

SEPTEMBER 11 1978

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Docket No. 50-254

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

Gentlemen:

The Commission has issued the enclosed Amendment No. 47 to Facility Operating License No. DPR-29 for Unit No. 1 of the Quad Cities Nuclear Power Station. This amendment is in response to your request dated August 10, 1978.

This amendment authorizes operation of the reactor beyond the previously analyzed end-of-cycle scram reactivity conditions and is based upon new analyses.

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

Sincerely,

Original signed by

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

Enclosures:

- Amendment No. 47 to License No. DPR-29
- Safety Evaluation
- Notice

cc w/enclosure:
 see next page

I called licensee at 4:30 pm 9/8/78 to inform them of this action

Construct

OFFICE →	ORB#3	ORB#3	OELD	ORB#3	RSB #OC	CCP
SURNAME →	SSheppard	RBevan.acr	M. Mulkey	T. Ippolito	for P.S. Check	
DATE →	9/7/78	9/7/78	9/8/78	9/8/78	9/7/78	

cc w/enclosures:

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

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

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

Chief, Energy Systems Analyses
Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 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 UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 47
License No. DPR-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Commonwealth Edison Company (the licensee) dated August 10, 1978, 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, Facility Operating License No. DPR-29, as amended, is hereby further amended by revising in its entirety Paragraph 3.C thereof to read as follows:

C. Restrictions

Reactor power level shall be limited to maintain pressure margin to the safety valve set points during the worst case pressurization transient. The magnitude of the power limitation, if any, and the point in the cycle at which it shall be applied is specified in the Reload No. 3 licensing submittal for Quad Cities Unit No. 1 (NEDO-21489). Plant operation shall be limited to the operating plan described therein. Subsequent operation in the coastdown mode is permitted to 40% power.

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

FOR THE NUCLEAR REGULATORY COMMISSION


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

Date of Issuance: September 11, 1978



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 47 TO FACILITY OPERATING LICENSE NO. DPR-29
COMMONWEALTH EDISON COMPANY
QUAD CITIES UNIT NO. 1
DOCKET NO. 50-254

Introduction

By application dated August 10, 1978, Commonwealth Edison Company (CECo) requested authorization, with appropriate restrictions, for reactor power operation beyond the previously analyzed end-of-cycle scram reactivity conditions. Amendment No. 41 to Facility License No. DPR-29 issued May 5, 1977, authorized operation to 98% full power by coasting down and operating at this power level out to EOC-4, using 100% recirculation flow.

Discussion

Quad Cities Unit No. 1 is currently authorized to operate out to 1000 MWd/t before EOC-4 at 100% power, then reduce power to 98% by coasting down and operating at this power level out to EOC-4, coasting down to be done at 100% rated flow. Operation in this manner was analyzed to establish the effect of anticipated transients and accidents and normal operations. The turbine trip with failure of the bypass valves was determined to be the most limiting transient. The analysis showed that operation of Quad Cities No. 1 with the actual end-of-cycle scram reactivity reduction rate will maintain the safety margins previously determined for anticipated transients with scram.

CECo has provided in its submittal of June 11, 1976 (filed in Docket No. 50-265 for Quad Cities Unit No. 2 and incorporated by reference in CECo's request dated August 10, 1978, for Quad Cities Unit No. 1), a reanalysis of the limiting transient, a turbine trip without bypass, at burnup conditions beyond the point in the fuel cycle at which the reactivity reduction rate during a scram (scram reactivity) is less than that of the "end-of-cycle" curve previously provided by CECo on February 27, 1975^{1/}. This new analysis evaluated the limiting transient at reduced power levels of 90%, 80% and 70% with core average burnups of 12,593 MWd/t, 13,041 MWd/t and 13,514 MWd/t, respectively. The control rods are at their fully withdrawn position for these analyses, and new scram reactivity curves^{2/} have

^{1/} Letter J. S. Abel, CECo, to D. L. Ziemann, NRC, February 27, 1975.

^{2/} Figure 2, Quad Cities 2 EOC; All Rods Out Scram Reactivity at Rated Conditions submitted by CECo letter dated June 11, 1976.

been calculated for the three power and burnup conditions analyses. Other primary cycle dependent input parameters such as the doppler and void coefficients were recomputed for the burnup and reduced power levels used in the Quad Cities Unit No. 2 analysis and do not differ significantly for Quad Cities Unit No. 1.

Analyses performed for Dresden Unit No. 2 EOC coastdown show that the reduction in power during coastdown to 40% more than compensates for the degradation in scram reactivity insertion in determining the pressure and MCPR limits of the limiting transient. The pressure margin and MCPR are not less than the values determined at the nominal EOC condition. The Dresden Unit No. 2 EOC 5 coastdown analysis verifies these results to 40% power.

General Electric (GE) has verified the applicability of the Dresden Unit No. 2 EOC 5 analysis to Quad Cities Unit No. 1 Cycle 4 by letter dated August 8, 1978^{3/}. The staff has compared the core loadings for these two plants and based on similarity in core loading, fuel burnup and transient behavior agrees with the conclusions of the referenced GE letter.

Environmental Consideration

We have determined that this 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 10 CFR Section 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.

Conclusions

We have concluded that the proposed amendment to license for Quad Cities Unit No. 1 for operation beyond the end-of-cycle will maintain the safety margins previously determined for anticipated transients with scram.

We also 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: September 11, 1978

^{3/} Letter H. Zimmerman, GE to G. Grable, CECO, dated August 8, 1978.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-254

COMMONWEALTH EDISON COMPANY
AND
IOWA-ILLINOIS GAS AND ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 47 to Facility Operating License No. DPR-29, issued to Commonwealth Edison Company (acting for itself and on behalf of the Iowa-Illinois Gas and Electric Company), which revised the license for operation of the Quad Cities Nuclear Power Station Unit No. 1 (the facility) located in Rock Island County, Illinois. The amendment is effective as of its date of issuance.

The amendment authorizes operation of the reactor beyond the previously analyzed end-of-cycle scram reactivity conditions and is based upon new analyses.

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 this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this 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

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

For further details with respect to this action, see (1) the application for amendment dated August 10, 1978, (2) Amendment No. 47 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 61265. A 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 11 day of September 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



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