



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

August 5, 1992

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Byron Station Units 1 and 2
Braidwood Station units 1 and 2
Application for Amendment to Facility
Operating License NPF-37, NPF-66, NPF-72 and NPF-77
NRC Docket Nos. 50-454, 455, 456 and 457

Dear Dr. Murley:

Pursuant to 10 CFR 50.90, Commonwealth Edison (CECo) proposes to amend Appendix A, Technical Specification of Facility Operating License NPF-37, NPF-66, NPF-72 and NPF-77. The proposed amendment changes specifications 3/4.3.1 and 3/4.3.2 to implement quarterly testing of the Engineered Safety Features (ESFAS). Additionally, changes are being proposed to the functional units governing the Auxiliary Feedwater Switchover to Essential Service Water and the Refueling Water Storage Tank level channels to reflect the as-built configuration.

A detailed description of the proposed changes is presented in Attachments 1A, 1B, and 1C. The revised Technical Specification pages are contained in Attachment 2.

The proposed change has been reviewed and approved by both on-site and off-site review in accordance with CECo procedures. CECo has reviewed this proposed amendment in accordance with 10 CFR 50.92(c) and has determined that no significant hazards consideration exists. These evaluations are documented in Attachments 3A, 3B, and 3C. An Environmental Assessment has been completed and is contained in Attachment 4.

700010
9208100005 920805
PDR ADOCK 05000454
PDR

ZNLD/615/102

ADOCK

August 5, 1992

CECo 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.

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.

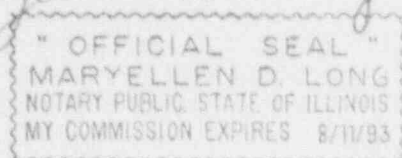
Please direct any questions regarding this matter to this office.

Sincerely,

Terrence W. Simpkin
T.W. Simpkin
Nuclear Licensing Administrator

cc: R.M. Pulsifer, Project Manager - NRR
J.B. Hickman, Project Manager - NRR
S. Dupont, Resident Inspector - Braidwood
W. Kropp, Resident Inspector - Byron
Document Control Desk - NRR
Region III Office
Office of Nuclear Facility Safety - IDNS

Maryellen D. Long 8/05/92



ATTACHMENT 1A
SUMMARY OF PROPOSED CHANGES
ESFAS CHANGES

Changes to Section 2 Bases to reflect the completion of the modification which moved the Reactor Trip on Turbine Trip setpoint from P-7 (10% Power) to P-8 (30% Power).

Table 3.3-1, Functional Units 9, 13, 14 reflect the deletion of a note which indicates that the AOT for these functions may differ between the RPS and ESFAS specifications. Approval of this change request will obviate the need for this note.

Page 3/4 3-3, Footnote **** is no longer required; the P-8 modification is complete on all units.

Page 3/4 3-5 Table notation *** is being deleted. The AOTs and surveillance frequencies between common RPS and ESFAS inputs will be identical.

Page 3/4 3-6 ACTIONS 9 and 11 are revised to reflect the full implementation of WCAP 10271.

Table 4.3-1 Footnote # is being deleted from Functional Units 2 through 13 and 19a through e. This note reflected a cycle-specific relief that is no longer applicable.

Table 4.3-1 Functional Units 9,13, and 14 are being revised to delete the ** note because the differences in surveillance frequencies between RPS and ESFAS are being removed. The note is also being deleted from page 3/4 3-12.

Page 3/4 3-10 Table 4.3-1, Functional Unit 16: The reference to P-7 and the *** notation were deleted.

Table 4.3-1 Functional Units 19a through e ACOT frequencies are being revised from Quarterly to Refueling to reflect the NRC position on interlock testing.

Page 3/4 3-12 Note 1 is changed to reflect a 31 day time limit. This change has been generically approved.

Page 3/4 3-12 Note 8 is being deleted; it is no longer used.

Page 3/4 3-12a Note 14 and 16 are being revised to delete reference to cycle-specific relief which is no longer applicable.

