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ComEd

December 8, 1997

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Subject: Byron Nuclear Power Station, Units 1 and 2
Facility Operating Licenses NPF-37 and NPF-66
NRC Docket Nos. 50-454 and 50-455

Braidwood Nuclear Power Station, Units 1 and 2
Facility Operating Licenses NPF-72 and NPF-77
NRC Docket Nos. 50-456 and 50-457

Response to Request for Additional Information for ITS Sections
3.5 and 3.6.

- References: (1) R. Assa (NRC) to I. Johnson (Commonwealth Edison) letter dated August 5, 1997.
- (2) G. Stanley and K. Graesser (Commonwealth Edison) to NRC letter dated December 13, 1996.

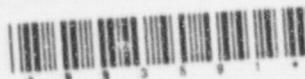
The purpose of this letter is to transmit Commonwealth Edison's (ComEd's) response to the NRC's request for additional information (RAI) for Improved Technical Specifications (ITS) Sections 3.5 and 3.6. The responses to the RAI questions are contained in Attachment 1.

The RAI contains questions and comments stemming from the NRC's partial review of a ComEd request (Reference (2)) to amend the Current Technical Specifications (CTS) for Byron Units 1 and 2 and Braidwood Units 1 and 2. The amendments were requested in order to adopt the Improved Technical Specifications of NUREG-1431, Revision 1. The questions and comments involve only Sections 3.5 and 3.6 of the Reference (2) submittal.

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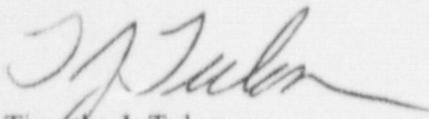
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December 8, 1997

As discussed with NRC Staff in an August 12, 1997 teleconference, this submittal does not include any replacement or CTS Markup pages. The required page changes and markups will be submitted at a later date when the NRC review and acceptance of ComEd's Response to this NRC RAI is complete.

Please address any comments or questions regarding this matter to our Nuclear Licensing Department.

Sincerely,



Timothy J. Tulon
Site Vice President
Braidwood Nuclear Generating Station

Attachment 1: Response to NRC RAI Report

cc: Regional Administrator - Region III, NRC
Byron Project Manager - NRR
Braidwood Project Manager - NRR
Senior Resident Inspector - Braidwood Station
Senior Resident Inspector - Byron Station
Office of Nuclear Safety - IDNS

Attachment 1

Response to NRC RAI Report
on the ComEd ITS Submittal

Response to NRC RAI Dated 11/05/9709-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.5-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of IssueJFD C2
ITS 3.5.1 Applicability
WOG-81

WOG-81 proposes to modify the Applicability statements throughout the STS and is proposed for adoption in the ITS. This generic change is not approved. Comment: Revise all Applicability statements affected by WOG-81 to conform to the STS. This is a global comment.

ComEd Response to Issue

WOG-81 was withdrawn in its entirety throughout the ITS submittal. The submittal was revised to adopt the STS presentation in the Applicability Section.

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|------------------------------|
| 3.5.1-01 | 11/5/97 | Open - ComEd Action Required |

NRC Description of IssueDOC A7
JFD B4
CTS 4.5.1.1.b
ITS SR 3.5.1.5

CTS 4.5.1.1.b refers to an accumulator solution volume increase of 70 gallons. Corresponding ITS SR 3.5.1.5 proposes to utilize 10% of indicated level instead. No calculation is provided to demonstrate that 10% of indicated level is equivalent to 70 gallons. Comment: Revise DOC A7 to demonstrate that 10% indicated level is equivalent to 70 gallons.

ComEd Response to Issue

Section 3.5 DOC A7 was revised to read, "CTS SR 4.5.1.1.b requires the accumulators be sampled after each volume increase of greater than or equal to 70 gallons. Currently, when filling the accumulators per the operating procedures, the accumulators are conservatively required to be sampled after each fill to ensure compliance with this SR. ITS SR 3.5.1.5 will require verifying the boron concentration of the accumulator solution once within 6 hours after each solution volume increase of greater than or equal to 10% of indicated level which is equivalent to 70 gallons. The nominal water volume of the SI Accumulators is 7106 gallons based on the minimum and maximum volumes of 6995 gallons at 31% indicated level (low level alarm) and 7217 gallons at 63% indicated level (high level alarm). This change in volume is equal to 222 gallons over a 32% level span or approximately 7 gallon per % level change. The 0% level equivalent is 6781 gallons and the 100% level indication is 7466 gallons equaling a total change of 685 gallons over the 100% indicated level span or 6.85 gallons per % level change. This would equal a 10.2% indicated level increase for a 70 gallon volume increase in the SI accumulator. The expression for volume has been changed from gallons to an equivalent percent indicated level to be consistent with the indication available to the operator and the manner in which the increase in volume is verified. This change is perceived as the intent of the CTS wording, is considered editorial in nature and does not involve a technical change (either actual or interpretational) to the TS. This change is consistent with NUREG-1431.

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.5.2-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA6

CTS 3.5.2 footnote *

ITS LCO 3.5.2 Note 2

Bases discussion for ITS LCO 3.5.2, STS markup page B 3.5-14
14A

Bases insert B 3.5-

CTS 3.5.2 footnote * requires the accumulators to be Operable during Mode 3 with pressurizer pressure < 1000 psig whenever isolation valves SI8809A or SI8809B are closed. It has been proposed to move this requirement to the TRM and to replace it with a requirement to provide an alternate means of cold leg injection for each isolated flow path. DOC LA6 states that establishing accumulator Operability during this condition is not important provided an alternate means of establishing cold leg injection is established. Comment: Revise the Bases to state what the acceptable alternative means of cold water injection are, including Operable accumulators.

ComEd Response to Issue

The LCO Section of the Bases for ITS LCO 3.5.2 has been modified to add the statement, "An alternate means may include: 1) OPERABLE accumulators with their isolation valves either closed, but energized, or open; 2) cold leg injection via the Safety Injection pumps, and the SI8821A/B and the SI8835 valves; or 3) cold leg injection via the Centrifugal Charging pumps and the SI8801A/B valves." In addition, Section 3.5 DOC LA6 has been revised to relocate the available alternate means of cold leg injection for each isolated flow path to the Bases vice the TRM.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.5.5-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC L8

CTS 3/4.4.6.2 Action b

ITS 3.5.5 Action B

In the event reactor coolant system leakage is above limits and is not restored to within limits in 4 hours, CTS 3/4.4.6.2 Action b requires being in Cold Shutdown (Mode 5) within 30 hours after reaching Hot Standby (Mode 3). Corresponding Action B of ITS 3.5.5 requires being in Mode 3 in 6 hours and Mode 4 in 12 hours; it does not require entry into Mode 5. The CTS markup shows this change is addressed by DOC L8, which by focusing on the deletion of Mode 4 from the Applicability, covers the change to Mode 4. However, L8 does not address the Completion Time change to 12 hours, which is hard to characterize because the CTS do not stipulate when Mode 4 must be entered, only that Mode 5 must be entered within the following 30 hours after entering Mode 3. Comment: Revise DOC L8 to address the change in Completion Time.

ComEd Response to Issue

Section 3.5 DOC L8 has been revised to state, "CTS LCO 3.4.6.2 requires the Applicability of the seal injection flow requirements in Modes 1, 2, 3, and 4. In addition, the LCO and SR references various conditions for exiting the Mode of Applicability and exceptions to Specification 4.0.4 for entry into Mode 3 and 4. ITS LCO 3.5.5 requires the Applicability of the seal injection flow requirements in Modes 1, 2, and 3. The CTS has been revised to eliminate the Mode 4 seal injection flow requirements. This change is acceptable since high seal injection flow is less critical as a result of the lower initial RCS pressure and decay heat removal requirements in Mode 4. In Modes 1, 2, and 3, the seal injection flow limit is dictated by ECCS flow requirements. Therefore, RCP seal injection flow is limited in Modes 1, 2, and 3 to ensure adequate ECCS performance and changing the Mode of Applicability is acceptable. Changing the Applicability to MODES 1, 2, and 3 changed the Completion Time to exit the mode of applicability from 30 hours to be in MODE 5 to 12 hours to be in MODE 4. The Completion Time of 12 hours to be in MODE 4 is consistent with both the CTS and the ITS Completion Times used throughout the specifications for placing the unit in MODE 4, including LCO 3.0.3. This change is consistent with NUREG-1431. See Discussion of Change M2 for discussion of the Mode 3, 4.0.4 exception." ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A1

CTS 3/4.6.4.1, Hydrogen Monitors

ITS 3.3.3

ITS 3.3.6

The CTS markup for CTS 3/4.6.4.1, Hydrogen Monitors, shows that this specification is retained as part of ITS 3.3.3; however, the CTS Split Report states this specification is retained as part of ITS 3.3.6, Radiation Monitoring. Comment: Correct this discrepancy.

