Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

October 26, 1990

Dr. Thomas E. Murley
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
Application for Amendment to Facility
Operating Licenses NPF-37/66 & NPF-72/77
NRC Docket Nos. 50-454/455 and 456/457

Dear Dr. Murley:

Pursuant to 10 CFR 50.90 Commonwealth Edison proposes to amend Appendix A, Technical Specifications of Facility Operating Licenses NPF-37/66 and NPF-72/77 for Byron/Braidwood Stations. The proposed amendment revises a portion of Technical Specification Tables 2.2-1 and 3.3-4, Reactor Trip System Instrumentation Trip Setpoints and Engineered Safety Features Actuation System Instrumentation Trip Setpoints respectively, to reduce the setpoint for Low-Low Steam Generator Level Reactor Trip and Auxiliary Feedwater Initiation from 40.8% to 34.8% level for the Unit 1 Model D-4 Steam Generators.

The description and bases of the proposed changes are contained in Attachment A. The revised Technical Specification Pages are contained in Attachment B.

The proposed changes have been reviewed and approved by both on-site and off-site review committees in accordance with Commonwealth Edison procedures and Technical Specifications. Commonwealth Edison has reviewed this proposed amendment in accordance with 10 CFR 50.92 (c) and has determined that no significant hazards consideration exists. This evaluation is documented in Attachment C. An applicability review of the need for an Environmental Assessment has been performed and is included in Attachment D.

The setpoint reductions for Reactor Trip and Auxiliary Feedwater Initiation will allow operation of the Unit 1 Steam Generators over a greater range during operational transients. In response to a level transient, these changes will permit greater time for an operator's manual actions to take effect and will reduce the potential for unwarranted reactor trips and Engineered Safeguards Feature actuation of Auxiliary Feedwater. For this reason Commonwealth Edison requests approval of this proposed amendment by May 1, 1991, allowing six months for NRC review.

A001
1/1

/scl:ID362:1

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

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

Very truly yours,

Terence K. Schuster

T.K. Schuster
Nuclear Licensing Administrator

Attachments: A) Description and Bases of the Proposed Changes
B) Proposed Technical Specification Changes
C) Evaluation of Significant Hazards Consideration
D) Environmental Assessment Statement Applicability Review

cc: Resident Inspector-Byron
Resident Inspector-Braidwood
T. Boyce-NRR
S.P. Sands-NRR
Regional Administrator-RIII
Office of Nuclear Facility-IDNS

/scl:ID362:2

ATTACHMENT A

DESCRIPTION AND BASES OF THE PROPOSED CHANGES

DESCRIPTION

The proposed changes would revise Technical Specifications Tables 2.2-1, Item 13a and Table 3.3-4, Item 6c. The change to Table 2.2-1, Item 13a would reduce the values of Total Allowance, Trip Setpoint and Allowable Value by 6% of Span for the Steam Generator Water Level Low-Low Reactor Trip for the Unit 1 Model D-4 Steam Generators. The change to Table 3.3-4, Item 6c would reduce the values of Total Allowance, Trip Setpoint and Allowable Value by 6% for the Steam Generator Water Level Low-Low Start for the Unit 1 Motor and Diesel Driven Auxiliary Feedwater Pumps. The revised values are indicated on the marked-up Technical Specification pages included in Attachment B.

BASES OF THE PROPOSED CHANGES

The steam generator water level instrumentation is a safety grade system designed to actuate a reactor trip due to a loss of heat sink. The basic function of the reactor protection circuits associated with Low-Low Steam Generator Water Level is to preserve the Steam Generator heat sink for removal of long term residual heat. Should a complete loss of feedwater occur, the reactor would be tripped on a Low-Low Steam Generator Water Level. In addition, an auto-start signal is provided at the same setpoint to two redundant auxiliary feedwater pumps to supply feedwater in order to maintain residual heat removal capability after the trip. The reactor trip acts prior to Steam Generator tube uncovery. This reduces the required auxiliary feedwater capacity, increases the time interval before the auxiliary feedwater pumps are required, and minimizes the thermal transient on the Steam Generator and Reactor Coolant System. The auto-start of the auxiliary feedwater pumps at the same setpoint as the trip ensures a secondary heat sink is continually available after a trip coincident with a loss of normal feedwater.