Page 3/4 3-13 is being revised to delete a note which is no longer applicable. The referenced cycle is now past. (Braidwood only)

Table 3.3-3 Functional Units 1c, 1e, 4c, 4d, and 4e are being modified to require Action 19 as opposed to the current Action 15. This is consistent with WCAP 10271.

Table 3.3-3 Functional Unit 6g is being revised to more accurately reflect the as-built plant configuration. Additionally, a new Action is being proposed. This change is discussed in more detail in Attachment 1B.

Table 3.3-3 Functional Unit 7b Action is being changed from 16 to 15. This change is discussed in more detail in Attachment 1C.

Table 3.3-3 Functional Unit 9d is being deleted because of duplication with Functional Unit 5b.

Table 3.3-3 Actions 14, 15, 16, 19, 21, and 24 are being revised to reflect the additional time it is permissible to bypass a channel, trip a channel, and restore a channel. These changes are permitted by WCAP 10271.

Table 4.3-2 Functional Units 1c, 1d, 1e, 2c, 3b3, 4c, 4d, 4e, 5b, 6c, 7b, 9a, and 9c are being revised to reflect Quarterly testing per WCAP 10271.

Table 4.3-2 Functional Units 1c, 1d, 1e, 2c, 3b3, 4c, 4d, 4e, 5b, 6c, 7b, 9a, and 9c are being revised to delete the # notation. This note referenced cycle-specific relief which is no longer applicable, and the actual note has been previously deleted.

Table 4.3-2 Functional Unit 6d has been revised from Monthly to Quarterly. This was not specifically addressed by WCAP 10271 because the Trip Actuating Device Operational Test Frequency was assumed to be on a refueling outage basis. This change is bounded by the WCAP assumption. Additionally, this change is necessary to implement Quarterly Testing for the other ESFAS function. The TADOT frequency for the RCP Undervoltage function in the Reactor Protection System is currently on a Quarterly basis. The same relays provide the input to the Reactor Trip function and the Auxiliary Feedwater start signal.

Table 4.3-2 Functional Unit 9d is being deleted because of duplication with Functional Unit 5b. The additional surveillance requirements for an Actuation Logic Test, Master Relay Test, and Slave Relay Test currently listed under Functional Unit 9d are being moved to Functional Unit 5b.

Bases page B 3/4 3-1 is being revised to reflect the changes made pursuant to WCAP 10271.

DESCRIPTION OF CURRENT OL REQUIREMENT:

ESFAS CHANGES

The current requirement reflects the Rev. 4 Westinghouse Standard Technical Specifications. These include provisions for monthly Analog Channel Testing, a two hour relief for testing of redundant channels while one channel is tripped, and various cycle specific reliefs.

BASES FOR THE CURRENT OL REQUIREMENT:

ESFAS CHANGES

The current requirements reflect the provisions of the Standard Technical Specifications in effect at the time of licensing, as modified by certain cycle specific reliefs.

PURPOSE FOR AMENDMENT REQUEST:

ESFAS CHANGES

In response to growing concerns of the impact of current testing and maintenance requirements on plant operation, particularly as related to instrumentation systems, the Westinghouse Owners Group (WOG) initiated a program to develop a justification to be used to revise generic and plant specific instrumentation technical specifications. Operating plants experienced many inadvertent reactor trips and safeguards actuations during performance of instrumentation surveillance, causing unnecessary transients and challenges to safety systems. Significant time and effort on the part of the operating staff was devoted to performing, reviewing, documenting and tracking the various surveillance activities, which in many instances seemed unwarranted based on the high reliability of the equipment. Significant benefits for operating plants appeared to be achievable through revision of instrumentation test and maintenance requirements.

In their letter dated February 21, 1985 (Reference 1), the NRC issued the Safety Evaluation Report (SER) for WCAP-10271 and Supplement 1. The SER approved quarterly testing, 6 hours to place a failed channel in a tripped mode, increased Allowed Outage Time (AOT) for test and testing in bypass for analog channels of the Reactor Trip System. The quarterly testing had to be conducted on a staggered basis.