ComEd Response to Issue

The Split Report was revised to state that the Hydrogen Monitors are being retained as part of ITS LCO 3.3.3.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6-02 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC L9

JFD P.6

Bases JFD B2 (Bases for ITS 3.6.8)

Bases JFD P6

STS 3.6.9, Hydrogen Mixing System

DOC L9, JFD P.6, Bases JFD B2 (Bases for ITS 3.6.8), and Bases JFD P6 imply or state that the reactor containment fan coolers provide an alternate hydrogen control function similar to or the same as the STS hydrogen mixing system. ITS 3.6.6 and associated Bases do not contain any information or discussions about the hydrogen mixing/hydrogen control function of the reactor containment fan coolers. In addition, JFD B6 and Bases JFD P.6 do not discuss how the containment cooling system SRs and Actions are more conservative than the Actions and SRs associated with STS 3.6.9. Comment: Adopt STS 3.6.9 or a plant-specific equivalent in the ITS with appropriate discussions and justifications or provide additional discussion and justification for not adopting STS 3.6.9. See Comment 3.6.8-02.

ComEd Response to Issue

The fact that the Containment Spray System and the Reactor Containment Fan Coolers (RCFCs) provide an alternate hydrogen control function is discussed in the Byron/Braidwood UFSAR Section 6.2.5.2.3, "Hydrogen Mixing System Design," and states, "The function of the mixing subsystem is to ensure that local concentrations with greater than 4% hydrogen cannot occur within the primary containment following a LOCA. The mixing is achieved by natural convection processes, containment fan cooler operation, and the containment spray system. Natural convection occurs as a result of the temperature difference between the bulk gas space in the vessel and the containment wall. The natural convection action is enhanced by the momentum of steam emitted from the point of the break. The operation of the containment spray system following the accident will result in the creation of an extremely turbulent atmosphere within the containment, as demonstrated in the Zion Station full-flow containment spray system test. The containment spray system is discussed in Subsection 6.5.2. Mixing of the containment atmosphere to assure that there will be no "pocketing" of large hydrogen concentrations will be accomplished by the reactor containment fan coolers (RCFC), an engineered safety feature described in Subsection 6.2.2. The operation of the recombiner system is not dependent on the operation of any engineered safety features other than the reactor containment fan coolers. Four coolers (two required for both normal and postaccident conditions) each supplying 94,000 cfm (normal operation) or 59,000 cfm (postaccident operation) are provided for each containment. The RCFC fans discharge this air through concrete ducts to the lower elevation." For completeness, the Background Section of the Bases for ITS LCO 3.6.6, "Containment Spray and Cooling Systems," was revised to add the sentence, "In addition, the Containment Spray System and Containment Cooling System provide an alternate hydrogen control function to the hydrogen recombiners during post-LOCA conditions." The fact that the Post-LOCA Purge System provides an alternate hydrogen control function is discussed in the Byron/Braidwood UFSAR Section 9.4.9.3.1.a.1, "Post-LOCA Purge System Safety Design Bases," and states "The post-LOCA purge system is a non-safety-related system (per Branch Technical Position CSB 6-2) which is provided as a backup to the hydrogen recombiners to purge the containment of hydrogen to maintain the hydrogen concentration below 4% by volume." ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A1
CTS 3/4.6.1

CTS 3/4.6.1, the existing specification for primary containment, is the basis for ITS 3.6.1, Containment. In the upper right hand corner of the CTS markup, DOC A1 shows CTS 3/4.6.1 also has requirements which apply to ITSs 3.7.3 and 5.5.16; however, the CTS markup does not identify any specific requirements related to these specifications. DOC A1 does not provide sufficient technical justification to explain this reference to ITSs 3.7.3 and 5.5.16. Comment: Revise the CTS markup to delete these ITS references or explain why they are appropriate.

ComEd Response to Issue

The CTS Markup pages were revised to delete the reference to ITS LCO 3.7.3. CTS DOC A5, as annotated on the CTS Markup, references Specification 5.5.16.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-02 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A1
CTS 3.6.1.6 Actions
ITS 3.6.1 Action A

CTS 3/4.6.1.6 ACTION a allows 15 days to restore containment integrity for structural degradation and ACTION b allows 72 hours to restore containment integrity for an inoperable tendon group. Corresponding ITS 3.6.1 ACTION A allows one hour to restore the containment Operable status. ITS 3.6.1 now includes all Operability requirements and remedial actions for containment. Thus CTS 3.6.1.6 ACTIONS a and b are replaced with ITS 3.6.1 Action A. Since Action A is More Restrictive than the action requirements it replaces, this change is more restrictive, not administrative. Comment: Revise the submittal to show that CTS 3.6.1.6 Actions a and b are replaced by Action A of ITS 3.6.1, and provide justification for this more restrictive change. See Comment 3.6.1-03.

ComEd Response to Issue

No change. CTS 3.6.1.6 Actions a and b provide actions to restore the tendon(s) or the containment vessel to the required level of integrity within 15 days and 72 hours, respectively, and perform an engineering evaluation of the containment within 30 days and 15 days, respectively. The purpose of the evaluation is to demonstrate compliance with CTS 3.6.1.1 for primary containment integrity. Only after the engineering evaluation is performed and it is determined that primary containment integrity is lost, is the 1 hour action of CTS 3.6.1.1 applicable. Further, as addressed in Section 5.0 DOC A38 and LA14, the requirements for the Containment Vessel Structural Integrity Specification (CTS LCO 3.6.1.6) are placed in a program in the Administrative Controls Chapter (ITS Specification 5.5.6, "Pre-Stressed Concrete Containment Tendon Surveillance Program"). Section 5.0 provides the markups and justifications for CTS LCO 3.6.1.6. This presentation conforms to the standard for ITS submittals. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-03 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A1
 CTS 3.6.1.6 Actions
 ITSs 5.5.6 and 5.6.8

CTS 3.6.1.6 Actions require submitting Special Reports to the Commission in accordance with CTS 6.9.2. Since these CTS Actions are replaced by ITS 3.6.1 ACTION A, which does not require Special Reports, the CTS markup should indicate the disposition of the requirement for Special Reports - whether moved to another specification or deleted. DOC A1 indicates generally that portions of CTS 3.6.1.6 are moved to ITS 5.5.6 and 5.6.8; however, the CTS markup does not indicate which of these details are moved to these specifications. Comment: Revise the CTS markup to show which items remain in ITS 3.6.1 and which are moved to ITS 5.5.6 and 5.6.8. Provide additional discussions and justifications for these changes. See Comments 3.6.1-02 and 3.6.1-05.

ComEd Response to Issue

No change. As addressed in Section 5.0 DOC LA14, the reporting requirements of the containment structure are contained in ITS Specification 5.6.8, "Tendon Surveillance Report," which was adopted verbatim. This presentation conforms to the standard for ITS submittals. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-04 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A5
 CTS 4.6.1.1.c
 CTS 4.6.1.2 a, b, c, d, and g
 CTS 4.6.1.3 a, b, and d
 ITS SR 3.6.1.1
 ITS SR 3.6.2.1

The above referenced CTS requirements are being changed to reflect the 10 CFR 50 Appendix J, Option B requirements as modified by TSTF-52. DOC A5 states this change applies only to CTS 4.6.1.1.c and 4.6.1.3; whereas, this change actually applies to all of the CTS requirements referenced. DOC A5 needs to be indicated on the CTS markup for every change to which it applies and should be revised to reference all affected CTS requirements. Comment: Revise the CTS markup and DOC A5 to address and justify all the administrative changes relative to adopting Option B.

ComEd Response to Issue

No change. As addressed in Section 5.0 DOC LA24, CTS 4.6.1.2 a, b, c, d, and g and CTS 4.6.1.3 a, b, and d are placed in a program in the Administrative Controls Chapter (ITS Specification 5.5.16, "Containment Leakage Rate Testing Program"). Section 5.0 provides the markups and justifications for these surveillances. This presentation conforms to the standard for ITS submittals. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-05 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A12
 CTS 3.6.1.1
 CTS 4.6.1.6.1
 ITS SR 3.6.1.2

CTS 4.6.1.6.1 states "Containment vessel tendons' structural integrity shall be demonstrated..." Corresponding ITS SR 3.6.1.2 states "Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program." DOC A12 states the CTS requirement is technically equivalent to the ITS requirement; however, in the CTS markup, DOC A12 is associated with CTS 3.6.1.1 when it should be placed with CTS 4.6.1.6.1, where the CTS requirement originates. Comment: Revise the submittal to address the administrative changes to CTS 4.6.1.6.1. See Comment 3.6.1-03.

