April 11, 1991

Docket Nos. STN 50-456
and STN 50-457

Mr. Thomas J. Kovach
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Dear Mr. Kovach:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NOS. 74136 AND 74137)

The Commission has issued the enclosed Amendment No. 28 to Facility Operating License No. NPF-72 and Amendment No. 28 to Facility Operating License No. NPF-77 for the Braidwood Station, Unit Nos. 1 and 2, respectively. The amendments are in response to your application dated July 31, 1989, as supplemented on August 27, 1990.

These amendments request changes to the Technical Specifications to provide a new location for the free field seismic monitor for the time history accelerograph.

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original Signed By:

Robert M. Pulsifer, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 28 to NPF-72
2. Amendment No. 28 to NPF-77
3. Safety Evaluation

cc w/enclosures:
See next page

LA:PDIII-2	PM:PDIII-2	PD/PDIII-2	OGC-WF1	C:ESGB
CMoore	RPulsifer:dr	RBarrett		GBagchi
3/1 /91	3 /13 /91	3 /18 /91	4 /1 /91	3/28/91

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[AMD 74136/37]

CP-1

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 28
License No. NPF-72

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated July 31, 1989, as supplemented August 27, 1990, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-72 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A as revised through Amendment No. 28 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard J. Barrett, Director
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 11, 1991

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

COMMONWEALTH EDISON COMPANY

DOCKET NO. STN 50-457

BRAIDWOOD STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 28
License No. NPF-77

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated July 31, 1989, as supplemented August 27, 1990, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-77 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A as revised through Amendment No. 28 and the Environmental Protection Plan contained in Appendix B, both of which were attached to License No. NPF-72, dated July 2, 1987, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date if its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard J. Barrett, Director
Project Directorate III-2
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 11, 1991

ATTACHMENT TO LICENSE AMENDMENT NOS. 28 AND 28

FACILITY OPERATING LICENSE NOS. NPF-72 AND NPF-77

DOCKET NOS. STN 50-456 AND STN 50-457

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove Pages	Insert Pages
3/4 3-45	3/4 3-45
* 3/4 3-46	* 3/4 3-46
*B 3/4 3-3	*B 3/4 3-3
B 3/4 3-4	B 3/4 3-4

* Overleaf pages provided for convenience

TABLE 3.3-7

SEISMIC MONITORING INSTRUMENTATION

INSTRUMENTS AND SENSOR LOCATIONS	MEASUREMENT RANGE	MINIMUM INSTRUMENTS OPERABLE
1. Time - History Accelerographs		
a. Aux. Elect. Rm, OPA02J	N.A.	1
2. Triaxial Peak Accelerographs		
a. Cont./Reactor Eq. Accumulators	-2 g to +2 g	1
b. Cont./Reactor piping	-2 g to +2 g	1
c. Aux. Bldg./Cat. I piping	-2 g to +2 g	1
3. Response-Spectrum Analyzer		
Aux Elect Rm, OPA02J	None	1
4. Triaxial Acceleration Sensors		
a. Cont./10W - 377'	-2 g to +2 g	1
b. Cont/10W - 502'	-2 g to +2 g	1
c. Cont./10X - 426'	-2 g to +2 g	1
d. Free Field/38 + 01S, 34 + 15E	-2 g to +2 g	1
e. Aux. Bldg./18N - 426'	-2 g to +2 g	1
f. Aux. Bldg./18L - 338'	-2 g to +2 g	1

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Engineered Safety Features Actuation System Interlocks

The Engineered Safety Features Actuation System interlocks perform the following functions:

P-4 Reactor tripped - Actuates Turbine trip, closes main feedwater valves on T_{avg} below Setpoint, prevents the opening of the main feedwater valves which were closed by a Safety Injection or High Steam Generator Water Level signal, allows Safety Injection block so that components can be reset or tripped.

Reactor not tripped - prevents manual block of Safety Injection.

P-11 On increasing pressure, P-11 automatically reinstates Safety Injection actuation on low pressurizer pressure and low steamline pressure and automatically blocks steamline isolation on negative steamline pressure rate. On decreasing pressure, P-11 allows the manual block of Safety Injection low pressurizer pressure and low steamline pressure and allows steamline isolation on negative steamline pressure rate to become active upon manual block of low steamline pressure SI.

P-12 On increasing reactor coolant loop temperature, P-12 automatically provides an arming signal to the Steam Dump System. On decreasing reactor coolant loop temperature, P-12 automatically removes the arming signal from the Steam Dump System.

P-14 An increasing steam generator water level, P-14 automatically trips all feedwater isolation valves and inhibits feedwater control valve modulation.