In their letter dated February 22, 1989 (Reference 2), the NRC issued the SER for WCAP-10271 Supplement 2 and Supplement 2, Revision 1. The SER approved quarterly testing, 6 hours to place a failed channel in a tripped mode, increased Allowed Outage Time for test and testing in bypass for analog channels of the ESFAS. The ESFAS functions approved in the SER were those presented in Appendix A1 of the reference WCAPs. These functions are all included in the Westinghouse Standard Technical Specifications. Staggered testing was not required for ESFAS analog channels and the requirement was removed from the RTS analog channels.

In their letter dated April 30, 1990 (Reference 5), the NRC issued the Supplemental SER (SSER) for WCAP-10271 Supplement 2 and Supplement 2, Revision 1. The SSER approved Surveillance Test Interval (STI) and AOT extensions for the ESFAS functions that were included in Appendix A2 of WCAP-10271, Supplement 2, Revision 1. The functions approved are associated with the Safety Injection, Steam Line Isolation, Main Feedwater Isolation, and Auxiliary Feedwater Pump Start signals. The configurations contained in the Appendix A2 are those that are not contained in the Westinghouse Standard Technical Specifications.

With the issuance of the SER and SSER, the relaxations for the analog channels of the RTS and ESFAS are now the same and the special conditions applied to shared analog channels are no longer applicable.

One Functional Unit that is not included in the WCAP-10271 program but is implemented in the Solid State Protection System at Byron and Braidwood Units 1 and 2 is Functional Unit 7b., Automatic Opening of Containment Sump Suction Isolation valves on RWST Level Low-Low. This Functional Unit must be relaxed if the extended AOTs for the Automatic Actuation Logic and Actuation Relays are to be granted for the Functional Units that are relaxed by the WCAP-10271 program. This is required because the Logic and Actuation Relays are a single system and if any Functional Unit implemented in the system is not eligible for the relaxations, then that Functional Unit becomes a limiting factor.

Commonwealth Edison Company carried out a plant specific evaluation of this Functional Unit (Ref. 6.) to determine the change in availability of the function when the same relaxations in AOTs and STIs approved in the generic program are applied. The results show that the decrease in availability is 12% or less for the automatic functions. This corresponds to the lowest values calculated for any Functional Units in the generic program.

No plant modifications are required to implement the items requested in this LAR. Increased Allowed Outage Time and allowed testing in bypass mode will be accomplished with the present plant configuration. At present Byron and Braidwood Nuclear Stations do not have bypass testing capability for any of the analog instrumentation associated with the RTS or ESFAS with the exception of the Containment Pressure High-3 channels.

If in the future Byron and Braidwood Nuclear Stations do elect to test in bypass, plant modifications will be required. Any future bypass testing on the channels addressed by this revision would be accomplished without reliance upon lifted leads or temporary jumpers and will provide bypass status indications to the plant operators in the control room.

An additional function not specifically addressed by the WCAP is the Trip Actuating Device Operational Test (TADOT) frequency for an Auxiliary Feedwater start signal upon receipt of an RCP Bus Undervoltage signal. The current frequency for the TADOT of this function is Quarterly for RPS and Monthly for ESFAS. The same relays and logic provide both the Reactor Trip input and the Auxiliary Feedwater start signal. The WCAP assumed a Refueling frequency for this TADOT, so this change is conservative with respect to the WCAP assumptions. Additionally, in order to implement the Quarterly testing provisions completely, the TADOT for the RCP Undervoltage Auxiliary Feedwater start signal must be revised to a Quarterly frequency.

DESCRIPTION OF AMENDED OL REQUIREMENT:

ESFAS CHANGES

Increasing the Surveillance Test Interval for the RTS and ESFAS instrumentation minimizes the potential number of inadvertent ESFAS actuations and reactor trips during surveillance testing. Less frequent surveillance testing has been estimated to result in 0.5 fewer inadvertent reactor trips, per unit, per year. Also, increasing the surveillance interval enhances the operational effectiveness of plant personnel. The amount of time plant personnel spend performing surveillance testing will be reduced. This allows manpower to be used for other tasks such as preventative maintenance. The increased AOT has been shown to result in fewer human factor errors, since more time is allowed to perform an action.

