

JANUARY 30 1979

Distribution

- ✓ Docket
- ORB #3
- Local PDR
- NRC PDR
- NRR Reading
- VStello
- BGrimes
- Tippolito
- RBevan
- SSheppard
- Attorney, OELD
- OI&E (5)
- BJones (4)
- BScharf (10)
- STSG
- ACRS (16)

- OPA (CMiles)
- DRoss
- TERA
- JRBuchanan
- HDenton
- RDiggs

Docket No. 50-254

Mr. Cordell Reed  
 Assistant Vice President  
 Commonwealth Edison Company  
 P. O. Box 767  
 Chicago, Illinois 60690

Dear Mr. Reed:

The Commission has issued the enclosed Amendment No. 49 to Facility Operating License No. DPR-29 for the Quad Cities Nuclear Power Station Unit No. 1, in response to your telecopied request of January 14, 1979 as modified by telephone discussions with your staff on that date, and confirmed by your application dated January 15, 1979. The amendment was issued orally by telephone communication on January 14, 1979.

The amendment revises the Technical Specifications to extend the period required to establish an inerted atmosphere in the containment beyond 24 hours. The extension was from 10 P.M. January 14, 1979 to a time no later than midnight January 21, 1979. During this time, operation of Quad Cities Unit No. 1 in the deinerted condition was permitted provided:

- (1) The need for the generating capability of the Unit is required to meet load requirements of the system, and
- (2) Nitrogen is not available at the Station to inert Unit No. 1 containment.

We understand that transport of nitrogen to the site will be attempted on a best-effort basis. We also understand that the operating staff will be alerted to the measures to be followed after a LOCA to provide control of hydrogen concentration.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Original Signed by  
 T. A. Ippolito

\*SEE PREVIOUS YELLOW FOR  
 CONCURRENCES

Thomas A. Ippolito, Chief  
 Operating Reactors Branch #3  
 Division of Operating Reactors

*[Handwritten Signature]*  
 790215 0119

OFFICE	Enclosures and ccs.	ORB #3	ORB #3	OELD	ORB #3
SURNAME	See next page	*SSheppard	*RBevan:mhf	*Goddard	Tippolito
DATE		1/18/79	1/19/79	1/26/79	1/29/79

Docket No. 50-254

Mr. Cordell Reed  
Assistant Vice President  
Commonwealth Edison Company  
P. O. Box 767  
Chicago, Illinois 60690

Dear Mr. Reed:

Distribution

Docket	OPA (CMiles)
ORB #3	DRoss
Local PDR	TERA
NRC PDR	JRBuchanan
NRR Reading	HDenton
VStello	RDiggs
BGrimes	
Tippolito	
RBevan	
SSheppard	
Attorney, OELD	
OI&E (5)	
BJones (4)	
BScharf (10)	
STSG	
ACTS (16)	

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-29 for the Quad Cities Nuclear Power Station Unit No. 1, in response to your telecopied request of January 14, 1979 as modified by telephone discussions with your staff on that date, and confirmed by your application dated January 15, 1979.

The amendment revises the Technical Specifications to extend the period required to establish an inerted atmosphere in the containment beyond 24 hours. The extension is from 10 P.M. January 14, 1979 to a time no later than midnight January 21, 1979. During this time, operation of Quad Cities Unit No. 1 in the deinerted condition is permitted provided:

- (1) The need for the generating capability of the Unit is required to meet load requirements of the system, and
- (2) Nitrogen is not available at the Station to inert Unit No. 1 containment.

We understand that transport of nitrogen to the site will be attempted on a best-effort basis. We also understand that the operating staff will be alerted to the measures to be followed after a LOCA to provide control of hydrogen concentration.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Thomas A. Ippolito, Chief  
Operating Reactors Branch #3  
Division of Operating Reactors

Enclosures and pcs.