ComEd Response to Issue

DOC A12 designator was added to the top of the page for CTS LCO 3.6.1.6.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-06 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A36 for ITS Section 5.0
 CTS 1.7.d
 ITS SR 3.6.1.1

CTS 1.7.d (Containment Leakage Rates) is not accounted for in the CTS markup for ITS 3.6.1. DOC A36 for ITS Section 5.0 states that this is a cross reference to another CTS and therefore can be deleted, as an administrative change. Since the CTS referenced is CTS 3.6.1.2 which is addressed in the CTS markup of ITS SR 3.6.1.1, CTS 1.7.d is not deleted but retained as ITS SR 3.6.1.2. The change should not be addressed under ITS Section 5.0, but under ITS 3.6.1. Comment: Revise the submittal to include a justification and discussion of this administrative change with the DOCs associated with ITS 3.6.1.

ComEd Response to Issue

No change. CTS Specification 1.7.d states, "Containment Integrity shall exist when the containment leakage rates are within the limits of Specification 3.6.1.2." In Section 3.6, the CTS markup for Specification 1.7.d illustrates that 1.7.d is addressed in Section 5.0. Similarly, CTS LCO 3.6.1.2 and CTS 4.6.1.1.c are both addressed in Section 5.0 for Specification 5.5.16, "Containment Leakage Rate Testing Program," as illustrated in the CTS markups for Section 3.6. Section 5.0 DOC A36 deletes CTS Specification 1.7.d because it simply provided a reference to another technical specification. The Frequency for ITS SR 3.6.1.1 states, "In accordance with the Containment Leakage Rate Testing Program." This change is appropriately contained in Section 3.6 DOC A5 for the CTS markup of CTS 4.6.1.1.c, which references the Containment Leakage Rate Testing Program. Section 3.6 DOC A12 addresses ITS SR 3.6.1.2. This presentation conforms to the standard for ITS submittals. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-07 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC M1

CTS 3.6.1.1 Actions

CTS 3.6.1.2 Actions

ITS 3.6.1 Actions

CTS 3.6.1.2 Actions restrict reactor coolant heatup beyond 200 F if the containment leakage rates are outside established limits. However, no Actions are provided in CTS 3.6.1.2 if the reactor coolant temperature is >200 F (Mode 4) and the containment leakage rates are outside established limits. In this case, CTS 3.0.3 or CTS 3.6.1.1 Actions are to be entered since they are equivalent. Because ITS 3.6.1 Actions are the same as both CTS 3.6.1.1 Actions and CTS 3.0.3, the replacement of these CTS Action requirements by the Actions of ITS 3.6.1 is actually an administrative change rather than a more restrictive change. Comment: Revise the submittal to address this change in presentation of CTS action requirements as an administrative change.

ComEd Response to Issue

Section 3.6 DOC M1 was deleted and an administrative ('A') DOC was added which states, "CTS 3.6.1.2 Actions restrict reactor coolant heatup beyond 200 F if the containment leakage rates are outside established limits. If the reactor coolant temperature were > 200 F (Mode 4) with the containment leakage rates outside established limits, the actions of CTS LCO 3.0.3 would apply. With ITS SR 3.6.1.1 not met for containment leakage rate testing, the Required Actions of ITS LCO 3.6.1 would apply. Since these actions are comparable to CTS LCO 3.0.3, this change is considered administrative in nature. This change is consistent with NUREG-1431."

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-08 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA18

DOC LA19 for ITS Section 5.0

Bases JFD B5

CTS 1.7.e

Bases Background discussion for ITS 3.6.1

As part of the definition of Containment Integrity (or what is required for an Operable containment) CTS 1.7.e requires Operable penetration sealing mechanisms. This requirement is not accounted for in the CTS markup for ITS 3.6.1 Bases, rather it is addressed by DOC LA19 for ITS Section 5.0 as being moved outside the ITS to the Containment Leakage Rate Testing Program (ITS 5.5.16). In addition, this condition for an Operable containment, which is contained in the Bases Background discussion for ITS 3.6.1, is not adopted in the Bases for ITS 3.6.1. Bases JFD B5 justifies this omission by stating this condition is not applicable to the plant design. However, DOC LA19 for ITS Section 5.0 states that CTS 1.7.e is a detail with respect to containment Operability that has to be moved outside the ITS to the Containment Leakage Rate Testing Program. Because this detail is a condition for containment Operability, it should be stated in the Bases Background discussion for ITS 3.6.1, as was done with the balance of CTS 1.7, consistent with the STS. Comment: Revise the submittal for ITS Section 3.6.1 with an LA-type justification for moving the containment operability condition of CTS 1.7.e to the Bases for ITS 3.6.1 consistent with the STS. Make appropriate changes to the CTS and STS markups and DOC LA19 for ITS Section 5.0. See Comment 3.6.1-06.

ComEd Response to Issue

Section 3.6 DOC LA18 has been revised to read, "CTS Definition 1.7 includes details with respect to Containment Integrity. Consistent with NUREG-1431, Definition 1.7 items a, b, c, and e are relocated to the Background section of ITS LCO 3.6.1 Bases. Item d is discussed in ITS Section 5.0. These details (CTS Definition 1.7 items a, b, c, and e) are attributes of containment Operability. ITS LCO 3.6.1 requires containment to be OPERABLE. ITS 3.6.1 and the definition of Operability suffice. As such, these relocated details are not required to be included in the ITS to provide adequate protection of the public health and safety. Any change to the details relocated to the Bases will be made in accordance with the Bases Control Program described in ITS Section 5.5." Section 5.0 DOC LA 19 was deleted. The Background Section of the Bases for ITS LCO 3.6.1 was revised to include item d and reads, "The pressurized sealing mechanism associated with a penetration is OPERABLE."

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|------------------------------|
| 3.6.1-09 | 11/5/97 | Open - ComEd Action Required |

NRC Description of Issue

Bases JFD C1
 CTS 4.6.1.1.c
 CTS 4.6.1.2
 STS SR 3.6.1.1
 ITS SR 3.6.1.1 and associated Bases discussion

CTS 4.6.1.1.c and 4.6.1.2 require leak rate testing in accordance with R.G. 1.163 and 10 CFR 50 Appendix J, Option B. STS SR 3.6.1.1 requires the visual examination and leakage rate testing be performed in accordance with 10 CFR 50 Appendix J as modified by approved exemptions. ITS SR 3.6.1.1 modifies STS SR 3.6.1.1 to conform to CTS 4.6.1.1.c and 4.6.1.2, as modified in the CTS markup. The STS is based on Appendix J Option A while the CTS and ITS are based on Appendix J, Option B. Changes to the STS with regards to Option A versus Option B are covered by a letter from Mr. Christopher I. Grimes to Mr. David J. Modeen, NEI, dated 11/2/95, and TSTF 52. While the ITS SR 3.6.1.1 differences from STS SR 3.6.1.1 are in conformance with the letter or TSTF 52 as modified by staff comments, the change to the ITS Bases are not in conformance. Comment: ComEd should revise the submittal, to conform to the 11/2/95 letter and to the updated TSTF 52 once the Owners Groups provides revision. Otherwise, additional justification is required for the deviations.

ComEd Response to Issue

ComEd has conformed to TSTF-52, Revision 0, which was drafted based on the 11/2/95 letter. Prior to issuance of the ITS SER, ComEd will evaluate any NRC/industry approved revisions to TSTF-52, and will incorporate applicable changes into the ITS submittal as appropriate.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-10 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD P1
 Bases for STS SR 3.6.1.1
 Bases for ITS SR 3.6.1.1

The Bases for STS SR 3.6.1.1 states the following: "Failure to meet air lock [and purge valve with resilient seal] leakage limits.. causes that to exceed limits." The Bases for ITS SR 3.6.1.1 adopts different wording at the end of this sentence and reads as follows: "...causes the limits to be exceeded." Bases JFD P1 bases this difference from the STS as a general reformatting/editorial rewording for plant specific nomenclature. However, this change is not for clarity or for plant specific nomenclature, but would be considered a generic editorial change to the STS. Comment: Revise the submittal to conform to the STS wording.

