## Appendix A

## CONFIRMATION OF ACTION LETTER

Docket No. 50-254 Docket No. 50-265 February 2, 1982

Commonwealth Edison Company ATTN: Mr. Cordell Reed Vice President Post Office Box 767 Chicago, IL 60690

Gentlemen:

This letter is to confirm agreements reached between Mr. N. Kalivianakis, Quad-Cities Station Superintendent, and others of your staff, and Mr. W. Axelson and other members of the NRC staff on January 27, 1982, during the management exit interview following the NRC Emergency Preparedness Appraisal.

Immediate corrective actions are required for significant Appraisal Findings. The exact nature of the required actions, as well as the agreed upon dates for such actions, are as follows:

#### 1. Emergency Equipment and Supplies

Required Actions

a. The first aid/decontamination facility must be remodeled such that all equipment and supplies not needed for first aid or decontamination are removed and stored elsewhere; adequate space for the administration of first aid (such as a horizontal working surface) is provided; and the room maintained in a sanitary condition. (Sections 4.1.2.2 and 4.1.2.3) (254/82-02-01; 265/82-02-01).

This shall be completed by June 1, 1982.

b. The licensee must ensure that the interim Emergency Operations Facility (EOF) contains a copy of the pertinent portions of the Final Safety Analysis Report and as-built piping and instrumentation diagrams. (Section 4.1.1.4) (254/82-02-02; 265/82-02-02).

This shall be completed by March 1, 1982.

2. Emergency Plan Implementation Procedures and Interface Procedures

Required Actions

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a. All QGA and QOA procedures which could conceivably result in the declaration of a CoEP Emergency Classification will contain

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a statement to direct the user to inform the Shift Engineer or Station Director of a GSEP condition requiring possible classification of the event. This shall be implemented during the next revision to each procedure. In the interim, a table shall be placed in the QGA and QOA procedure manuals referencing the user to the QEPs. (Section 5.2) (254/82-02-03; 265/82-02-03).

This shall be completed by May 1, 1982.

A procedure must be prepared for the Acting Station Director b. (Shift Engineer or Shift Foreman) which clearly delineates the actions he is to take during an emergency. This procedure must include the classification of the event, appropriate notifications, how to fill out the Nuclear Accident Reporting System (NARS) form for protective action recommendations, the prioritization of tasks for the Rad/Chem Technicians (RCTs) under his direction, and the sounding of the assembly/evacuation alarm for any Site Area or General Emergency. This procedure should not contain any extraneous information that is not needed by the Acting Station Director to implement his responsibilities. All Acting Station Directors must be trained on the use of this procedure. This training must include a means to verify that an adequate understanding of duties and responsibilities has been achieved; i.e., walk-throughs of the procedure. (Section 5.3) (254/82-02-04; 265/82-02-04).

This shall be completed by May 1, 1982.

c. QEP 360-3 must clearly indicate that a site evacuation will be conducted for any Site Area or General Emergency unless radiological conditions prohibit. (Section 5.4.3.2) (254/82-02-05; 265/82-02-05).

This shall be completed by April 1, 1982.

d. The licensee must prepare a procedure for station augmentation such that augmentation capabilities defined in Criterion II.B.5 of NUREG-0654, Revision 1, can be met. This procedure must include a description of the phone tree, and be prioritized to ensure timely shift augmentation. (Section 5.4.1) (254/82-02-06; 265/82-02-06).

This shall be completed by April 1, 1982.

e. The Corporate Command Center Director's call list must be prioritized such that a Recovery Manager will be at the nearsite EOF within 60 minutes of determining that the EOF must be activated. (Section 5.4.1) (254/82-02-07; 265/82-02-07).

This shall be completed by March 1, 1982.

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f. The licensee must incorporate the revised protective action recommendations table (Table 6.3-1) into the GSEP and appropriate station emergency plan implementation procedures (QEPs). (Section 7.2) (254/82-02-08; 265/82-02-08).