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING FOR PLANT OPERATIONS

The OPERABILITY of the radiation monitoring instrumentation for plant operations ensures that: (1) the associated action will be initiated when the radiation level monitored by each channel reaches its Setpoint and (2) sufficient redundancy is maintained to permit a channel to be out-of-service for testing or maintenance. The radiation monitors for plant operations senses radiation levels in selected plant systems and locations and determines whether or not predetermined limits are being exceeded. If they are, the system sends actuation signals to initiate alarms and automatic actuation of Emergency Exhaust or Ventilation Systems. The radiation monitor Setpoints given in the requirements are assumed to be values established above normal background radiation levels for the particular area. Radiation monitors ORE-AR055 and 56 serve a dual purpose for plant operations as criticality and fuel handling accident sensors. Although these monitors are designed primarily to detect fuel handling accident releases, they are capable of detecting an inadvertent criticality incident. The Setpoint given in the requirement is established for the fuel handling building isolation function but is also adequate for an inadvertent criticality.

3/4.3.3.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve.

For the purpose of measuring $F_Q(Z)$ or $F^N_{\Delta H}$ a full incore flux map is used. Quarter-core flux maps, as defined in WCAP-8648, June 1976, may be used in recalibration of the Excore Neutron Flux Detection System, and full incore flux maps or symmetric incore thimbles may be used for monitoring the QUADRANT POWER TILT RATIO when one Power Range channel is inoperable.

3/4.3.3.3 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility to determine if plant shutdown is required pursuant to Appendix A of 10 CFR Part 100.

The instrumentation consists of one time-history response spectrum analyzer, a playback unit, three peak recording accelerometers, and six triaxial accelerometers. The above-mentioned equipment, excluding the sensors, is located in the Auxiliary Electrical Room. The remaining sensors are located as follows: three in containment, two in the Auxiliary Building, and one at the free field location 38 + 01S, 34 + 15E. The peak recording accelerometers are passive devices which have no interplay on the rest of the system and are located on reactor equipment, reactor piping, and outside containment on the Category I piping.

The triaxial accelerometer is based on three orthogonal force-balanced servo-accelerometers which generate a voltage signal upon stimulation. The voltage signals are transmitted to the time-history recorder in the Auxiliary Electrical Room, digitized, and recorded on magnetic tape.

The time-history recorder is the master control unit for all control timing signals and system data interface. It also contains the system triggers used to actuate the system. The master control unit continually monitors two of the sensor inputs, which are processed through the trigger circuits for comparison to the system actuation level. The time-history recorder also has the ability to record both pre- and post-seismic event data. The other key component in the system is the response spectrum analyzer. This unit determines the variation in the maximum response of a single-degree-of-freedom system system versus its natural frequency of vibration when either of two designated triaxial accelerometers is subjected to a time-history motion of the accelerometer.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 28 TO FACILITY OPERATING LICENSE NO. NPF-72

AND AMENDMENT NO. 28 TO FACILITY OPERATING LICENSE NO. NPF-77

COMMONWEALTH EDISON COMPANY

BRAIDWOOD STATION, UNIT NOS. 1 AND 2

DOCKET NOS. STN 50-456 AND STN 50-457

1.0 INTRODUCTION

Relocation of the free field seismic monitor is necessary due to the construction of a training building in the area that includes the monitor. The purpose of this seismic instrumentation is to provide the capability to promptly determine the magnitude of a seismic event and to evaluate the response of features important to safety.

2.0 EVALUATION

The NRC staff has reviewed the requested change to Technical Specification 3.3.3.3 to provide a new location for the free field accelerometer (seismic monitor). The staff considers the new location of the free field unit to be at a proper distance from any major structure and founded on proper material.

(a) The underlying soil profile of the new location of the "free field" accelerometer (38+01 S, 34+15 E) is essentially the same as the profile of the previous location (41+00 S, 39+00 E), i.e. The in-situ material is free of any man-made fill.

(b) The active seismic monitoring system at Braidwood consists of a Terra Technology system which performs a dual role of providing both accelerograms (earthquake time-histories) and response spectrum records from a set of accelerometers. At Braidwood there are a total of six accelerometers (seismic monitors) with locations as shown on page B 3/4 3-4 of the Braidwood Technical Specifications.

Four of these accelerometers are connected to a central control panel (DCA-300) which includes magnetic tape cassette recorders. A fifth accelerometer (Auxiliary Building, elevation 426) is wired directly into

the Response Spectrum Analyzer (RSA-50). This latter configuration allows for a direct response spectrum read out of an event. A sixth accelerometer (Auxiliary Building, elevation 338') is part of a self contained unit (DCA 333) with its own cassette recorder.

The NRC staff finds the relocation of the free field unit acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (56 FR 6869). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: R. Kenneall
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R. Pulsifer

Date: April 11, 1991