WCAP-10271 results show that the reduction in testing and the increase in testing and maintenance AOTs do not adversely affect public health and safety. The results of the plant specific evaluation for the Functional Unit 7.b., Automatic Opening of Containment Sump Suction Isolation valves on RWST Level Low-Low also supports this conclusion. The proposed revision will reduce the number of ESFAS actuations and reactor trips and allow CECo to better manage resources to maintain the plant.

Deletion of Table Notation *** in Table 3.3-1, Table Notations ** and # and references to initial surveillance performance in Table Notations (14) and (16) in Table 4.3-1, and Table Notation # in Table 4.3-2, is purely administrative. These items are no longer applicable.

Notation **** and the reference to P-7 in Functional Unit 16 of Table 3.3-1 is deleted as the reference modifications have been completed and the Function is now Turbine Trip above P-8. The Notation *** is deleted and the P-7 is changed to P-8 in Table 4.3-1 Functional Unit 16 for the same reason.

Changes to the ANALOG CHANNEL OPERATIONAL TEST requirements for Functional Units 5, 6 and 19 and the Table Notation (1) of Table 4.3-1 are in accordance with the Standard Technical Specifications and the NRC position regarding the routine verification of permissive status.

Functional Unit 9d is deleted as this is a repeat of Functional Unit 5b. Different actions were shown for these two Functional Units. The correct action for the function is ACTION 19 as applied to Functional Unit 5b. Deletion of Functional Unit 9d does not therefore constitute a change in Technical Specification requirements.

Functional Unit 7b is configured for testing in the tripped condition and not bypass at both Byron and Braidwood. ACTION 15 more accurately reflects the proper requirement for the installed configuration. This change discussed in Attachment 1C.

BASES FOR AMENDED OL REQUIREMENT:

ESFAS CHANGES

In WCAP-10271 and its supplements, the WOG evaluated the impact of the proposed STI and AOT changes on core damage frequency and public risk. The NRC staff concluded in its evaluation (Reference 2) of the WOG evaluation that an overall upper bound of the core damage frequency

increase due to the proposed STI/AOT changes is less than 6 percent for Westinghouse Pressurized Water Reactors (PWR) plants. The NRC Staff also concluded that actual core damage frequency increases for individual plants are expected to be substantially less than 6 percent. The NRC Staff considered this core damage frequency increase to be small compared to the range of uncertainty in the core damage frequency analyses and therefore acceptable.

Additionally the NRC Staff concluded that a staggered test strategy need not be implemented for ESFAS analog channel testing and is no longer required for RTS analog channel testing. This conclusion was based on the small relative contribution of the analog channels to RTS/ESFAS unavailability, process parameter signal diversity and normal operational testing sequencing.

The NRC determined that the requirement to routinely verify permissive status is a different consideration than the availability of trip or actuation channels which are required to change state on the occurrence of an event and for which the function availability is more dependent on the surveillance interval. The definition of the CHANNEL CHECK includes comparison of the channel status with other channels for the same parameter. For the Reactor Trip System Interlocks, the change from Q(8) to R (at least once every 18 months) is therefore justified.

Most of the proposed changes are consistent with NRC Safety Evaluation Reports dated February 21, 1985 (Reference 1), February 22, 1989 (Reference 2), and April 30, 1990 (Reference 5) regarding WCAP-10271, WCAP-10271 Supplement 1, WCAP-10271 Supplement 2, and WCAP-10271 Supplement 2, Revision 1. One Functional Unit for which relaxations are requested was not part of the WCAP-10271 generic program. The functional unit is 7, Automatic Opening of Containment Sump Suction Isolation valves on RWST Level Low-Low.