ComEd Response to Issue

No change. The Surveillance Requirements Section of the Bases for ITS LCO 3.6.1 states, "Failure to meet air lock and purge valve leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes [THAT to exceed limits]." ComEd believes that the use of the word "that" is not clear. Therefore, the sentence has been modified to read "Failure to meet air lock and purge valve leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes [the limits to be exceeded]." As Bases JFD P1 states, certain wording preferences were adopted in order to enhance the understanding by plant operators and other users. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.1-11 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC/JFD - None

CTS 4.6.1.2.e

CTS 4.6.1.2.f

ITS SR 3.6.2.1

ITS SR 3.6.3.6 and SR 3.6.3.7

CTS 3/4.6.1.2 has not been retained as a separate LCO in the ITS. CTS 4.6.1.2.e states "Air locks shall be tested and demonstrated OPERABLE". This requirement is now ITS SR 3.6.2.1. CTS 4.6.2.1.f states that "Purge supply and exhaust isolation valves...shall be tested and demonstrated OPERABLE..." per CTS requirements which are now ITS 3.6.3.6 and SR 3.6.3.7. Therefore, these CTS requirements are not relocated to ITS 5.5.16 as is shown on the CTS markup. Comment: Revise the submittal to show the CTS 4.6.1.2.e and 4.6.2.1.f are relocated to ITS 3.6.2 and 3.6.3 respectively and revise the CTS markups for ITS 3.6.2 and 3.6.3 respectively to include these marked up pages. See Item Numbers 3.6.2-4 and 3.6.3-4.

ComEd Response to Issue

No change. CTS 4.6.1.2.e states, "Air locks shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.3. CTS 4.6.1.3.a, b, and d delineate how the air lock shall be demonstrated OPERABLE. The details of what constitutes OPERABILITY are addressed in Specification 5.5.16 as the CTS markup illustrates. Likewise, CTS 4.6.1.2.f (not 4.6.2.1.f) states, "Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.7.3 or 4.6.1.7.4." CTS 4.6.1.7.3 and CTS 4.6.1.7.4 delineate details of OPERABILITY. These details are relocated to the TRM as specified in LCO JFD LA16. Therefore, the CTS Markups for CTS 4.6.1.3 (ITS SR 3.6.2.1), CTS 4.6.1.7.3 (ITS SR 3.6.3.7), and CTS 4.6.1.7.4 (ITS SR 3.6.3.6) are appropriate and correct. This presentation conforms to the standard for ITS submittal. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A5

CTS 4.6.1.3.a, b, and d

ITS SR 3.6.2.1

Comment: See Comment 3.6.1-04

ComEd Response to Issue

No change. ComEd continues to pursue this change. (See ComEd Response to RAI 3.6.1-04.)

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-02 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A6
 JFD P5
 STS 3.6.2 Actions Note 3
 ITS 3.6.2 Actions Note 3

STS 3.6.2 Actions Note 3 states: "Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment" when air lock leakage results in exceeding the overall containment leakage rate." ITS 3.6.2 ACTIONS Note 3 changes the word "when" to "if". JFD P5 bases this difference on achieving consistency with changes made to other sections. This justification is inadequate and the staff considers this change to be a generic change to the STS. Comment: Revise the Note to adopt the STS wording.

ComEd Response to Issue

The Note was revised to adopt the STS wording.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-03 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A11
 DOC L7
 CTS 3.6.1.3 Action a.1
 CTS 3.6.1.3 Action b
 ITS 3.6.2 Required Actions A.1 and C.2

CTS 3.6.1.3. Actions a.1 and b require an air lock door to be maintained closed; with the time requirement in which to complete the action to be "maintain closed" is up to 24 hours. ITS 3.6.2 Required Actions A.1 and C.2 state that the air lock door is to be verified closed within a one hour. The change to CTS 3.6.1.3 ACTION a.1 is justified as L.7, Action b is justified as A.11. The justification provided with A.11 is "Not used." Also, these are more restrictive CTS changes (24 hours to 1 hour), not administrative (A.11) and less restrictive (L.7). Comment: Revise the submittal and provide additional discussion and justification for this more restrictive change.

ComEd Response to Issue

Section 3.6 DOC A11 for CTS 3.6.1.3 Action b has been changed to DOC L7, consistent with CTS Action a.1. ComEd maintains that this change is "less restrictive" in that the action to "maintain at least the OPERABLE/one air lock door closed" can be interpreted to mean "immediately" take action, whereas in ITS 3.6.2 Required Action A.1 and C.2, this requirement is changed to "verify" and a 1 hour time period is specified.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-04 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC M1
 ITS 3.6.2 Actions Note 3
 CTS 3.6.1.2 Actions
 ITS 3.6.2 Actions
 CTS 4.6.1.2.e
 ITS SR 3.6.2.1

Because CTS 4.6.1.2.e corresponds to ITS SR 3.6.2.1 (See Comment 3.6.1-11), CTS 3.6.1.2 Actions also apply to ITS 3.6.2. Comment: Revise the CTS markup for ITS 3.6.2 to include CTS 3.6.1.2 Actions. See Comments 3.6.1-7 and 3.6.1-11.

ComEd Response to Issue

No change. CTS 4.6.1.2.e states, "Air locks shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.3." CTS 4.6.1.3 (not CTS 3.6.1.2) states, "Each containment air lock shall be demonstrated OPERABLE ..." CTS 4.6.1.3 corresponds to ITS SR 3.6.2.1 as illustrated in the CTS markup. This presentation conforms to the standard for ITS submittals. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-05 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA2
 DOC L1
 DOC L2
 CTS 3.6.1.3.a
 ITS 3.6.2 Actions Note 1
 ITS 3.6.2 Action A Note 2
 ITS 3.6.2 Action B Note 2

CTS 3.6.1.3.a states that the containment airlock doors are to be closed except when the air lock is being used for normal transit entry and exit, during which at least one door must remain closed. This information according to DOC LA2 is relocated to the Bases. This is not entirely correct. The information with regards to using the air lock doors for normal entry and exit appears to be retained, with clarifications, in ITS 3.6.2 Actions Note 2, ITS 3.6.2 Action A Note 2 and ITS 3.6.2 Action B Note 2. Thus it should be considered as an extension of this requirement to the CTS 3.6.1.3 Actions. Comment: Revise CTS 3.6.1.3.a to reflect this Administrative change. Provide additional discussion and justification for this change.

ComEd Response to Issue

No change. There is a distinct difference between OPERABILITY requirements and Required Actions, including Notes in Required Actions. The statement in CTS 3.6.1.3.a which states, "Each containment air lock shall be OPERABLE with both doors closed except when the air lock is being used for normal transit entry and exits through the containment, then at least one air lock door shall be closed," describes what constitutes containment air lock OPERABILITY. As addressed in Section 3.6 DOC LA2, these details are being relocated to the Surveillance Requirements Section of the Bases for ITS LCO 3.6.2. Since Surveillance Requirements (SRs) are the mechanisms by which OPERABILITY, and therefore compliance with a specification, is demonstrated, this change is appropriate. Correlating this information with Actions would be inappropriate since Actions are only entered when an LCO/SR is not met. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-06 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA18
 CTS 1.7.c
 ITS SR 3.6.2.1
 ITS SR 3.6.2.2

CTS 1.7.c has been relocated to ITS B3.6.1 Bases-BACKGROUND per justification LA.18. While it is acceptable to relocate CTS 1.7 to the Bases, CTS 1.7.c also refers to the requirements of CTS 3.6.1.3 which would translate to ITS SRs 3.6.2.1 and 3.6.2.2. Thus the markup of CTS 1.7 should also be included in the CTS markup for ITS 3.6.2. Comment: Provide the appropriate markup of CTS 1.7 in the ITS 3.6.2 CTS markup. Provide additional discussion and justification for this administrative change.

ComEd Response to Issue

No change. CTS Specification 1.7.c references CTS LCO 3.6.1.3, which by definition includes Surveillance Requirements. The CTS markup for 4.6.1.3 appropriately addresses ITS SR 3.6.2.1 as designated by Section 3.6 DOC A5 and DOC A6. This presentation conforms to the standard for ITS submittals. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-07 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC L2
 CTS 3/4.6.1.3 Actions
 ITS 3.6.2 Action A Note 2

Based on the discussion in Comment 3.6.2-5, the addition of a 7-day limit for entry and exit with one or more air locks having one air lock door inoperable could be considered as a more restrictive change, since the CTS would allow an indefinite period of time. Comment: Provide additional discussion and justification for this more restrictive change. See Item Number 3.6.2-5.

ComEd Response to Issue

No change. Per CTS 3.6.1.3 Action a, with one air lock door inoperable, the operable air lock door must be maintained closed. As addressed in Section 3.6 DOCs L1, L2, and L7, CTS 3.6.1.3 actions do not contain provisions for opening a door that is required to be closed to comply with the required actions. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|------------------------------|
| 3.6.2-08 | 11/5/97 | Open - ComEd Action Required |

NRC Description of Issue

JFD-Bases C.1
 CTS 4.6.1.2.e
 CTS 4.6.1.3.a
 CTS 4.6.1.3.b
 CTS 4.6.1.3.d
 ITS SR 3.6.2.1 and associated Bases

Comment: See Comment 3.6.1-09.