OFFICE	See next page	ORB #3	ORB #3	OELD	ORB #3
SURNAME		SSheppard	RBevan:mjf	Tippolito	Tippolito
DATE		1/18/79	1/19/79	1/26/79	1/ /79

Mr. Cordell Reed

- 2 -

January 30, 1979

Enclosures:

1. Amendment No. 49 to DPR-29
2. Safety Evaluation
3. Notice

cc w/enclosures:

Mr. D. R. Stichnoth  
President  
Iowa-Illinois Gas and  
Electric Company  
206 East Second Avenue  
Davenport, Iowa 52801

Mr. John W. Rowe  
Isham, Lincoln & Beale  
Counselors at Law  
One First National Plaza, 42nd Floor  
Chicago, Illinois 60603

Mr. Nick Kalivianakas  
Plant Superintendent  
Quad-Cities Nuclear Power Station  
22710 - 206th Avenue - North  
Cordova, Illinois 61242

Anthony Z. Roisman  
Natural Resources Defense Council  
917 15th Street, N. W.  
Washington, D. C. 20005

Moline Public Library  
504 - 17th Street  
Moline, Illinois 61265

Illinois Department of Public Health  
ATTN: Chief, Division of Nuclear  
Safety  
535 West Jefferson  
Springfield, Illinois 62761

Mr. Marcel DeJaegher, Chairman  
Rock Island County Board  
of Supervisors  
Rock Island County Court House  
Rock Island, Illinois 61201

U. S. Environmental Protection Agency  
Federal Activities Branch  
Region V Office  
ATTN: EIS COORDINATOR  
230 South Dearborn Street  
Chicago, Illinois 60604

Susan N. Sekuler  
Assistant Attorney General  
Environmental Control Division  
188 W. Randolph Street  
Suite 2315  
Chicago, Illinois 60601

Director, Technical Assessment Division  
Office of Radiation Programs (AW 459)  
US EPA  
Crystal Mall #2  
Arlington, Virginia 20460



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

COMMONWEALTH EDISON COMPANY  
AND  
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-254

QUAD CITIES STATION UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 49  
License No. DPR-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Commonwealth Edison Company (the licensee) dated January 14, 1979, 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 3.B of Facility Operating License No. DPR-29 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 49, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

7902150126

3. This license amendment is effective January 14, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #3  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: January 30, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 49  
FACILITY OPERATING LICENSE NO. DPR-29  
DOCKET NO. 50-254

Replace pages 3.7/4.7-6a and 3.7/4.7-7 of the Appendix "A" Technical Specifications with the enclosed pages.

~~7902150132~~

QUAD-CITIES  
DPR-29

except as specified in Specification 3.7.A.5.b.

b. Within the 24-hour period subsequent to placing the reactor in the Run mode following a shutdown, the containment atmosphere oxygen concentration shall be reduced to less than 5% by weight, and maintained in this condition. Deinerting may commence 24 hours prior to a shutdown.

c. For the period from 10 P.M. January 14, 1979 to midnight January 21, 1979, the oxygen concentration limit in paragraph 3.7.A.5.b shall not apply unless adequate supplies of nitrogen or system load conditions sooner allow the inerting of the containment or shutdown of the reactor.

6. Containment Systems

Drywell-Suppression Chamber  
Differential Pressure

a. Differential pressure between the drywell and suppression chamber shall be maintained at equal to or greater than 1.20 psid except as specified in (1), (2), and (3) below:

(1) This differential shall be established within the 24 hour period subsequent to placing the reactor mode switch into the RUN mode during a startup and may be relaxed 24 hours prior to reactor shutdown when the provisions of 3.7.A.5(b) apply.

6. Containment Systems

Drywell-Suppression Chamber  
Differential Pressure

a. The pressure differential between the drywell and suppression chamber shall be recorded at least once each shift.