Commonwealth Edison Company carried out a plant specific evaluation of the Functional Unit (Ref. 6.) to determine the change in availability when the same relaxations in AOTs and STIs approved in the generic program are applied. The results of the evaluation showed that the decrease in availability was 12% or less for the automatic function. This corresponds to the lowest values calculated for any Functional Units in the generic program. For the RWST Switchover to Containment Sump function, as the final switchover is manually initiated, and the Emergency Operating Procedures include steps to verify the automatic function has occurred, the decrease in automatic function availability has no impact on the ultimate success of the Switchover.

Changes proposed that are not evaluated in the WCAP 10271 generic program or the plant specific evaluation are all editorial in nature. The majority of the changes are no longer applicable because the cycle they reference is no longer applicable. In the case of the Reactor Trip Functional Unit 16, Turbine Trip, the modification has been completed and the reference to P-7 is no longer applicable. These changes have no impact on plant safety.

Functional Unit 7b, RWST Level - Low Low channels are configured to test in the tripped condition at both Byron and Braidwood. ACTION 15 more accurately reflects this configuration and allows a channel in test or a failed channel to be placed in a tripped condition. The test in trip configuration was used in the plant specific evaluation for this Functional Unit (Ref. 6) that established the acceptability of a quarterly test interval. This change is discussed in Attachment 1C.

The NRC Staff has stated that approval of the changes approved in their SERs is contingent upon confirmation that certain conditions are met. Although WCAP-10271 Supplement 2 and WCAP-10271 Supplement 2, Revision 1, apply to ESFAS instrumentation it is the interpretation of Commonwealth Edison Company that conditions imposed in the SER (Reference 1) for WCAP-10271 and WCAP-10271 Supplement 1 for the RTS instrumentation shall also be applied to the ESFAS where appropriate. The same conditions are applied to the two Functional Units not covered by the generic program where applicable. Commonwealth Edison Company response to these conditions is provided below.

1. RTS SER Conditions:

- a. SER Condition - NRC Staff stated in the RTS SER (Reference 1, page 10) that approval of an increase in Surveillance Test Interval (STI) for the analog channel operational tests from once per month to once per quarter is contingent on performance of the testing on a staggered test basis. In the ESFAS SER (Reference 2, page 4 of enclosure 1) this requirement was removed.

Commonwealth Edison Company Response - This SER Condition is not a concern for Byron and Braidwood Nuclear Stations as the requirement to perform the testing on a staggered test basis was not implemented for RTS functions.

- b. SER Condition - NRC Staff stated in the RTS SER (Reference 1, page 10) that approval of items related to extending STI is contingent on procedures being in place to require evaluation of failures for common cause and to require additional testing if necessary.

Commonwealth Edison Company Response - Byron and Braidwood Nuclear Stations have implemented procedures and procedural steps to evaluate failures for common cause and require additional testing as necessary in accordance with the WOG position given in "Westinghouse Owners Group Guidelines for Preparing Submittals Requesting Revision of Reactor Protection System Technical Specification, Revision 1". These guidelines were reviewed and approved by NRC Staff.

- c. SER Condition - NRC Staff stated in the RTS SER (Reference 1, page 10) that for channels which provide dual inputs to other safety related systems such as ESFAS, the approval of items that extend STI and Allowed Outage Times (AOTs) apply only to the RTS function.

Commonwealth Edison Company Response - The ESFAS SER has been issued (References 2 and 5). The extensions approved for the ESFAS analog Channels are the same as the RTS. The notes added at the time the RTS relaxations were implemented at Byron and Braidwood Nuclear Stations noting the above condition are being removed as part of this Amendment Request.

- d. SER Condition - NRC Staff stated in the RTS SER (Reference 1, page 10) that approval of channel testing in a bypassed condition is contingent on the capability of the RTS design to allow such testing without lifting leads or installing temporary jumpers.

Commonwealth Edison Company Response - At present the Byron and Braidwood Nuclear Stations do not have bypass testing capability for any of the analog instrumentation associated with the RTS or ESFAS with the exception of the Containment Pressure--High-3 channels.

