Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

April 8, 1991

Dr. Thomas E. Murley, Director
Office Of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attn: Document Control Desk

Subject: Byron Station Units 1 and 2
Braidwood Station Units 1 and 2
Supplement to Application for Amendment to Facility
Operating Licenses NPF-37/66 & NPF 72/77
Appendix A, Technical Specifications
TAC # 79724/79725 and 79726/79727
NRC Docket Nos. 50-454/455 and 50-456/457

Reference:(a) January 26, 1990 letter from T.K. Schuster
to T.E. Murley

Dear Dr. Murley:

Pursuant to 10 CFR 50.90 Commonwealth Edison Company (CECo) proposed to amend Appendix A, Technical Specifications of Facility Operating Licenses NPF-37/66 and NPF-72/77 for Byron and Braidwood Stations respectively in the letter of Reference (a). The proposed amendment requested changes to the Action Statement requirements of Specification 3.1.3.1 and its associated Bases Section. In response to a request from your staff, two clarifications to the wording of Attachment 2 of Reference (a) are being provided. The first and second page of Attachment 2 have been revised and the revisions have been high-lighted with a vertical bar in the right hand margin.

The first clarification added the word "Turbine" to clarify that "Turbine Power Level" could be changed to maintain average core temperature (Tave) in accordance with its program value (Tref). Changing Turbine power level would initially and directly change Tref, but it would also ultimately change Tave. The second change to Attachment 2 was an expansion of the description of the effect of a Rod Control Urgent Failure Alarm on the control rods. This change is self explanatory and is contained on the second revised page of Attachment 2. These clarifications have no effect on the previous finding that the proposed amendment involves no significant hazards consideration.

TKS/scl:ID867:1

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Commonwealth Edison is notifying the State of Illinois of this supplement to an application for amendment by transmitting a copy of this letter and its attachment to the designated State Official.

To the best of my knowledge and belief the statements contained herein are true and correct. In some respects, these statements are not based on my personal knowledge but upon information received from other Commonwealth Edison and contractor employees. Such information has been reviewed in accordance with Company practice and I believe it to be reliable.

Please direct any questions you may have concerning this matter to this office.

Respectfully,

Thomas K. Schuster

T.K. Schuster
Nuclear Licensing Administrator

State of IL, County of Cook
Signed before me on this 8 day
of April, 1991 by _____
Notary Public Lynn M. Wlodarski

"OFFICIAL SEAL"
LYNN M. WLODARSKI
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 6/25/94

Enclosure: Attachment 2 revised pages (2)

cc: W. Kropp-Byron
S. Dupont-Braidwood
A. Hsia-NRR
R. Pulsifer-NRR
W. Shafer-RIII
Office of Nuclear Facility Safety-IDNS

TKS/scl:ID867:2

ATTACHMENT 2

DESCRIPTION AND BASES OF THE PROPOSED CHANGES

The proposed changes revise the Action Statement for Technical Specification 3.1.3.1, Moveable Control Assemblies and the associated Bases Section. The revision adds an Action Statement to address the condition when more than one full length rod is inoperable but still capable of insertion into the core upon receipt of a reactor trip signal. Under this condition, the Action Statement permits continued operation for up to 72 hours before a unit shutdown is required. The 72 hours permits time for diagnosis and repair of the inoperable but trippable rods. This time extension can potentially prevent an unnecessary transient on the plant required by a shutdown while still maintaining the safety of the unit since the reactor control and shutdown rods can perform their intended safety function of insertion into the core upon receipt of a reactor trip signal.

The purpose of the Control Rod Drive System (CRDS) is two-fold. The CRDS performs a control function which serves to insert or withdraw rod cluster control assemblies within the reactor core to control average core temperature to a program value (Tref). During a temporary loss of the ability to adjust rod height, the function of maintaining average core temperature in accordance with its program value (Tref) can be accomplished by either boron changes or by changing Turbine power level. The CRDS performs its protection or safety function, reactor trip, by placing the reactor in a subcritical condition when a safety system setting is approached with any assumed credible failure of a single active component. The protection system (reactor trip function) is designed to be independent and isolated from the rod control system. Therefore, a failure in the rod control system does not impact the ability of the protection portion of the CRDS to perform a reactor trip.