QUAD-CITIES  
DPR-29

- (2) This differential may be decreased to less than 1.20 psid for a maximum of 4 hours during required operability testing of the HPCI system pump, the RCIC system pump, the drywell-pressure suppression chamber vacuum breakers, and reactor pressure relief valves.
- (3) If the Specifications of 3.7.A cannot be met, and the differential pressure cannot be restored within the subsequent six (6) hour period, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition in the following 24 hours.

B. Standby Gas Treatment System

1. Two separate and independent standby gas treatment system circuits shall be operable at all times when secondary containment integrity is required, except as specified in sections 3.7.B.1.(a) and (b).
  - a. After one of the standby gas treatment system circuits is made or found to be inoperable for any reason, reactor operation and fuel handling is permissible only during the succeeding seven days, provided that all active components in the other standby gas treatment system shall be demonstrated to be operable within 2 hours and daily thereafter. Within 36 hours following the 7 days, the reactor shall be placed in a condition for which the standby gas treatment system is not required in accordance with Specification 3.7.C.1.(a) through (d).
  - b. If both standby gas treatment system circuits are not operable, within 36 hours the reactor shall be placed in a condition for which the standby gas treatment system is not required in accordance with Specification 3.7.C.1.(a) through (d).

B. Standby Gas Treatment System

1. At least once per month, initiate from the control room 4000 cfm (+ 10%) flow through both circuits of the standby gas treatment system for at least 10 hours with the circuit heaters operating at rated power.
  - a. Within 2 hours from the time that one standby gas treatment system circuit is made or found to be inoperable for any reason and daily thereafter for the next succeeding seven days, initiate from the control room 4000 cfm (+ 10%) flow through the operable circuit of the standby gas treatment system for at least 10 hours with the circuit heaters operating.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

AMENDMENT NO. 49 TO LICENSE NO. DPR-29

QUAD CITIES NUCLEAR POWER STATION UNIT NO. 1

COMMONWEALTH EDISON COMPANY  
AND  
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

DOCKET NO. 50-254

Introduction

By teletype on January 14, 1979, the Commonwealth Edison Company (CECo) requested an amendment to the operating license of Quad Cities Unit No. 1 that would extend the period required to establish an inerted atmosphere in the containment beyond 24 hours. The extension is requested from 10 P.M. January 14, 1979 to a time no later than midnight January 21, 1979.

Discussion

Quad Cities Unit 1 containment was deinerted at 8:15 A.M. on January 13, 1979 in preparation for a normal shutdown for refueling. Later in the morning of January 13, a new weather forecast was received for Monday, January 15 which indicated a probable need for the generating capacity of Quad Cities Unit 1 if the system load demands were to be met on January 15. Later in the day, an additional 450 MW capacity was lost to the system when another station was forced out of service due to malfunction. The conditions resulted in a projected 785 MW deficiency in meeting the January 15 load without Quad Cities Unit No. 1 with no reserve margin. Efforts were made at that time to purchase emergency power. By the evening of January 13, commitments could be had for only 550 MW from neighboring utilities, again with no reserve margin. The situation then became one of urgent need to defer the Quad Cities outage and have the Unit in operation for the Monday January 15, load.

There is not presently available onsite sufficient nitrogen to reinert the containment and, because of severe weather conditions, there is little chance of obtaining the nitrogen by Monday, January 15. In order to meet the load requirements for January 15, 1979 and possible succeeding days, CECo requested a change in their Technical Specifications that will allow them to operate, on a provisional basis, with the containment deinerted, for up to about a week.

Evaluation

During normal plant operation, the primary containment of Quad Cities Unit No. 1 is inerted (i.e., the oxygen concentration is maintained at less

790215 d32

than 5% by weight) as part of the measures to control potential combustible gas concentrations within the primary containment following a postulated loss-of-coolant accident (LOCA). Specifically, the requirement for inerting resulted from the assumption of a reaction of 5% of the fuel zircaloy cladding with the primary system coolant as specified in Safety Guide 7 (presently referred to as Regulatory Guide 1.7). This amount of "metal-water" reaction will lead to combustible gas concentrations within a very short period of time following a LOCA.