If in the future Byron or Braidwood Nuclear Stations do elect to test other channels in bypass, plant modifications will be required. Any future bypass testing would be accomplished without reliance upon lifted leads or temporary jumpers and will provide bypass status indications to the plant operators in the control room.

- e. SER Condition - NRC Staff stated in the RTS SER (Reference 1, page 9) that acceptance was contingent on confirmation that the instrument setpoint methodology includes sufficient margin to offset the drift anticipated as a result of less frequent surveillance.

Commonwealth Edison Company Response - Byron and Braidwood Nuclear Stations implemented programs to evaluate setpoint drift in accordance with the WOG position given in the "Westinghouse Owners Group Guidelines for Preparing Submittals Requesting Revision of Reactor Protection System Technical Specification, Revision 1". These guidelines were reviewed and approved by NRC Staff.

Commonwealth Edison Company has determined that the values used in the Byron and Braidwood Nuclear Station setpoint methodology properly account for drift due to extended STIs.

2.ESFAS SER Conditions:

- a. SER Condition - NRC Staff stated in the ESFAS SER (Reference 2, Table 1 of enclosure 1) that the licensee must confirm the applicability of the generic analyses to the plant.

Commonwealth Edison Company Response - The generic analyses used in WCAP-10271 and Supplements is applicable to the Byron and Braidwood Nuclear Stations. The Byron and Braidwood Nuclear Stations use the Westinghouse 7300 Process Control System and the Westinghouse Solid State Protection System (SSPS) for both the ESFAS and RTS. Both of these systems were specifically modelled in the generic analyses. The ESFAS Functional Units implemented are all addressed by the generic analyses with the exception of Functional Unit 7b. This functional Unit is addressed on a plant specific basis in Reference 6, and it has been determined that the Functional Unit has a change in availability of less than 12%. Functional Units in the generic program and the evaluation determined that an increase in unavailability of less than 12% is acceptable.

- b. SER Condition - NRC Staff stated in the ESFAS SER (Reference 2, Table 1 of enclosure 1) that the licensee must confirm that any increase in instrument drift due to the extended STIs is properly accounted for in the setpoint calculation methodology.

Commonwealth Edison Company Response - Same as RTS SER Condition e. above.

SCHEDULAR REQUIREMENTS:

ESFAS CHANGES

There are no schedular constraints associated with these changes.

NOTE: See No Significant Hazards Consideration for listing of references.

DESCRIPTION OF CURRENT OL REQUIREMENT:

AUXILIARY FEEDWATER PUMP SUCTION PRESSURE-LOW (TRANSFER TO ESSENTIAL SERVICE WATER) CHANGE

The current Specification states that a two-out-of-two actuation logic is required to transfer the suction of the auxiliary feedwater (AF) pumps to the essential service water (SX) system due to low AF pump suction pressure coincident with an Engineered Safety Features Actuation System (ESFAS) actuation signal to the AF pumps. The Specification also states that with one inoperable channel operation may proceed until the performance of the next required ANALOG CHANNEL OPERATIONAL TEST provided the inoperable channel is placed in the tripped condition within one hour.

BASES FOR THE CURRENT OL REQUIREMENT:

AUXILIARY FEEDWATER PUMP SUCTION PRESSURE-LOW (TRANSFER TO ESSENTIAL SERVICE WATER) CHANGE

The transfer of AF pump suction to the SX supply provides a safety-related alternate water source for the AF pumps in the event that the primary non-safety-related water source, the condensate storage tank (CST), becomes unavailable. Two-out-of-two actuation logic is required to transfer the suction of both AF pumps to the SX water supply.

The associated ACTION of allowing continued operation until the performance of the next required ANALOG CHANNEL OPERATIONAL TEST provided the inoperable channel is placed in the tripped condition within one hour is consistent with two-out-of-two actuation logic. Placing the inoperable channel in the tripped condition would reduce the actuation logic to one-out-of-one. This ACTION would ensure that the AF pump suction would be transferred to the SX system in the event of a low suction pressure signal from the remaining OPERABLE AF pump suction pressure channel coincident with an ESFAS actuation signal to the AF pumps.

