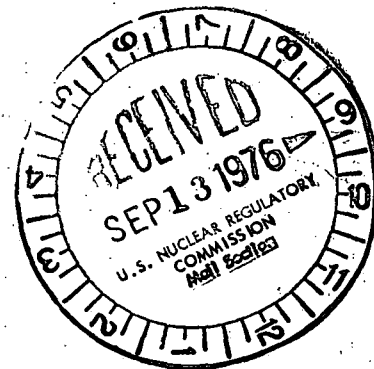




**Commonwealth Edison**  
 One First National Plaza, Chicago, Illinois  
 Address Reply to: Post Office Box 767  
 Chicago, Illinois 60690

September 2, 1976



Mr. Benard C. Rusche, Director  
 Office of Nuclear Reactor Regulation  
 U.S. Nuclear Regulatory Commission  
 Washington, D.C. 20555

Cy.



**Subject:** Dresden Station Units 2 and 3  
 Quad-Cities Station Units 1 and 2  
 Proposed Change to Technical Specifications  
 Appendix A to DPR-19, DPR-25, DPR-29 and  
 DPR-30 to Authorize Single Loop Operation  
NRC Docket Nos. 50-237/249 and 50-254/265

Dear Mr. Rusche: Regulatory File Cy.

Pursuant to 10 CFR 50.59, Commonwealth Edison proposes to amend Appendix A Technical Specifications of facility operating licenses DPR-19, 25, 29, and 30 to authorize single loop operation.

The proposed amendment is Enclosure 2 for Dresden Station and Enclosure 3 for Quad-Cities Station.

Single loop operation of these units was prohibited by the NRC until an analysis could be provided to show the single loop operation was not less conservative than two loop operation at higher power levels.

Enclosure 1 provides the analysis to support single loop operation. Significant points of the analysis are summarized below and incorporated into the proposed amendments.

Because flow decreases more rapidly during single loop operation should a loss of coolant accident (LOCA) occur, the maximum average planar linear heat generation rate (MAPLHGR) is limited to .85 of the two pump limit.

The analysis assumes the equalizer valve in the recirculation piping is shut. The amendment proposes to change the restriction on the equalizer valve position from the body of the license to the Technical Specifications.

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During single loop operation with the equalizer valve shut, a percentage of the recirculation flow actually bypasses the core and backflows through the idle jet pumps. Indicated flow is thus higher than actual flow through the core and flow biased components of the reactor protection system must be compensated for this difference. The difference is called  $\Delta W$  and is discussed in Enclosure 1. The value is not quantified in Enclosure 1, but tests conducted at Quad-Cities Station found the difference to be 3.6% if the single pump flow results were extrapolated to full drive flow parallel to the two pump characteristic (see Enclosure 5). From the data at Quad-Cities, it appears that the single loop data diverges slightly. On that basis, extrapolation to 100% drive flow yields a difference of about 7% of full drive flow. For additional conservatism, a value of 10% is assumed to be the difference between single loop and two pump flow characteristics when extrapolated to 100% flow. This value of  $\Delta W$  is specified by extrapolation because it is not possible to obtain 100% core flow with a single pump. During single loop operation, flow biased components of the reactor protection system will be compensated to account for  $\Delta W$  of 10%.

Enclosure 4 consists of answers to questions asked by the staff pertaining to Boston Edison's single loop application for the Pilgrim Units. Mr. O'Connor of your staff requested these be provided with Commonwealth Edison's initial single loop application in order to facilitate staff review. The material has been reviewed and segments obviously not applicable to Dresden and Quad-Cities units have been removed.

When the units are operated within the bounds of the analysis provided by General Electric, single loop operation will meet the requirements of 10 CFR 50 Appendix K and will not endanger the health and safety of the public. Although Commonwealth Edison would incur a economic penalty for operation under single loop conditions, it is often better to accept the derating on the unit and continue to operate until system load conditions permit an outage. In addition, single loop operation will permit maintenance on the motor generator sets without a plant shutdown. Such maintenance is now precluded without a plant shutdown under the present license restrictions.

The proposed changes have received on-site and off-site review.

Mr. Benard C. Rusche


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Three (3) signed originals and 57 copies are provided for your use.

Please address any questions to this office.

Very truly yours,



R. L. Bolger  
Assistant Vice President

SUBSCRIBED and SWORN to  
before me this 7<sup>th</sup> day  
of September, 1976.

Nancy M. Hollingsworth  
Notary Public

- Enclosure 1: 60 Copies - Dresden Station Units 2 and 3 and Quad-Cities Station Units 1 and 2, License Amendment for Single Loop Operation. General Electric Company NEDO-21093 75NED57 of October 1975.
- Enclosure 2: 60 Copies - Dresden Station Units 2 and 3 Technical Specification pages iii, 6, 7, 15, 16, 17, 42, 42A, 81B, 85A, 91a, and 99a and page 3 of license DPR-19 and page 3A of license DPR-25.
- Enclosure 3: 60 Copies - Quad-Cities Station Units 1 and 2 Technical Specification pages ii, 1.1/2.1-1, 1.1/2.1-2, Figure 2.1-1, 1.1/2.1-8, 1.1/2.1-9, 1.1/2.1-10, 1.1/2.1-11, 3.2/4.2-14, 3.5/4.5-9, 3.5/4.5-14, 3.5/4.5-15, and 3.6/4.6-13a and page 4 of licenses.
- Enclosure 4: 60 Copies - Additional Information Pertaining to Single Loop Analysis. NRC Docket Nos. 50-237/249 and 50-254/265.
- Enclosure 5: 60 Copies - Determination of  $\Delta W$  for Single Loop Operation.