ComEd Response to Issue

ComEd has conformed to TSTF-52, Revision 0, which was drafted based on the 11/2/95 letter. Prior to issuance of the ITS SER, ComEd will evaluate any NRC/industry approved revisions to TSTF-52, and will incorporate applicable changes into the ITS submittal as appropriate.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.2-09 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD C2
 STS SR 3.6.2.2 and associated Bases
 ITS SR 3.6.2.2 and associated Bases

STS SR 3.6.2.2 requires verifying only one door in the air lock will open at a time at six month intervals. The interval is modified in ITS SR 3.6.2.2 from 6 months to 24 months. This modification is in accordance with TSTF-17; however, the Bases changes are not in accordance with TSTF-17. Comment: Revise the ITS Bases to be in accordance with TSTF-17 or justify the deviations.

ComEd Response to Issue

Insert B 3.6-27C in the Surveillance Requirements Section of the Bases for ITS LCO 3.6.2 has been modified to conform to TSTF-17, Revision 1, and reads, "... used for entry and exit (procedures require strict adherence to single door opening), this test is only required to be performed every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the Surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience." Additionally, Bases JFD C2 was revised to read, "This change is consistent with NUREG-1431, as modified by TSTF-17, Revision 1."

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.2-10 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

JFD P15

Bases discussion of ITS 3.6.2 Required Actions A.1, A.2 and A.3, B.1, B.2, and B.3, and C.1, C.2 and C.3

The listed Bases discussions differ from the STS to clarify the actions to be taken for two inoperable air lock doors in the same air lock. The staff has reviewed the changes and finds that it reiterates information already included in the Bases and other sections of the ITS. In addition, the staff considers this change to be generic. This is not a justifiable plant-specific or editorial difference from the STS. Comment: Revise the ITS Bases to delete the proposed clarification.

ComEd Response to Issue

The Bases for ITS LCO 3.6.2 have been revised to withdraw the change associated with Bases JFD P15.

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.3-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A17

CTS 3.6.3

DOC LA1

CTS 3.6.3 Table 3.6-11

JFD B6

ITS LCO 3.6.3 Note

JFD C3

STS LCO 3.6.3

Bases JFD C3

Bases discussion of LCO for ITS 3.6.3

Bases JFD P5

ITS LCO 3.6.3 contains a note not contained in CTS 3.6.3 or STS LCO 3.6.3. This note exempts the feedwater isolation valves (FWIVs), the FWIV bypass valves, the feedwater preheater bypass valves and the feedwater tempering valves from this specification. The justifications (DOC A3, JFD B6, and Bases JFD P5) state that the containment isolation function for these valves is covered by ITS LCO 3.7.3 and JFD C3 and Bases JFD C3 state that this difference change is in accordance with TSTF-44 Rev.1. The staff has rejected TSTF 44 Rev. 0 and TSTF 44 Rev. 1 has not been submitted to the staff for review. The staff considers this change to be a generic change that is beyond the scope of review for this conversion. Comments: Delete this generic change.

ComEd Response to Issue

TSTF-44 has been withdrawn from the ITS submittal. ComEd is deleting LCO 3.7.3, "FW Isolation Valves," from the ITS submittal and retaining the requirements for feedwater valves in ITS LCO 3.6.3, "Containment Isolation Valves," consistent with Byron/Braidwood Current Licensing Basis.

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-02 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A18
ITS SR 3.6.3.3
DOC L11
ITS SR 3.6.3.4
CTS 4.6.1.1.e
ITS SR 3.6.3.8
CTS 4.6.3.2

CTS 4.6.1.1.a, CTS 4.6.3.2, and various other ITS 3.6.3 SRs, state the requirements to verify that valves are demonstrated Operable. The CTS requirements have been revised to only require these surveillances for valves that are not locked, sealed, or otherwise secured in position. This change reduces the number of valves subjected to these surveillance requirements. In some cases this change is Designated Administrative (DOC A18) and in others less restrictive (DOC L11). The staff considers this change Less Restrictive in every case because this exempts previously tested valves from the surveillance. Comment: Revise the submittal to treat all instances of this change as less restrictive and add additional justification and discussion as appropriate.

ComEd Response to Issue

CTS SR 4.6.2.1.c.1, SR 4.6.2.2.c, and SR 4.6.3.2 have been revised to add the phrase, "that is not locked, sealed, or otherwise secured in position." The CTS markups for these SRs have been revised to designate them as 'less restrictive'. Therefore, all 'A18' designators have been replaced by 'L11' designators, and Section 3.6 DOC A18 was deleted. Section 3.6 DOC L11 was revised to state, "CTS SR 4.6.1.1.a, SR 4.6.2.1.c.1), SR 4.6.2.2.c and SR 4.6.3.2 require periodic verification that the valves are in their correct position. ITS requires the same verification, but excludes valves that are locked, sealed, or otherwise secured in their correct position. This allows these valves, which are secured in their required position under administrative controls, to be exempted from the surveillance. These valves are secured in their accident position and are not required to actuate to perform their safety function. Proper positioning of valves is administratively controlled by the Out of Service Program in conjunction with the Locked Equipment and Caution Card Program. These programs ensure valves are maintained in their proper position by requiring independent verification of safety-related or other important equipment, documentation of the position of locked equipment in a surveillance program, and periodic reviews of equipment normally required to be locked. Exempting these valves that are secured in their required position is perceived as the intent of the CTS wording, and therefore, the addition of the phrase more accurately reflects this intent."

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-03 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A29
JFD P5
CTS 3.6.3 Actions
STS 3.6.3 Actions Notes and associated Bases
ITS 3.6.3 Actions Notes and associated Bases.

Comment: See Comment 3.6.2-02

ComEd Response to Issue

The Note was revised to adopt the STS wording.

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.3-04 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC MI
ITS 3.6.3 Actions Note 4
CTS 3.6.1.2 Actions
ITS SR 3.6.3.7
CTS 4.6.1.2.f
ITS SR 3.6.3.8
ITS 3.6.3 Actions

Because CTS 4.6.1.2.f applies to ITS SR 3.6.3.7 and SR 3.6.3.8 (See Comment 3.6.1-11), CTS 3.6.1.2 Actions also apply to ITS 3.6.3. See Comment 3.6.1-7. Comments: Revise the CTS markup for ITS 3.6.3 to include CTS 3.6.1.2 Actions. See Comment 3.6.1-7 and 3.6.1-11.

ComEd Response to Issue

No change. ComEd continues to pursue this change. (See ComEd Response to RAI 3.6.1-11.)

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-05 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA4
 CTS 4.6.1.7.1
 Bases JFD P7
 STS SR 3.6.3.1 and associated Bases
 CTS 3.6.1.7.a
 ITS SR 3.1.3.1 and associated Bases

CTS 3.6.1.7 and CTS 4.6.1.7.1 are specific in how the 48 inch purge valves are to be assured of not inadvertently opening; each purge valve is required to have the power removed. STS/ITS SR 3.6.3.1 requires that these valves be sealed closed. The Bases for STS SR 3.6.3.1 states that a purge valve that is sealed closed must have motive power to the valve operator removed. This can be accomplished by de-energizing the source of electric power or by removing the air supply to the valve operator. The Bases for ITS SR 3.6.3.1 deletes the phrase "removing the air supply to the valve operator" and replaces it with "installing a mechanical block." Bases JFD P7 justifies this change on plant specific design, analysis, and terminology details. Since the CTS only talks about power removal, not installation of mechanical block, this justification is insufficient. Finally, the justifications given by DOC LA4 and Bases JFD P7 do not specify whether the staff has approved using mechanical blocks as an alternative to power removal. Comment: Delete the ITS Bases change and conform to the CTS or STS, or provide additional discussion and justification to show that using mechanical blocks has been approved by the staff.

ComEd Response to Issue

No change. The option of installing a mechanical block as a means of removing motive power to the valve operator of a containment purge valve that is sealed closed is discussed in the Byron/Braidwood UFSAR Section 6.2.4, "Containment Isolation System," and states, "The normal containment purge valves are locked closed by the administrative procedure of interrupting power to the valve at the circuit breaker (i.e., the circuit breaker is racked out) and tagging the breaker "out of service" (OOS). Inadvertent operation of the purge valves requires violation of procedures prohibiting both the operation of tagged-out equipment and the containment purge system. Tagging out at the breaker is considered equivalent to a mechanical lock because in both instances positive action is used to prevent the valve from receiving power and an administrative procedure is required to return the breaker to service. At Braidwood, valves VQ001A/B and VQ002A/B may have exterior mechanical stops mounted to the valve. These valve stops may be used as an additional method of locking the valves closed." In addition, the Bases for CTS Specification 3/4.6.1.7 states, "To provide assurance that the 48-inch containment valves cannot be inadvertently opened, the valves are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevents power from being supplied to the valve operator." This page of the Bases is an original page of CTS approved by the Staff when issuing the Byron and Braidwood operating licenses. ComEd continues to pursue this change.