PURPOSE FOR AMENDMENT REQUEST:

AUXILIARY FEEDWATER PUMP SUCTION PRESSURE-LOW (TRANSFER TO ESSENTIAL SERVICE WATER) CHANGE

This purpose of this LAR is to change the Specification to accurately reflect the as-built plant configuration and prevent an inadvertent injection of SX water into the steam generators.

DESCRIPTION OF AMENDED OL REQUIREMENT:

AUXILIARY FEEDWATER PUMP SUCTION PRESSURE-LOW (TRANSFER TO ESSENTIAL SERVICE WATER) CHANGE

This LAR would change Specification Table 3.3-3, Functional Unit 6.g, Auxiliary Feedwater Pump Suction Pressure-Low (Transfer to Essential Service Water) Total Number of Channels, Channels to Trip, and Minimum Channels OPERABLE from two to one per train.

The ACTION would be changed such that if a channel were to become inoperable the associated AF pump would be declared inoperable and Specification 3.7.1.2 would be applied rather than placing the inoperable channel in the tripped condition and continuing operation until the performance of the next required ANALOG CHANNEL OPERATIONAL TEST.

BASES FOR AMENDED OL REQUIREMENT:

AUXILIARY FEEDWATER PUMP SUCTION PRESSURE-LOW (TRANSFER TO ESSENTIAL SERVICE WATER) CHANGE

The as-built plant configuration has only one suction pressure transmitter installed at the suction of each AF pump. A low suction pressure condition sensed by that transmitter in conjunction with an ESFAS actuation signal for its associated AF pump will initiate a transfer of the associated AF pump suction from the CST to the SX water supply. This actuation is train dependent and has a one-out-of-one actuation logic.

The current ACTION allows for continued operation until performance of the next required ANALOG CHANNEL OPERATIONAL TEST provided the inoperable channel is placed in the tripped condition within one hour. Rather than reducing the actuation logic to one-out-of-one, placing the channel in the tripped condition arms the transfer of the associated AF pump suction to the SX water supply. If the associated AF pump were to subsequently receive an ESFAS actuation signal, then the associated AF would start, its suction would be transferred to the SX water supply, and SX water would be injected into the steam generators. Injection of untreated SX water into the steam generators would have a devastating effect on secondary water chemistry and potentially shorten steam generator life. At a minimum, an extended outage would be required for secondary water chemistry cleanup and evaluation of long term effects. In order to preclude this potential event from occurring, current operating practice is to place the control switch for the associated AF pump in the pull out position rendering that pump inoperable prior to placing the inoperable AF pump suction pressure channel in the tripped condition. Specification 3.7.1.2 then becomes limiting requiring the associated AF pump to be restored to OPERABLE status within 72 hours or be in HOT STANDBY in the next six hours and in HOT SHUTDOWN within the following six hours.

The proposed ACTION would effectively impose a 72 hour allowed outage time (AOT) by invoking Specification 3.7.1.2. By not requiring the inoperable AF suction pressure channel to be placed in the tripped condition the control switch for the associated AF pump need not be placed in the pull out position leaving that pump available to manually or automatically respond in the event of a valid ESFAS actuation during the 72 hour AOT.

SCHEDULAR REQUIREMENTS:

AUXILIARY FEEDWATER PUMP SUCTION PRESSURE-LOW
(TRANSFER TO ESSENTIAL SERVICE WATER) CHANGE

There are no specific schedular restraints associated with this change.

ATTACHMENT 1C
SUMMARY OF PROPOSED CHANGE TO RWST LEVEL CHANNEL

Byron and Braidwood are provided with four independent RWST level channels. The logic is such that the containment sump suction valves will automatically open if 2/4 RWST channels reach the Low-Low setpoint coincident with the presence of an SI signal. The RWST level channels do not provide a control function, so only three channels are required to demonstrate compliance with IEEE 279-1971.