This shall be completed by April 1, 1982.

g. QEP 530-2 must be revised to ensure that the communication checks with the NRC as required by 10 CFR 50, Appendix E, Section IV.E.9.d are conducted. (Section 5.5.1) (254/82-02-09; 265/82-02-09).

This shall be completed by April 1, 1982.

h. The appropriate QEP procedures must describe the provisions and time required for notifying personnel outside the protected area but within the owner controlled area (e.g., visitors center, warehouse, and old training building) that they should evacuate the area. (Section 5.4.3.2) (254/82-02-10; 265/82-02-10).

This shall be completed by April 1, 1982.

If our understanding of your planned actions described above is not in accordance with the accual plans and actions being implemented, please contact this office by telephone and in writing within 24 hours. Further, please inform this office, in writing, upon completion of all the above action items.

Sincerely,

James G. Keppler Regional Administrator

#### APPENDIX B

#### PREPAREDNESS IMPROVEMENT ITEMS

Based on the results of the NRC's appraisal of the Quad-Cities Nuclear Station Emergency Preparedness Program conducted January 18-27, and February 8, 1982, the following items should be considered for improvement:

NOTE: These items are prioritized in order of importance.

- 1. All Station Group Director's procedures should be revised to include references of appropriate QEP procedures used to implement specific functions or actual descriptions of the method for implementing that Director's responsibilities. (Section 5.1)
- All critical QEP procedures should be tabbed for easy access. (Section 7.2)
- QEP 130-1 should include a checklist or form to conduct trend analysis of plant radiological and operational parameters that the Technical Director deems critical. (Section 5.4.2)
- 4. An overview procedure should be developed which orchestrates the onsite emergency radiation protection program. A cross reference table similar to QEP 200-T2 may be useful. (Section 5.4.3.1)
- All personnel listed as being in the line of succession as any of the Station Group Directors should have a current copy of the GSEP and QEPs. (Section 5.5.3)
- 6. The licensee should include in the fire alarm forms a description of the safe shutdown equipment that could be affected by a fire, and a statement to request the Shift Engineer to classify fire emergencies in accordance with QEP 200-T1. (Section 5.4.8)
- Survey instruments assigned to emergency kits should be replaced with others when calibrations are due to ensure a continuous state of preparedness. (Section 4.2.1.1)
- 8. The licensee should conduct unannounced offshift augmentation drills to ensure that the goals of Table B-1 of NUREG-0654, Revision 1, can be met. These drills should be documented, conducted on a semiannual basis, and identified deficiencies corrected. (Section 2.2.2)
- QEP 550-1 should be revised to add procedures for inventories of first aid, decontamination, and respiratory protection supplies and equipment. (Section 5.5.1)

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- 10. A real time recording of wind direction and speed at two levels, one for ground level and one for stack releases, and an indicator of atmospheric stability should be installed in the Control Room in accordance with the implementation schedule provided in Task Item III.A.2 of NUREG-0737. (Section 4.2.1.4)
- 11. The licensee should prepare a procedure for onsite out-of-plant surveys similar to the newly revised EG-3 which contains a diagram of the site so that both gamma and beta-gamma readings can be recorded. (Section 5.4.2.1)
- 12. QEP 180-1 should be revised to indicate that RCTs will be dispatched to the assembly areas to monitor and decontaminate if necessary all personnel still wearing protective clothing; and an RCT will be dispatched to the machine shop to monitor the area for direct and airborne radiation levels. (Section 5.4.3.2)
- Procedures QEP 110-1 and QEP 180-1 should be revised to specify when and in what order of priority reactor coolant, containment air, and/or effluent samples should be collected. (Section 5.4.2)
- Additional copies of the Sargent and Lundy plant shielding design study (Project 5954-00) should be provided in the Technical Support Center (TSC) and Emergency Operations Facility (EOF). (Section 5.4.2.2)
- Additional survey instruments should be provided in emergency kits to allow for damaged, contaminated, or inoperable instruments. (Section 4.2.1.1)
- High Radiation Sampling System (HRSS) counting geometries for the Service Building laboratory multi-channel analyzer system should be developed. (Section 4.1.1.9)
- 17. Calibration check sources should be added to completely stock the emergency kits. (Section 4.2.1.1)
- Backup computer disk(s) for the Post-accident Radionuclide Analytical Portable System (PARAPS)should be provided. (Section 4.1.1.9)
- A procedure should be developed for sampling high level liquid effluent samples. This procedure should indicate all appropriate precautions and limitations. (Section 5.4.2.6)
- 20. QEP 360-2 should be revised such that the titles/positions of nonessential personnel will be provided to the Security Director if site evacuation is required. (Section 5.4.3.2)
- A supply of protective clothing in each of the assembly areas should be provided. (Section 4.1.2.1)