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-06 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA18
ITS SR 3.6.3.1
CTS 1.7.a
ITS SR 3.6.3.2
CTS 3.6.1.1.a
ITS SR 3.6.3.3
CTS 3.6.1.7
ITS SR 3.6.3.4
CTS 4.6.1.7.1
CTS 4.6.1.7.2

CTS 1.7.a has been moved to Bases Background discussion of ITS 3.6.1 according to DOC LA18. While it is acceptable to relocate CTS 1.7 to the Bases, CTS 1.7.a also refers to the requirements of CTS 3.6.1.1.a, CTS 3.6.1.7, CTS 4.6.1.7.1 and CTS 4.6.1.7.2 which translates to ITS SR 3.6.3.1, SR 3.6.3.2, SR 3.6.3.3, and SR 3.6.3.4. Thus the markup of CTS 1.7 should also be included in the CTS markup of ITS 3.6.3. Comment: Provide the appropriate markup of CTS 1.7 in the ITS 3.6.3 CTS markup. Provide additional discussion and justification for this administrative change.

ComEd Response to Issue

No change. This presentation conforms to the standard for ITS submittals. (See ComEd Response to RAIs 3.6.1-06 and 3.6.2-06.)

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-07 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC L12

STS SR 3.6.3.5 and associated Bases

JFD C6

ITS SR 3.6.3.5 and associated Bases

Bases JFD C6

Bases discussion of LCO for ITS 3.6.3

CTS 4.6.3.3

CTS 4.6.3.3 requires the isolation time of each power operated or automatic containment isolation valve be determined to be within limits. STS SR 3.6.3.5 states basically the same thing but the "or" is changed to "and". STS SR 3.6.3.5 has been modified by TSTF 46 Rev. 1 which clarifies that the SR only applies to automatic power operated valves. ITS SR 3.6.3.5 and the Bases discussions of LCO for ITS 3.6.3 and ITS SR 3.6.3.5 have been modified to reflect TSTF 46 Rev. 0, as justified by DOC L12. Since TSTF 45 Rev. 0 was modified by the staff and resubmitted and approved as TSTF 46 Rev. 1, the changes proposed in the ITS differ from the STS, as revised. Comment: Change the CTS markup, ITS SR markup and ITS Bases markup to conform to the approved TSTF 46 Rev. 1 or provide additional discussion and justification for the deviations.

ComEd Response to Issue

TSTF-46, Revision 0, has been withdrawn from the ITS submittal. ComEd, however, continues to pursue this change on a plant specific basis for the following reasons. The references to "manual," "remote-manual," "power-operated," "check," and "automatic" is not consistent within the STS. Byron/Braidwood plant specific terminology distinguishes between the classification of valves designated as "power operated" and "automatic." Automatic valves refer to those valves that require a motive force to actuate, such as air or electric, and receive an automatic actuation signal. Automatic air operated valves and automatic electric operated valves fall into this category. Power operated valves, on the other hand, require a motive force to actuate, such as air or electric, but do not receive an automatic actuation signal. Air power operated valves and electric power operated valves fall into this category. Adopting the change to SR 3.6.3.5 in TSTF-46, Revision 1, which states, "Verify the isolation time of each automatic power operated containment isolation valve is within limits" would inappropriately include power operated containment isolation valves (i.e., valves that do not receive a containment isolation signal), which is not the intent. Therefore, deleting reference to power operated isolation valve time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis, and is consistent with plant specific terminology.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-08 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

JFD B3
 Bases JFD B3
 Bases JFD P13
 STS 3.6.3 Action E
 STS SR 3.6.3.1 and associated Bases discussions
 ITS 3.6.3 Action D
 ITS SR 3.6.3.1 and associated Bases discussions

STS 3.6.3 RA E.1, E.2 and E.3 have been revised in ITS 3.6.3 ACTION D to delete the option of isolating a penetration flow path with a purge valve not within the leakage limits and associated RAs. The only option is the current licensing basis of restoring the valve to OPERABLE status in 24 hours or begin an orderly plant shutdown. Also, the STS SR 3.6.3.1 exception for opening one purge valves while in Condition F is deleted. Justification B.3, Bases B.3 and Bases P.13 state this exception is already accommodated in Condition A Required Actions. This is not understood because if a purge valve is leaking, then Condition A cannot be entered. The justification must be further explained. Comment: Provide additional discussion and justification for this CTS change.

ComEd Response to Issue

"Condition A" has been changed to "Condition D" in Section 3.6 LCO JFD B3 and Bases JFD B3. The JFDs have been revised to state, "This exception is adequately addressed by Condition D Required Actions, without the necessity for the complexity introduced by this exception." The exception in SR 3.6.3.1 is unnecessary since SRs do not have to be performed on inoperable equipment or components, i.e., when Condition D is entered.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-09 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

JFD-P11
 Bases JFD P20
 Bases P22
 Bases P24
 STS 3.6.3 Required Action A.2 Completion Time
 STS SR 3.6.3.4 and associated Bases
 ITS 3.6.3 Required Action A.2 Completion Time
 ITS SR 3.6.3.4 and associated Bases

STS 3.6.3 Required Action A.2 Completion Time and STS SR 3.6.3.4 Frequency state the following: "Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days..." ITS 3.6.3 Required Action A.2 Completion Time and ITS SR 3.6.3.4 Frequency, add the word "once" to the Completion Time and Frequency to change the STS wording to: "Prior to entering MODE 4 from MODE 5 if not performed once within the previous 92 days..." The staff considers this to be a generic change which is beyond the scope of review for this conversion. Comment: Revise the submittal to adopt the STS wording.

ComEd Response to Issue

Per ComEd response to RAI 3.1-01, ComEd submitted a traveler at the November 1997 Westinghouse Owner's Group (WOG) ITS meeting. The Staff's comment in RAI 3.1-01 for SR 3.1.6.1 was that this change was a legitimate use of the word "once" in an SR Frequency. A final disposition of the traveler is to be determined at the February 1998 WOG ITS meeting.

Response to NRC RAI Dated 11/05/9769-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.3-10 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD C4
Bases for STS 3.6.3
Bases for ITS 3.6.3

STS 3.6.3 Required Action C.1 Completion Time has been modified by TSTF-30 Rev. 2. While ITS 3.6.3 Required Action C.1 Completion Time incorporates TSTF-30 Rev. 2 changes, the Bases for ITS 3.6.3 does not fully incorporate all of the STS Bases changes associated with TSTF-30 Rev. 2. Comment: Revise the Bases for ITS 3.6.3 to incorporate the Bases changes associated with TSTF-30 Rev. 2 or provide additional discussion and justification for the deviations.

ComEd Response to Issue

Bases JFD C4 designator was added to ITS SR 3.6.3.6 for "(Ref. 5)" in the Surveillance Requirements Section of the Bases for ITS LCO 3.6.3. In addition, Bases JFD C4 was revised to read, "This change is consistent with NUREG-1431, as modified by TSTF-30, Revision 2."

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.3-11 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD C5
Bases for STS SR 3.6.3.3 and SR 3.6.3.4
Bases for ITS SR 3.6.3.3 and SR 3.6.3.4

STS SR 3.6.3.3 and SR 3.6.3.4 have been modified by TSTF 45 Rev. 1. While ITS SR 3.6.3.3 and SR 3.6.3.4 have incorporated the changes associated with TSTF 45 Rev. 1, the Bases for STS SR 3.6.3.3 and SR 3.6.3.4 do not fully incorporate all of the Bases changes associated with TSTF 45 Rev. 1. Comment: Revise the Bases for STS SR 3.6.3.3 and SR 3.6.3.4 to incorporate the Bases changes associated with TSTF 45 Rev. 1 or provide additional discussion and justification for the deviations.