The operability of the shutdown and control rod banks are initial assumptions in all safety analyses which assume rod insertion upon reactor trip. This ensures the assumed reactivity is available for insertion. In addition, operability requires maintenance of proper bank withdrawal and overlap requirements so that correct power distribution and control rod alignment are maintained.

Technical Specification 3.1.3.1 requires all shutdown and control rods to be operable and positioned within ± 12 steps of their group step counter demand position. The moveable control assemblies Technical Specification 3.1.3.1 ensures that (1) acceptable power distribution limits are maintained, (2) the minimum shutdown margin is maintained and (3) the potential effects of rod misalignment on associated accident analyses are limited.

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DESCRIPTION AND BASES OF THE PROPOSED CHANGES

For one rod being inoperable, the Action Requirements vary significantly depending on whether the rod is immovable or untrippable or whether it is still trippable. For the rod that is immovable or untrippable the Unit must be placed in Mode 3 within 6 hours. For a rod that is inoperable but still trippable, unit operation may continue indefinitely provided the Action Requirements of maintaining rod alignment and sequence and insertion limits are met; or power and the associated trip setpoints are reduced and the shutdown margin, power distribution, and reevaluation of certain accident analyses are performed per the Action Requirements. For individual rod inoperability, the current Technical Specification acknowledges the significance between the rod being immovable or known to be untrippable and the rod just being inoperable but trippable. However, the Technical Specification does not permit the same flexibility when more than one rod is inoperable but still trippable. Action b requires that with more than one full length rod inoperable or misaligned from the group step counter demand position by more than ± 12 steps than the Unit must be placed in Mode 3 within 6 hours.

The proposed amendment request provides a distinct Action Requirement for more than one inoperable but trippable rod that is consistent with the significance of the malfunction, and the original bases of the specification. Having more than one rod inoperable due to being untrippable is more significant than having more than one rod that cannot be stepped due to an electrical malfunction, but remaining trippable. Distinguishing between these types of malfunctions will allow an appropriate time period to complete corrective action commensurate with the significance of the malfunction. Therefore, the proposed amendment allows continued operation for 72 hours with the new action protects the original bases of the Moveable Control Assemblies Specifications by requiring the remainder of the rods in the group(s) with the inoperable rods be aligned to within ± 12 steps of the inoperable rods while observing the other specifications of the section. The 72 hour interval permits a reasonable amount of time for diagnosis and repair of the inoperable rods. Thus, possibly eliminating a unit shutdown that can result in an unnecessary transient on the plant while the rods are still capable of performing their intended safety function.

In most cases when more than one rod is found to be trippable (and aligned) but inoperable, the malfunction can be traced to the Rod Control System. The typical situation that has occurred at Byron and Braidwood Stations is that when multiple rods are inoperable a Rod Control Urgent Failure alarm occurs. This alarm is indicative of an electronic/electric malfunction occurring within the logic or power supply portion of the CRDS. The inputs to the Rod Control Urgent Failure Alarm which inhibit rod motion result from electrical failure in either the Logic or Power Cabinets of the Rod Control System. Failures causing the alarm could be loose or missing cards, component failures, or control logic errors in either the Logic or Power Cabinets. The effect of the interlock associated with the alarm is to energize both the stationary and moveable grippers thereby inhibiting control rod stepping motion. The conditions that can cause this alarm do not affect the ability to trip any control rods. This may result in a situation where the control rods cannot be stepped in or out of the reactor. However, the rods remain trippable and are therefore capable of performing their safety function. Since the majority of CRDS malfunctions can be repaired without a reactor shutdown and since plant conditions are not outside any accident analysis assumptions, there is time available to locate the malfunction and restore the rods to operable status.