The Technical Specification requirements for Quad Cities currently allow a 24 hour period subsequent to placing the reactor in the "RUN" mode for the inerted condition to be established. This allowance is based on consideration of the low probability of a LOCA event within this limited period of time, the reduced consequences at lower power levels, and the level of difficulty associated with establishing and maintaining an inerted condition during the atmospheric transients that occur within the containment during startup.

The licensee has requested an extension of this 24 hour period to establish an inerted atmosphere within the containment. This request resulted from severe local weather conditions which have caused the licensee to defer a scheduled refueling outage for about one week. There presently is not a sufficient supply of nitrogen available at the plant site to establish and maintain an inerted containment atmosphere in both units for a period of time sufficient to obtain additional nitrogen.

In early 1975, the licensee submitted a proposed combustible gas control system design that would not require inerting. This system design was predicated on a lower metal-water reaction which was being considered as part of a proposed change to the Commission's regulations. A new rule (i.e., 10 CFR 50.44), which became effective on November 27, 1978, would allow the assumed metal-water reaction to be based on the results of the Emergency Core Cooling System analyses requirements of 10 CFR 50.46.

Although the staff has not completed its review of the proposed system design, the preliminary analyses indicate that inerting would not be required for Quad Cities under the provisions of the new rule, and that an air-dilution system would be an effective means of manually controlling combustible gas concentrations following a LOCA. Based on these analyses, we conclude that combustible gas control measures could be provided by means other than inerting.

In conjunction with the proposed change to the plant Technical Specifications, the licensee will also implement emergency procedures which direct the plant operators to take alternate actions in the event of a LOCA with the plant deinerted. In addition, because of end of cycle reactivity considerations, Unit No. 1 will be operated below about 50% of licensed power.

The alternate combustible gas control is designed to provide dilution and purging of the containment atmosphere. At the present time, this system is not operational nor are the associated atmosphere monitoring subsystems available. However, the licensee has determined that air dilution and purging can be provided by existing systems at rates equal to or greater than that specified for the proposed system. Further, the emergency procedures call for durations of dilution and purging based on the system design analyses, since the atmosphere monitoring subsystems are not operational. Based on our preliminary assessment of the proposed system design, we conclude that the licensee's emergency procedures are sufficient to assure combustible gas control following a postulated LOCA and to assure that offsite exposures are acceptable. On this basis, we conclude that this action is acceptable for the period proposed.

#### Summary

Based on the licensee's power needs, the low probability of a LOCA event within the limited period of time associated with this action, the emergency procedures instituted by the licensee, and the reduced power level of the plant, we conclude that Quad Cities Unit No. 1 can operate safely with a deinerted containment for the proposed period of about one week and still provide adequate measures for combustible gas control should a LOCA occur.

#### Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of the amendment.

#### Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: January 30, 1979

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-254COMMONWEALTH EDISON COMPANY  
ANDIOWA-ILLINOIS GAS AND ELECTRIC COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 49 to Facility Operating License No. DPR-29, issued to Commonwealth Edison Company and Iowa-Illinois Gas and Electric Company which revised Technical Specifications for operation of Quad Cities Nuclear Power Station, Unit No. 1 located in Rock Island County, Illinois. The amendment is effective January 14, 1979.

The amendment revises the Technical Specifications to extend the period required to establish an inerted atmosphere in the containment beyond 24 hours. The extension is from 10 P.M. January 14, 1979 to a time no later than midnight January 21, 1979.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of the amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of the amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4), an environmental impact statement or negative

7902150134

declaration and environmental impact appraisal need not be prepared in connection with issuance of the amendment.

For further details with respect to this action, see (1) the formal application for amendment dated January 15, 1979, (2) Amendment No. 49 to License No. DPR-29, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Moline Public Library, 504 -17th Street, Moline, Illinois 60625. A single copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 30th day of January 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #3  
Division of Operating Reactors