ComEd Response to Issue

TSTF-45, Revision 1, added an Insert in the Surveillance Requirements Section of the Bases for ITS LCO 3.6.3 stating, "This SR does not apply to valves that are locked, sealed, or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing, or securing." TSTF-45, Revision 1, was incorporated by adding the Insert to the Bases for SR 3.6.3.3 and SR 3.6.3.4.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-12 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD P8

Bases discussion of LCO for STS 3.6.3

Bases discussion of LCO for ITS 3.6.3

The third paragraph of the Bases discussion of LCO for STS 3.6.3 states "The normally closed isolation valves... are those listed in Reference 1." This paragraph deals with those containment isolation valves that are required to be closed during an accident and are in the closed position during normal operation. This paragraph is omitted from the Bases discussion of LCO for ITS 3.6.3 and the STS Bases markup indicates this omission is justified by Bases JFD P8 which does not address this subject. Bases JFD P8 also states there is no requirement for an isolation valve's Operability to be tied to the integrity of a closed system. This is incorrect. 10 CFR 50 Appendix A GDC 55 through 57, and the definition of Containment Integrity (CTS 1.7.a) tie the Operability of isolation valves to the integrity of a closed system. Therefore, the STS wording is correct and should be retained. In addition, the staff finds this change to be generic and beyond the scope of review for this conversion. Comment: Delete this generic change.

ComEd Response to Issue

No change. The LCO Section of the Bases for STS LCO 3.6.3 states, "The normally closed isolation valves are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. These passive isolation valves/devices are those listed in Reference 1." This paragraph was deleted by Bases JFD P8 since there is no requirement in ITS for a normally closed automatic valve to be de-activated and secured in its closed position. Implementing this requirement, would in fact, render the Emergency Core Cooling System inoperable. Additionally, 10 CFR 50 Appendix A GDC 55-57 require that each line that ... shall be provided with containment isolation valve(s) ... The converse is not true - There is no requirement tying an isolation valve's operability to the integrity of a closed system. Furthermore, CTS Definition 1.7.a specifies operability requirements for containment INTEGRITY, not containment isolation valves (CIVs). ITS LCO 3.6.3 which addresses the operability of CIVs does not specify any requirements for the integrity of closed systems. ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.3-13 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD P12

Bases discussion of Applicable Safety Analyses for STS 3.6.3

Bases discussion of Applicable Safety Analyses for ITS 3.6.3

The Bases for ITS 3.6.3 does not adopt the last sentence of the first paragraph of the Bases discussion of Applicable Safety Analyses for STS 3.6.3. This sentence states "Therefore, the safety analyses of any event requiring isolation of containment is applicable to this LCO." Bases JFD P12 bases this omission on the fact that ITS 3.6.3 Applicability is limited to Modes 1, 2, 3, and 4, and that ITS 3.9.4 addresses containment isolation requirements outside these modes. (Note, this is clearly stated in the Bases discussion of Applicability.) The omitted sentence appears to assume that the analyses referenced are only applicable during Modes 1, 2, 3, or 4 in the ITS which may not be true. The staff considers this omission to be a generic difference from the STS and outside the scope of an ITS conversion. Comment: Revise the submittal to adopt the omitted sentence.

ComEd Response to Issue

The omitted sentence was adopted in the Background Section of the Bases for ITS LCO 3.6.3, and Bases JFD P12 was deleted.

Response to NRC RAI Dated 11/05/9709-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|------------------------------|
| 3.6.3-14 | 11/5/97 | Open - ComEd Action Required |

NRC Description of Issue

Bases JFD P20

Bases JFD P24

Bases for STS 3.6.3 Required Action B.1

Bases for ITS 3.6.3 Required Action B.1

The Bases for ITS 3.6.3 Required Action B.1 differs from the STS as discussed in Bases JFDs P20 and P24. These modifications incorporate portions of TSTF-145, as well as other changes. The staff has accepted TSTF-145 Rev. 1 as modified by staff comments. Comment: Revise the Bases to adopt STS Bases changes of TSTF-145 Rev. 1 as supplemented by staff comments or provide additional discussion and justification for deviations.

ComEd Response to Issue

Subsequent to the NRC Staff approving TSTF-145, Revision 1, the industry withdrew the traveler at the 10/1/97 NRC/TSTF meeting. NUREG LCO 3.6.3 Condition A, for one containment isolation valve inoperable, requires verification that the affected penetration flow path is isolated once per 31 days for isolation devices outside containment and prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment. The traveler proposed adding this requirement to Condition B for two containment isolation valves inoperable. This is an inappropriate change since whenever Condition B is entered for two valves inoperable, Condition A will always be entered for one valve inoperable. Duplicating requirements in Conditions is not consistent with NUREG philosophy. ComEd did not adopt TSTF-145, Revision 1, and continues to pursue the Bases changes plant specifically.

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.6-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A18

DOC L11

CTS 4.6.2.1.c.1

ITS SR 3.6.6.5

Comment: See Comment 3.6.3-02

ComEd Response to Issue

CTS SR 4.6.2.1.c.1, SR 4.6.2.2.c, and SR 4.6.3.2 have been revised to add the phrase, "that is not locked, sealed, or otherwise secured in position." The CTS markups for these SRs have been revised to designate them as 'less restrictive'. Therefore, all 'A18' designators have been replaced by 'L11' designators, and Section 3.6 DOC A18 was deleted.

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.6-02 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA7
CTS 4.6.2.1.b
Bases for ITS SR 3.6.6.4

The markup of CTS 4.6.2.1.b shows that the system alignment ("that on recirculation flow") for the containment spray pump test has been removed from CTS. DOC LA7 states that this system alignment detail is relocated to the TRM. However, the Bases for ITS SR 3.6.6.4 describes the system alignment as "They [pumps] are tested on recirculation flow." Comment: Revise DOC LA7 to show that the test flow path has also been relocated to the Bases for ITS SR 3.6.6.4.

ComEd Response to Issue

Section 3.6 DOC LA7 has been revised to read, "CTS SR 4.6.2.1.b details the required developed head for the containment spray pump and test flow path during performance of the Surveillance. These details are to be relocated to the Bases. These details are not necessary to ensure the Operability of the containment spray pumps. The requirements of ITS LCO 3.6.6, "Containment Spray and Cooling Systems," and associated SRs are adequate to ensure the containment spray pumps are Operable. As such, these details are not required to be in the TS to provide adequate protection of the public health and safety. Relocating these details to the Bases maintains the consistency with NUREG-1431. Any change to these details will be made in accordance with the Bases Control Program described in ITS Section 5.5."

| NRC RAI Number | NRC Issued Date | RAI Status |
|-----------------------|------------------------|----------------------------|
| 3.6.6-03 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC L8
CTS 3.6.2.3 Actions
JFD P3
STS 3.6.6 Actions A and C and associated Bases
Bases JFD P3
ITS 3.6.6 Actions A and C and associated Bases
CTS 3.6.2.1 Action

Consistent with CTS, ITS 3.6.6 Required Actions A.1 and C.1 specify a 7-day Completion Time, instead of the 72-hour Completion Time of the STS, in the event of one inoperable containment spray train or one or more inoperable containment cooling trains, respectively. The ITS also specifies a 14-day Completion Time measured from discovery of failure to meet the LCO, instead of the 14-day Completion Time of the STS. While the Completion Time change from 72 hours to 7 days is acceptable based on current licensing basis, the change from 10 to 14 days is unacceptable. The justifications provided (L.8, P.3 and Bases P.3) are inadequate, and are not based on current licensing basis. Thus, the staff considers the change to be a generic change that is beyond the scope of review for this conversion. Comment: Delete this generic change.

ComEd Response to Issue

No change. ITS LCO 3.6.6 requires that with one containment spray (CS) train inoperable or with one or more containment cooling trains inoperable, restore CS train to operable status in 7 days AND 14 days from discovery or failure to meet the LCO. ITS LCO 3.8.1 requires that with one or more buses with one required qualified circuit inoperable, restore required qualified circuit(s) to operable status in 72 hours AND 6 days from discovery of failure to meet the LCO. The purpose of the second Completion Time (i.e., ... days from discovery ...) is to prevent alternating between Conditions in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. In the case of CS and Containment Cooling, ComEd has conformed to the NUREG philosophy of allowing alternating only once between a CS train inoperability (7 day Required Action) and one or more Containment Cooling train inoperabilities (7 day Required Action). This results in a 14 day Completion Time, rather than the STS 10 day Completion Time. ComEd believes that this change is justifiable based on NUREG philosophy and continues to pursue this change.

Response to NRC RAI Dated 11/05/97

09-Dec-97

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.7-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC A18
DOC L11
CTS 4.6.2.2.c
ITS SR 3.6.7.4

Comment: See Comment 3.6.3-02

ComEd Response to Issue

CTS SR 4.6.2.1.c.1, SR 4.6.2.2.c, and SR 4.6.3.2 have been revised to add the phrase, "that is not locked, sealed, or otherwise secured in position." The CTS markups for these SRs have been revised to designate them as 'less restrictive'. Therefore, all 'A18' designators have been replaced by 'L11' designators, and Section 3.6 DOC A18 was deleted. (Correction Note: This RAI was labeled 3.7.7-01 instead of 3.6.7-01.)