The reactor trip function generated at the Low-Low Steam Generator Water Level trip setpoint is assumed to provide primary protection for the loss of Normal Feedwater/Loss of All Non-Emergency AC Power events, Feedline Break event, Loss of Load/Turbine Trip event and certain cases of the superheated Steam Line Break Mass and Energy Release Calculations outside containment. All of these analyses assume a "Safety Analysis Limit" value for the reactor trip setpoint lower (more conservative) than the nominal Technical Specification trip setpoint value because it must account for all applicable errors and uncertainties associated with the Low-Low Steam Generator Level trip function. The "Safety Analysis Limit" value assumed for these accidents for the Low-Low Steam Generator Water Level Reactor Trip/Auxiliary Feedwater initiation was 13.7% of span and remains at that value for the proposed changes. The margin between the original Technical Specification setpoint for Trip/Auxiliary Feedwater Initiation (40.8%) and the "Safety Analysis Limit" value of 13.7% contained an excess margin of 7.8% of span. This excess margin was in excess of that required to account for instrument error and uncertainties identified in the statistical setpoint study. This change will permit reduction of the Unit 1 Low-Low Steam Generator Water Level Reactor Trip/Auxiliary Feedwater Initiation Setpoint from 40.8% to 34.8%, reducing the excess margin from 7.8% of span to 1.8% of span. However, as stated previously, the margin of safety is unaffected since the new Reactor Trip/Auxiliary Feedwater Initiation setpoint is bounded by the original "Safety Analyses Limit" value used in the applicable safety analyses.

ATTACHMENT A

DESCRIPTION AND BASES OF THE PROPOSED CHANGES
(continued)

An evaluation of the impact these changes had on the LOCA and non-LOCA Safety Analyses has been performed, including Steam Generator Tube Rupture. We conclude that all regulatory and design limits will continue to be met after implementation of the proposed change.

The changes were also evaluated for their indirect effect on the Anticipated Transient Without Scram (ATWS) Mitigation System Setpoints. This system has been installed on Byron Unit 1 and will be installed on Braidwood Unit 1 during its next refueling outage. The Byron/Braidwood ATWS mitigation system will automatically trip the main turbine and initiate Auxiliary Feedwater when level falls below a prescribed setpoint in 3/4 Steam Generators. The steam generator level setpoint for ATWS initiation is specified as 3% of narrow range span below the nominal Low-Low Steam Generator Level Reactor Trip/Auxiliary Feedwater Initiation Setpoint. Therefore, when the Reactor Trip Setpoint is changed the ATWS Setpoint must be changed accordingly. The guidance provided by Westinghouse WCAP-11436 "AMSAC Generic Design Package" for selection of the ATWS Setpoint places restrictions on setpoint selection. The first is that it occur below the reactor protection system Low-Low Steam Generator level trip setpoint. The second is that the reduced ATWS setpoint be no lower relative to the reactor trip setpoint, than the environmental and reference leg heatup allowances. For Byron and Braidwood stations the additive values of these two allowances is 12.6% of span. The third restriction is that the setpoint be no lower than 5% level. It can be seen that the first two restrictions are met by virtue of the way the ATWS setpoint is specified. The third restriction, a minimum value of 5% level, is easily met by the new setpoint value of 34.8%-3.0%=31.8%. Therefore, the ATWS mitigation system initiation assumptions are still valid.

The setpoint reductions for Reactor Trip and Auxiliary Feedwater Initiation will allow operation of the Unit 1 Model D-4 Steam Generators over a greater range during operational transients. In response to a level transient, these changes will permit greater time for an operator's manual actions to take effect and will reduce the potential for unwarranted reactor trips and ESF actuation of Auxiliary Feedwater.