The status boards in the TSC and OSC were upgraded in October of 1990 from boards with handwritten headers to permanent headers and/or magnetic headers. This makes the status boards easier to use and to read. The status boards in the OSC have also been reformatted to facilitate effective tracking of OSC team status and availability of personnel from the various disciplines represented in the OSC.

The procedure dictating the conduct of the Station's monthly communications drills was upgraded in 1990 to include location specific checklists. This makes the checklists easier to use and to audit for compliance with procedural requirements.

Six telephones were added to the TSC for use by NRC Site Team Representatives. The phones are located near the various disciplines within the TSC to facilitate use by NRC Counterparts.

The Nuclear Services Emergency Preparedness Staff was consolidated into a single location (the Edison building in Chicago) in mid-1990 to enable more effective communications within the department and with the stations. The NSEP staff has also been expanded to allow for improved support of the Station Emergency Preparedness programs.

Construction of a new facility, the Corporate EOF, located in Downers Grove, was completed in 1990. The CEOF serves the function of the previous Corporate Command Center and has improved communications capabilities as well as sufficient space to allow more complete staffing than was possible at the old facility.

A Human Factors Upgrade of the C-Model Program was accomplished in 1990, currently scheduled for implementation early in the second quarter of 1991.

Finally, significant progress toward implementation of the A-Model at Quad Cities was made during the SALP period, allowing the A-Model to be declared operable on March 30, 1991.



Commonwealth Edison  
1400 Opus Place  
Downers Grove, Illinois 60515

ATTACHMENT C

February 5, 1991

Mr. A. Bert Davis  
Regional Administrator - Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Subject: Quad Cities Nuclear Power Station Units 1 and 2  
Response to Two Emergency Preparedness Exercise  
Weaknesses Inspection 50-254/90022; 50-265/90021  
NRC Docket Nos. 50-254 and 50-265

Reference: L. Robert Gregor letter to Cordell Reed dated  
December 21, 1991 transmitting NRC Inspection  
Report 50-254/90018; 50-265/90018

Mr. Davis:

Enclosed is Commonwealth Edison Company's (CECo) response to the subject Exercise Weaknesses which were transmitted with the referenced letter and Inspection Report. The two exercise weaknesses concerned an inadequate response to the on-site medical emergency, and inadequate analyses by the Technical Support Center's dose assessment staff as well as untimely notification of the State officials regarding these analyses.

CECo recognizes the importance of emergency preparedness exercises and protecting the health and safety of the public. These were given foremost consideration in developing the corrective actions identified to address the exercise weaknesses, and to ensure preventing recurrences.

Additionally, we have included our actions to address the improvement items discussed in the referenced inspection report.

If your staff has any questions or comments concerning this letter, please refer them to Rita Radtke, Compliance Engineer at 708/515-7284.

Very truly yours,

T. J. Kovach  
Nuclear Licensing Manager

cc: L.N. Olshan, Project Manager - NRR  
T. Taylor, Senior Resident Inspector  
T. Ploski, Inspector  
NRR Document Control Desk

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## Response to Exercise Weaknesses

### Exercise Weakness 1

Overall response to the on-site medical emergency was inadequate with respect to the following: the initial medical and contamination assessments of the victim; contamination control techniques demonstrated by the responders; and on-scene command and control. (Weakness No. 50-254/90018-01)

### Discussion

Commonwealth Edison's review identified that these concerns were primarily due to inadequate preparation and control of the drill location and simulated events, which resulted in an insufficient response by drill participants. Based on this review, it is not appropriate to make programmatic changes at this time. We have, however, come to realize the importance of devoting adequate resources and attention to detail when developing medical drill scenarios, whether they are to satisfy the annual medical drill requirement or are part of an emergency exercise.

### Corrective Actions

- 1) The major corrective action for the identified weakness was to conduct a remedial medical drill on January 29, 1991. This drill was observed and evaluated by a representative of NRC Region III and by representatives of Commonwealth Edison's Corporate Emergency Preparedness staff. The conduct of this drill accurately demonstrated our ability to respond effectively to a contaminated injured person.
- 2) Quad Cities Station has arranged for Radiation Management Consultants to conduct first aid training during 1991 for station first responders. This training emphasizes the appropriate handling of a contaminated injured person.
- 3) In the future, Commonwealth Edison will set up and control medical drills that are conducted as a portion of an Emergency Exercise to the same extent as our annual medical drills.