The installed configuration is such that a given channel is tripped when its bistable switch is taken to the TEST position. This physical configuration makes bypassing an inoperable channel impossible without the use of jumpers or removing circuit cards. Action 16 requires that an inoperable channel be placed in the bypassed condition. Testing in bypass with the use of jumpers is not endorsed by the SER issued for WCAP 10271. Additionally, bypass indication is not available in the control room for these channels. IEEE 279-1979 requires this indication for functions that are tested in bypass.

The new action statement will allow an inoperable channel to be placed in the tripped condition. This configuration is in full compliance with IEEE 279-1971. Because the time that this configuration is allowed is limited by the new action statement, an additional failure need not be postulated during periods of inoperability.

DESCRIPTION OF CURRENT OL REQUIREMENT:

RWST LEVEL CHANNEL CHANGE

The current Action Statement requires an inoperable channel to be bypassed. Byron and Braidwood are configured such that an inoperable channel is removed from service by placing that channel in the tripped condition. In order to bypass the channel, temporary jumpers must be installed, or a circuit card removed. Testing in this configuration is contrary to IEEE 279 and the SER associated with WCAP 10271.

BASES FOR THE CURRENT OL REQUIREMENT:

RWST LEVEL CHANNEL CHANGE

The RWST level channels are configured in an "energize to actuate" scheme. Testing in bypass would be the preferred configuration in cases where a channel failure while a redundant channel is being tested would result in an undesirable actuation. By bypassing a channel removed from service for test or maintenance, the resulting actuation coincidence is changed from the normal two-out-of-four to a two-out-of-three coincidence, thus affording protection from an undesirable actuation due to a single channel failure. Placing the RWST channels in the bypassed configuration is unnecessary because a two-out-of-four coincidence must be achieved concurrent with a Safety Injection signal to achieve the automatic opening of the containment sump suction valves.

PURPOSE FOR AMENDMENT REQUEST:

RWST LEVEL CHANNEL CHANGE

The amendment request will allow inoperable RWST channels to be removed from service in a manner consistent with the physical installation at Byron and Braidwood. This amendment request would also allow periodic surveillances of the RWST channels to be performed in full compliance with IEEE 279-1971.

DESCRIPTION OF AMENDED OL REQUIREMENT:

RWST LEVEL CHANNEL CHANGE

The new action statement will require RWST channels that are inoperable to be placed in the tripped condition within 6 hours. Operation may continue until the next required ANALOG CHANNEL OPERATIONAL TEST.

BASES FOR AMENDED OL REQUIREMENT:

RWST LEVEL CHANNEL CHANGE

Each RWST is equipped with 4 level channels. This is one more than required by IEEE 279-1971, because there are no control functions associated with the subject channels. Other than alarm functions, these level channels provide an input to the SSPS. These inputs are associated with the semi-automatic switchover of the ECCS to the containment recirculation sumps. Upon reaching a level of 46.7% on two of the four level channels, concurrent with an SI signal, the containment sump suction valves will open. Manual action is then required to complete the realignment, which would isolate the RWST from the RH system. Prior to the completion of this realignment, the RH pumps take suction jointly from the containment sump and the RWST, i.e. the sump and the RWST are crosstied.

While a channel is being surveilled or is otherwise inoperable, it is placed in a tripped condition, consistent with the installed configuration. This results in a 1/3 coincidence concurrent with an SI signal to effect the opening of the containment sump suction valves. In this configuration, full compliance with IEEE 279-1971 is maintained.

The affected modes are Modes 1 through 4, which coincides with the modes of applicability for the affected ECCS systems. Although an SI pump is required to be available in some Mode 5 and 6 configurations (during periods of reduced inventory operation), no credit for the semiautomatic switchover to the sump is assumed.

SCHEDULAR REQUIREMENTS:

RWST LEVEL CHANNEL CHANGE

There are no specific schedular restraints associated with this change.