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- 22. The most recent inventory should be provided in each emergency kit. (Section 4.2.1.1)
- 23. The licensee should acquire appropriate dedicated vehicles or implement a system to ensure that an appropriate number and type of station vehicles will be immediately available for use by field monitoring teams. (Section 4.2.6)
- 24. QEP 110-1 should be revised to indicate that the Operation Director is responsible for implementing assembly procedures. (Section 5.4.3.2)
- 25. Identical and similar procedures should be consolidated and obsolete procedures should be eliminated or updated, e.g., QRP 100-4 and 100-33 should either be updated as QEPs or eliminated. (Section 5.4.3.1)
- 26. Procedure QEP 330-4 should be deleted or revised to include the correct dose factors that are in procedure ED-16. (Section 5.4.2)
- The Radiation Management Corporation (RMC) manual should be referenced in QEP 370-1. (Section 5.4.3.5)
- 28. A copy of QEP 370-1 should be provided in the first aid/decontamination facility. (Section 5.4.3.5)
- 29. Inoperative telephone jacks in the interim EOF for use by media personnel should be repaired. (Section 4.1.4)

## APPENDIX C

### EMERGENCY PREPAREDNESS EVALUATION REPORT

The following is a list of deficiencies identified in the Quad-Cities Emergency Plan Site Specific Annex. These deficiencies are categorized as per the planning standards of 10 CFR 50.47(b). These deficiencies as well as those listed in Appendix A must be corrected in accordance with the provisions of 10 CFR 50.54(s)(2):

## Planning Standard 50.47(b)(2) (Onsite Emergency Organization) (254/82-02-11; 265/82-02-11)

- . The Plan does not adequately indicate which responsibilities of the Station Director may not be delegated (such as the protective action recommendations to offsite authorities and the authorization to receive emergency exposures in excess of 10 CFR 20.101 limits).
- The GSEP does not adequately describe shift augmentation as per the regulatory position of Criterion II.B.5 of NUREG-0654, Revision 1. Enclosure 9 of CECo's December 31, 1980, submittal indicates the current capability of the Quad-Cities Station to provide emergency support within 30 and 45 minutes. Specifically, no senior Health Physics expertise will be available within 30 minutes; however, three Rad/Chem management personnel will be available within 45 minutes. The Quad-Cities Annex does not include this 30 and 45 minute shift augmentation capability. The Annex does not clearly indicate what kind of duty officer system is being used to ensure that this augmentation capability can be met. Further, the Plan does not describe the administrative means (e.g., studies and/or drills) implemented to ensure that the design objectives of shift augmentation are met as described in Criterion II.B.5 of NUREG-0654, Revision 1.

## Planning Standard 50.47(b)(4) (Emergency Classification System) (254/82-02-12; 265/82-02-12)

. The Quad-Cities Annex does not adequately provide Emergency Action Levels (EALs) as per Appendix 1 of NUREG-0654, Revision 1, in the following areas:

## UNUSUAL EVENT

- (a) Radiological effluent readings (or alarms) of the effluent radiation monitoring system are not included to indicate effluents greater than Technical Specification limits.
- (b) Condition 14 should include the primary system leak rate value, e.g., GPM, that corresponds to a rate greater than Technical Specification limits as an Unusual Event.