### Exercise Weakness 2

The Technical Support Center's dose assessment staff did not adequately analyze the following items, and then did not inform State officials of these items in a timely manner: commencement of an abnormal release; existence of significant radiiodine and cesium components in the simulated release; and the changes in affected downwind sectors to include portions of Iowa in addition to the Illinois portions of the Emergency Zone. (Weakness No. 50-254/90018-02).

### Discussion

The Technical Support Center did not adequately analyze the release from the plant or inform State officials in a timely manner due to several contributing factors.

The commencement of an abnormal release began just prior to noon, but was not reflected on the NARS form transmitted at 1205. This occurred due to a lack of direction to the NARS communicator as to where to obtain information required for completion of the NARS form.

The Environs group did not recognize the existence of significant radiiodine and cesium components of the release. This was caused by the transmittal of unitless scenario release rate data from the controller to the Chemist and on to the Environs Director, who subsequently made an incorrect assumption as to the units involved. Release data would normally be communicated from the Chemist to the Environs Director via an isotopic analysis printout. These printouts include a description of the units involved.

Appropriate communication of changes in the affected downwind sector which occurred during a release was not transmitted to the involved States. This was primarily due to a lack of direction to the NARS communicator as to the appropriate source of this information.

### Corrective Actions

- 1) Significant revisions to the Generating Station Emergency Plan are to be implemented by March 1, 1991. One change to be incorporated by this GSEP revision will be the reporting chain for the NARS Communicator. Rather than reporting to the TSC's Technical Director, the NARS Communicator will be working for the Assistant Station Director, a newly developed position. Therefore, an appropriate NARS Communicator procedure revision will ensure that this communicator knows that the Environs Director and his staff can provide the most recent release information for the NARS form. The Environs Director procedure revision will ensure that the Environs Director reviews the appropriate portions of the NARS form prior to transmission to State officials. The Assistant Station Director procedure will include ongoing verification that the most recent release information is included on the NARS form. These procedure revisions will be completed by March 1, 1991.
- 2) Commonwealth Edison will ensure that controllers are aware of the necessity to transmit a scenario data to participants with the appropriate units described. This instruction will be added to the controller guidance for all exercises after March 1, 1991.
- 3) Health Physicists at the Quad Cities Station will receive cross-training with Chemists on the appropriate units and interpretation of information provided on isotopic analyses of gaseous effluents. This training will be completed during the annual 1991 training cycle.



- 4) Technical Support Center Environs group members will be trained on non-station sources of release information available to them during an event (e.g. Illinois Department of Nuclear Safety, EOF). This training will be completed during the annual 1991 training cycle.
- 5) The station GSEP organization is changing as a result of revision 7 to the Generic GSEP Manual. The new organization includes the position of Chemistry Director, who will be better able to interpret the information regarding isotopic analyses of gaseous effluents. The Chemistry Director will implement procedures which contain appropriate steps to ensure that he/she will provide scenario data to the Environs and Radiation Protection Directors and can confirm that the data is correctly interpreted and applied. The procedures are to be in place by March 1, 1991.
- 6) Revisions to the procedure that provides direction on completion of the NARS form will be made that inform the communicator that even after a wind shift, previously affected sectors should continue to be listed on the form. In addition, a note will be added to the Environs Director procedure to make him/her aware that previously affected sectors should continue to be reflected when providing updated information to the states. These procedure revisions will be completed by March 1, 1991. Finally, Commonwealth Edison's training of Environs personnel is being upgraded to include more detailed instruction on the handling of wind shift information.

In addition to the two Exercise Weaknesses previously addressed, two Improvement Items were identified that involved ENS communications. These items were:

- Persons used as communicators to the NRC should be reminded of the requirements to maintain open line communications upon request.
- Persons completing Event Notification Worksheets (ENW) used by these communicators should ensure that all relevant portions of these forms are completed, so that the communicator is adequately knowledgeable of onsite conditions.