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.7-02 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD P7
Bases Background discussion for STS 3.6.7
Bases Background discussion for ITS 3.6.7
Bases for ITS SR 3.6.7.5

The last sentence of the third paragraph in the Bases Background discussion for STS 3.6.7 states "The eductors are designed to ensure that the pH of the spray mixture is between 8.5 and 11.0." The Bases Background discussion for ITS 3.6.7 omits this sentence. Bases JFD P7 provides no technical basis for this change. Note that the Bases for ITS SR 3.6.7.5 basically makes the same statement, but without the limits. The omitted Background statement is necessary to describe the design characteristics of the spray additive system and thus is required. Comment: Revise the submittal to adopt the STS wording with the STS pH limits of 8.5 and 11.0 or specify the plant specific limits. Provide additional discussion and justification as necessary.

ComEd Response to Issue

The omitted sentence in the Background Section of the Bases for ITS LCO 3.6.7 was adopted with plant specific pH values and reads, "The eductors are designed to ensure that the pH of the spray mixture is between 8.5 and 12.8." (Correction Note: This RAI was labeled 3.7.7-02 instead of 3.6.7-02.)

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.8-01 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC LA14

ITS SR 3.6.8.1 and associated Bases

CTS 4.6.4.2.a

ITS SR 3.6.8.2 and associated Bases

CTS 4.6.4.2.b

ITS SR 3.6.8.3 and associated Bases

CTS 4.6.4.2.a and b specifies surveillance requirements for hydrogen recombiner testing pertaining to (1) rate of heater sheath temperature increase and power consumption; (2) channel calibration of instrumentation and controls; (3) attributes of a visual examination; and (4) required heater phase resistance. According to DOC LA14, details of these four surveillance requirements have been moved to either the Bases or the TRM. Items 1, 3, and 4 have been relocated to the Bases. In addition, procedural details for determining power consumption (item 1) are moved to the TRM. DOC LA14 does not justify placing this requirement in the TRM, as opposed to the Bases. In addition, the channel calibration requirement, item 2, cannot be found in the Bases for ITS 3.6.8, as specified in DOC LA14. Comment: Revise the Bases for ITS 3.6.8 to include the channel calibration details, as specified in the CTS 4.6.4.2.b.1 and DOC LA14. Provide additional discussion and justification for moving the channel calibration power consumption procedural details.

ComF-d Response to Issue

Section 3.6 DOC LA14 was revised to read, "CTS SR 4.6.4.2 details specific acceptance criteria for hydrogen recombiner testing: 1) rate of heater sheath temperature increase and power consumption; 2) channel calibration of instrumentation and controls; 3) attributes of a visual examination; and 4) required heater phase resistance. The rate of heater sheath temperature increase and power consumption, the attributes of the visual inspection, and the required heater phase resistance details are relocated to the ITS Bases. The channel calibration of instrumentation and controls is relocated to the TRM. These details are not necessary to ensure the Operability of the Hydrogen Recombiner Systems. The requirements of ITS LCO 3.6.8, Hydrogen Recombiners," and associated SRs are adequate to ensure the Hydrogen Recombiner Systems are Operable. As such, these details are not required to be in the TS to provide adequate protection of the public health and safety. The relocation of these details maintains the consistency with NUREG-1431. Any change to these details in the Bases will be made in accordance with the Bases Control Program described in ITS Section 5.5. Any change to these details in the TRM will be made in accordance with 10 CFR 50.59."

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.8-02 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

DOC L9

JFD B1

Bases JFD B1

Bases JFD B2

Bases JFD P7

CTS 3.6.4.2 Action

ITS 3.6.8 Action B

Bases for ITS 3.6.8 Required Actions B.1, B.2, and C.1

CTS 3.6.4.2 Actions do not address the condition in which both hydrogen recombiners are inoperable. Thus, CTS would require a plant shutdown in accordance with CTS 3.0.3. ITS 3.6.8 Action B allows 7 days of operation in this condition, provided the hydrogen control function is maintained. The justification given in DOC L9 for this relaxation is unacceptable because there is no evidence that the four alternate hydrogen control functions, listed in the proposed Bases for ITS 3.6.8 Actions, have been previously accepted by the staff. In addition, how does one perform a surveillance on natural convection to verify that it is Operable as an alternate hydrogen control function. Also, containment spray does not reduce or facilitate hydrogen gas concentration. If ComEd cannot reference documentation showing that the NRC staff accepted these alternate hydrogen control functions, then ITS 3.6.8 Action B cannot be used. Therefore, the CTS requirement for an LCO 3.0.3 shutdown should be retained. Comment: Provide additional discussion and justification for this less restrictive change. See Comment 3.6-02.

ComEd Response to Issue

The fact that the Containment Spray System and the Reactor Containment Fan Coolers (RCFCs) provide an alternate hydrogen control function is discussed in the Byron/Braidwood UFSAR Section 6.2.5.2.3, "Hydrogen Mixing System Design," and states, "The function of the mixing subsystem is to ensure that local concentrations with greater than 4% hydrogen cannot occur within the primary containment following a LOCA. The mixing is achieved by natural convection processes, containment fan cooler operation, and the containment spray system. Natural convection occurs as a result of the temperature difference between the bulk gas space in the vessel and the containment wall. The natural convection action is enhanced by the momentum of steam emitted from the point of the break. The operation of the containment spray system following the accident will result in the creation of an extremely turbulent atmosphere within the containment, as demonstrated in the Zion Station full-flow containment spray system test. The containment spray system is discussed in Subsection 6.5.2. Mixing of the containment atmosphere to assure that there will be no "pocketing" of large hydrogen concentrations will be accomplished by the reactor containment fan coolers (RCFC), an engineered safety feature described in Subsection 6.2.2. The operation of the recombiner system is not dependent on the operation of any engineered safety features other than the reactor containment fan coolers. Four coolers (two required for both normal and postaccident conditions) each supplying 94,000 cfm (normal operation) or 59,000 cfm (postaccident operation) are provided for each containment. The RCFC fans discharge this air through concrete ducts to the lower elevation." For completeness, the Background Section of the Bases for ITS LCO 3.6.6, Containment Spray and Cooling Systems," was revised to add the sentence, "In addition, the Containment Spray System and Containment Cooling System provide an alternate hydrogen control function to the hydrogen recombiners during post-LOCA conditions." The fact that the Post-LOCA Purge System provides an alternate hydrogen control function is discussed in the Byron/Braidwood UFSAR Section 9.4.9.3.1 a.1, "Post-LOCA Purge System Safety Design Bases," and states "The post-LOCA purge system is a non-safety-related system (per Branch Technical Position CSB 6-2) which is provided as a backup to the hydrogen recombiners to purge the containment of hydrogen to maintain the hydrogen concentration below 4% by volume." ComEd continues to pursue this change.

| NRC RAI Number | NRC Issued Date | RAI Status |
|----------------|-----------------|----------------------------|
| 3.6.8-03 | 11/5/97 | Open - NRC Action Required |

NRC Description of Issue

Bases JFD P7

Bases Background discussion of ITS 3.6.8

In the Bases Background discussion of ITS 3.6.8, the third paragraph states that two 100% capacity independent hydrogen recombiners are shared between the units; however, Bases JFD P7 does not explain how ITS LCO 3.6.8 affects each unit's operation. If these hydrogen recombiners are in use for one Unit or inoperable, what is the operational status of the second Unit? Is it shutdown? The ITS APPLICABILITY, ACTIONS and/or Bases should explain this restriction. If not, an explanation of how ITS 3.6.8 OPERABILITY requirements for the unaffected Unit are met when the recombiners are dedicated to the affected unit or are inoperable. Comment: Revise the submittal and provide the additional discussion and justification for this plant specific design.

ComEd Response to Issue

For Byron and Braidwood, the design basis does not postulate accidents on both units concurrently, but rather an accident on one unit and safe shutdown of the other unit. Therefore, the need for the hydrogen recombiners on the non-accident unit is not postulated in the design basis. However, if a recombiner were in use on one unit, it would still be capable of being manually realigned to the other unit. The Bases for the Byron and Braidwood Current Technical Specifications (CTS) 3/4.6.4, "Combustible Gas Control," states, "The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. EITHER RECOMBINER UNIT (or the Purge System) is capable of controlling the expected hydrogen generation associated with: (1) zirconium-water reactions, (2) radiolytic decomposition of water, and (3) corrosion of metals within containment. These Hydrogen Control Systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971. The Hydrogen Mixing Systems are provided to ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit." ComEd believes that this change is justifiable and continues to pursue this change.