- (c) Fuel damage indications (Condition 16) are not provided in the Annex. High offgas activity at the air ejector must be included (greater than 0.5 Ci/sec or an increase of 0.1 Ci/sec within a 30 minute time period). If the Technical Specification trip setting is to be used, this value must be less than the above and the value specified in the Annex.
- (d) Condition 16 does not specify that high coolant activity exceeding the Technical Specification limit for an iodine spike is an Unusual Event. This value (in uCi/ml) must also be specified in the Annex.
- (e) Condition 10 does not adequately address AC power EALs. The loss of all offsite power or loss of all diesel generators is an Unusual Event, not an Alert. The loss of all offsite power and loss of all diesel generators is an Alert, but if this condition exists for more than 15 minutes, it is a Site Area Emergency.
- (f) The Annex does not address a significant loss of assessment or communication capability for equipment other than that requiring plant shutdown (e.g., plant computer, Safety Parameter Display System, all meteorological instrumentation).

These are all Unusual Events.

(g) The Annex is vague in defining any earthquake felt inplant or detected on station seismic instrumentation as an Unusual Event. This wording is clearer than the wording currently used in the plan (e.g., earthquake has occurred or is being experienced and equipment damage may or may not have occurred as indicated by visual inspection).

#### ALERT

- (a) Condition 16 does not address high offgas activity at the air ejector monitor (greater than 5 Ci/sec; corresponding to 16 isotopes decayed 30 minutes) as an Alert.
- (b) The Annex does not address the loss of most or all annunciators as an Alert.
- (c) The Annex does not provide Area Radiation Monitor (ARM) readings which indicate a severe degradation in the control of radioactive materials (e.g., increases by a factor of 1,000 in a direct ARM reading within the facility).
- (d) The Annex does not address turbine failure with casing penetration as an Alert.

- (e) Condition 5 is inadequate. Any fire potentially affecting safety systems is an Alert, regardless of whether offsite assistance is
- (f) Radiological effluent readings are not included to indicate effluents greater than ten (10) times Technical Specification limits or equivalent to 1 mR dose if averaged over a two hour period. These readings must be indicated in the Annex.

required or equipment is operated in a degraded mode.

- (g) EALs for anticipated evacuation of the Control Room have not been included in the Plan (e.g., radiation level, toxic gas concentrations approaching hazardous levels, and fires). These should also be included for the Site Area Emergency (see Condition 2).
- (h) Condition 20 does not address other plant conditions that warrant precautionary activation of the Technical Support Center (TSC) and placing the nearsite Emergency Operations Facility (EOF) and other key emergency personnel on standby.

#### SITE AREA EMERGENCY

- (a) Condition 20 does not address other plant conditions that warrant activation of emergency centers and monitoring teams or a precautionary notification to the public near the site as a Site Area Emergency.
- (b) Condition 9 does not address entry of uncontrolled flammable gases for the Unusual Event, Alert, and Site Area Emergency. These would be the same EALs as for toxic gases.
- (c) Toxic gas concentrations (EALs) which are life threatening have not been indicated in the Annex. This should be done for an Unusual Event and Alert as well as the Site Area Emergency.
- (d) The Annex does not address the loss of most or all annunciators and a plant transient initiated or in progress as a Site Area Emergency.
- (e) The Annex does not specify that a transient requiring operation of shutdown systems with failure to scram is a Site Area Emergency (i.e., continued power generation but no core damage immediately evident).

## GENERAL EMERGENCY

 (a) EALs have not been calculated for those BWR sequences which could lead to a core melt and likely failure of containment. (See page 1-18 of Appendix 1 in NUREG-0654, Revision 1)

- (b) Loss of two out of three fission product barriers with a potential loss of a third barrier is not adequately addressed. The Annex is too conservative by classifying a General Emergency using only the high range containment radiation monitor. This must be changed to indicate loss of two out of three fission product barriers with a potential loss of containment. Therefore, high radiation level in containment and (not or) indication of potential loss of containment should be used to classify this event.
- EAL Conditions 1, 3, 4, and 5 are too conservative for a Site Area Emergency. These EALs should state "equipment described in the Technical Specifications is degraded such that an immediate shutdown is required" (you do not always automatically escalate from an Alert to a Site Area Emergency).