Corrective actions for these items included individual discussions with the SCRE and communicator involved in the exercise. The Station EP Coordinator stressed to them that an open line communication request can be expected at any time and that as much information as is available should be provided via the Event Notification Worksheet.

In addition, a letter will be developed and sent to those individuals presently used as ENS Communicators and SCREs that will stress the same concerns as above. Finally, procedures and lesson plans will be reviewed, and revised, as appropriate, to reinforce the importance of these two issues. Procedure revisions would be complete by March 1, 1991 and lesson plans revisions would be complete by July 1, 1991.

## ATTACHMENT D

### METEOROLOGICAL INFORMATION

#### 7.3.2 Onsite Meteorological Monitoring Instrumentation

The meteorological tower, located 1623 meters SSE of the plant, is 300 ft. high and is instrumented at three levels. The 33 ft., 196 ft. and 296 ft. levels correspond to the elevations of the possible points of airborne effluent release. Wind speed and wind direction are measured at all three elevations. Ambient temperature is measured at 33 ft. and differential temperatures referenced to 33 ft. are measured at 196 ft. and 296 ft. Precipitation is measured nearby.

All data are recorded on two separate systems; one digital, one analog. A microprocessor-based recorder is the primary recording mechanism for recording, storing and transmitting data to computers within the nuclear station or to other end-point users. An analog recorder provides a backup data recovery mechanism as well as a record against which digitally collected data are compared to assure good quality. If the digital system fails, the analog record is substituted in the official meteorological record for the period.

Bimonthly instrument calibration and monthly data consistency evaluations are made routinely. Recorded meteorological data are processed weekly. These data are used to generate wind roses and to provide estimates of airborne concentrations of gaseous effluents. At the end of each year, all of the hourly average meteorological data are tabulated on magnetic computer tape and microfiche.

##### 7.3.2.1 Instrumentation

The meteorological tower is instrumented with equipment that conforms with the recommendations of Regulatory Guide 1.23 and ANSI/ANS 2.5 (1984). The equipment is placed on booms oriented normal to the general prevailing wind at the site. Equipment signals are brought to an instrument shack with controlled environmental conditions. The shack houses the analog and digital recording equipment, signal conditioners, etc., used to process and re-transmit the data to the end point users.

##### 7.3.2.2 Meteorological Measurement Program During a Disaster

Cooperation between the corporate office and the meteorological contractor assures that a timely restoration of any outage can be made. Emergency field visits to the site are made as quickly as possible after detection of a failure.

**FOR INFORMATION ONLY**

## ATTACHMENT D (continued)

### METEOROLOGICAL INFORMATION

Should a disaster of sufficient magnitude occur to destroy the tower structure, a contract is maintained to have a temporary tower erected within 72 hours, weather conditions permitting. Further, the meteorological contractor maintains two levels of sensors (wind speed, wind direction and temperature) in a state of readiness for use on the temporary tower.

Additionally, CECo's existing instrumentated towers at other nuclear sites provide a high density measurement network with multiple backup opportunities.

Finally, the meteorological consultant provides a 24-hour a day, seven day per week data source consisting of all routinely available National Weather Service Information plus all CECo meteorological network data. This allows for the detailed preparation of forecasts for the duration of an emergency.

Meteorological data are available to the station Control Room, Technical Support Center and Emergency Operations Facility for use in the Offsite Dose Calculation System (ODCS), a computer-based method for estimating the environmental impact of unplanned releases or radioactivity from the station.

#### 7.3.3 Onsite Radiation Monitoring Equipment

Section 2.7, 7.6 and 9.5 of the QCNPS-UFSAR describe in detail the QCNPS radiation monitoring systems and equipment. The modified off-gas treatment system is described in section 9.2 of this UFSAR. The systems and equipment can be categorized into five (5) groups:

1. A process radiological monitoring and sampling system;
2. An effluent radiological monitoring and sampling system;
3. An airborne radioactive monitoring system
4. An area radiation monitoring system; and
5. Portable survey and counting equipment.

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