# Planning Standard 50.47(b)(5) (Notification Methods and Procedures) (254/82-02-13; 265/82-02-13)

The Annex does not describe the administrative or physical means and time required for notifying and providing prompt instructions to the public. A description of the prompt notification system for the ten mile EPZ similar to CECo's April 27, 1981, submittal for LaSalle must be provided for Quad-Cities. This must also be included in the Annex.

## Planning Standard 50.47(b)(8) (Emergency Facilities and Equipment) (254/82-02-14; 265/82-02-14)

- . When commitments are fully implemented as stated in the Plan, then the Plan must be revised to reflect these changes, i.e., installation of post-accident monitoring and sampling, process monitors, TSC and EOF as built diagrams, etc.
- The Plan does not provide for timely activation and staffing of the EOF. Specifically, no mention is made of how the EOF will become functional within one hour of the decision to activate as is specified in Criterion 4.3 of NUREG-0696 and Criterion II.B.5 of NUREG-0654, Revision 1.
- . The Plan makes no reference to the existence of equipment designed to measure hydrological and seismic parameters from offsite sources or hydrological parameters from onsite sources.

## Planning Standard 50.47(b)(10) (Protective Response) (254/82-02-15; 265/82-02-15)

. The Plan does not specify the means, time required, or assembly area for individuals who may be in the owner-controlled area but outside the protected area (such as the Visitors Center).

Planning Standard 50.47(b)(14) (Exercises and Drills) (254/82-02-16; 265/82-02-16)

The GSEP does not address the requirement to test communications with the NRC Headquarters and Region III Operations Centers from the TSC, EOF, and Control Room on a monthly basis. This is required by 10 CFR 50, Appendix E, Section IV.E.9.d.

## Appendix D

## OPEN ITEMS

The following is a list of Open Items identified in the area of Emergency Preparedness which must be re-examined and completed:

- Installation of all needed plant operating records, as-built drawings, supplies, and the Safety Parameter Display System (SPDS) must be completed in the permanent TSC to conform to NUREG-0696. (Section 4.1.1.2) (254/82-02-17; 265/82-02-17).
- Completion of the permanent Emergency Operations Facility (EOF) must be accomplished in accordance with NUREG-0696. (Section 4.1.1.4) (254/82-02-18; 265/82-02-18).
- Testing, development of procedures, and training on sampling and analysis using the Sentry High Radiation Sampling System (HRSS) must be completed by April 1982. (Sections 4.1.1.5, 4.1.1.6, 5.4.2.3, 5.4.2.4, and 5.4.2.7) (254/82-02-19; 265/82-02-19).
- 4. Installation, testing, and development of procedures covering sampling and analysis using the Special Particulate Iodine and Noble Gas (SPING) and Victoreen post-accident stack effluent sampling systems must be completed. (Sections 4.1.1.7, 5.4.2.5, and 5.4.2.7) (254/82-02-20; 265/82-01-20).
- Installation of the Eberline SAM-2 in the environs emergency kits for monitoring radioiodine concentrations in the field as low as 1 E-07 uCi/cc must be completed. (Section 4.2.1.1) (254/82-02-21; 265/82-02-21).
- Stocking of emergency kits in the TSC and EOF must be completed. (Section 4.2.1.1) (254/82-02-22; 265/82-02-22).
- 7. Backup power must be provided to the Emergency Notifications System (ENS) from the permanent EOF, and a Health Physics Network (HPN) phone must be installed in the permanent EOF and TSC. (Section 4.2.3) (254/82-02-23; 265/82-02-23).
- Beficiencies identified during the initial test of the public notification system must be corrected by June 1, 1982. (Section 6.2.2) (254/82-02-24; 265/82-02-24)