UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. NPF-37,

AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. NPF-66,

AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. NPF-72,

AND AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. NPF-77

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNITS 1 AND 2

BRAIDWOOD STATION, UNITS 1 AND 2

COMMONWEALTH EDISON COMPANY

DOCKET NOS. STN 50-454, STN 50-455, STN 50-456 AND STN 50-457

I. INTRODUCTION

Byron Station (Byron), Units 1 and 2, and Braidwood Station (Braidwood), Units 1 and 2, have been operating with Technical Specifications (TS) issued with the original operating licenses on October 31, 1984, November 6, 1986, October 17, 1986, and December 18, 1987, respectively, as amended from time to time. By letter dated December 13, 1996, as supplemented by letters dated February 24, September 2, October 10, October 28, and December 8, 1997, and January 27, January 29, February 6, February 13, February 24, February 26, April 13, April 16, June 1, June 2, July 2, July 8, July 30, July 31, August 11, August 12, September 21, September 25, October 1, October 2, October 5, October 15, October 23, and November 6, November 19, November 23, November 30 and December 14, 1998, Commonwealth Edison Company (ComEd or the licensee) proposed to convert the existing TS to the improved TS. The improved TS are based upon NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Revision 1, dated April 1995; guidance in the "NRC Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors" (Final Policy Statement), published on July 22, 1993 (58 FR 39132); and the requirements of 10 CFR 50.36, as amended July 19, 1995 (60 FR 36953). The overall objective of the proposed amendments, consistent with the Final Policy Statement, was to rewrite, reformat, and streamline the TS for Byron and Braidwood to be in accordance with 10 CFR 50.36, "Technical Specifications."

Hereafter, the improved TS are the ITS, the existing or current TS are the CTS, and the improved standard TS, such as in NUREG-1431, are the STS. The corresponding TS Bases are the ITS Bases, CTS Bases, and STS Bases, respectively.

In addition to basing the ITS on the STS, the Commission's Final Policy Statement, and the requirements in 10 CFR 50.36, the licensee retained portions of the CTS as a basis for the ITS. Plant-specific issues, including design features, requirements, and operating practices, were discussed with the licensee during a series of conference calls and meetings that concluded on September 3, 1998. Consistent with the Final Policy Statement, the licensee proposed transferring some CTS requirements to licensee-controlled documents such as the Updated Final Safety Analysis Report (UFSAR) and the Technical Requirements Manual (TRM) for Byron and Braidwood, for which changes by licensees to the documents are controlled by a regulation such as 10 CFR 50.59. These licensee-controlled documents may be changed without prior staff approval, whereas NRC-controlled documents, such as the TS, may not be changed by the licensee without prior staff approval. In addition, human factors principles were emphasized to add clarity to the CTS requirements being retained in the ITS and to define more clearly the appropriate scope of the ITS. Further, significant changes were proposed to the STS Bases to make each ITS requirement clearer and easier to understand.

The Commission's proposed actions on the Byron and Braidwood applications for amendments on December 13, 1996, were published in the Federal Register on October 29, 1998 (63 FR 58072). The staff's evaluation of these applications, including the supplements listed above, that resulted from NRC Requests for Additional Information (RAIs) and discussions with the licensee during the NRC staff review, is presented in this Safety Evaluation (SE). The staff issued RAIs dated August 5, November 5, and December 5, 1997, and January 16, March 9, April 29, June 12, September 11, and September 29, 1998. The plant-specific changes contained in these supplements serve to clarify the ITS with respect to the guidance in the Final Policy Statement and STS. Therefore, these plant-specific changes are within the scope of the action described in the Federal Register notices, except for the beyond scope changes that were the subject of separate notices. These notices were published on October 28, 1998 (63 FR 57710) and November 2, 1998 (63 FR 58794).

Following the initial December 13, 1996, application for operating license amendments to convert the CTS to the ITS for Byron and Braidwood, the NRC staff approved other amendments to the Byron and Braidwood operating licenses. These amendments, which ComEd has incorporated as appropriate into the ITS, are the following:

Braidwood Station, Units 1 and 2

Date Issued	Amendment No. Unit 1	Unit 2	Description
2/12/97	77	77	Eliminated license conditions that required additional corrosion testing of sleeved Steam Generator (SG) tubes. This amendment did not affect the TS.
4/2/97	78	78	TS change to allow, on a temporary basis, partial credit for boron in the Spent Fuel Pool (SFP) in maintaining margin of subcriticality. Superseded by amendment number 86/86.

Braidwood Station, Units 1 and 2

Date Issued	Amendment No. Unit 1	Unit 2	Description
4/15/97	79	79	TS change to revise the requirements related to Main Steam Safety Valves (MSSVs).
4/16/97	80	80	TS change to relocate certain cycle-specific parameter limits into the Operating Limits Report.
5/6/97	81	81	TS change to permit one-time, temporary removal of containment tendon grease in preparation for SG replacement outage. Not retained in the ITS because the allowance has expired.
5/14/97	82	82	TS change to extend the applicability of the SG tube voltage-based repair criteria to Unit 1 Cycle 7. Not retained in the ITS because the cycle has completed. Superseded by amendment 92/92.
5/23/97	83		TS change to revise Unit 1 Surveillance Requirements (SRs) for verifying the Emergency Core Cooling System (ECCS) piping is full of water. Not incorporated in ITS because superseded by amendment 91/91.
7/10/97	84	83	TS change to revise table of Containment Isolation Valves (CIVs) to reflect modifications associated with SG replacement on Unit 1.
8/13/97		84	TS change to revise Unit 2 SRs for verifying the ECCS piping is full of water. Not incorporated in ITS because superseded by amendment 91/91.
8/13/97	85	85	Authorizes change to dose values for process gas system rupture in Section 15 of the UFSAR. This amendment did not affect the TS.
12/4/97	86	86	TS change to allow partial credit for boron in the SFP in maintaining margin of subcriticality.
1/15/98	87	87	TS change to revise SG water level to reflect modifications associated with SG replacement on Unit 1.
1/22/98	88	88	TS change to revise containment pressure (Pa) and Reactor Coolant System (RCS) volume to support SG replacement on Unit 1.

Braidwood Station, Units 1 and 2

Date Issued	Amendment No. Unit 1	Amendment No. Unit 2	Description
1/23/98	89	89	TS change to relocate RCS pressure-temperature limits and Low Temperature Overpressure Protection (LTOP) system setpoints into a Pressure Temperature Limits Report (PTLR).
1/29/98	90	90	TS change to relocate containment vessel structural integrity surveillances into licensee-controlled program.
1/30/98	91	91	TS change to revise Unit 1 SRs for verifying the ECCS piping is full of water. Also added a license condition to Units 1 and 2 related to surveillance of ECCS cross-over piping. The license condition is eliminated because the details are incorporated into ITS Bases.
2/3/98	92	92	TS change to remove the SG tube voltage-based repair criteria for Unit 1, and to restore Unit 1 RCS dose equivalent iodine to its original value. Change is applicable after SG replacement on Unit 1, which was completed November, 1998.
5/26/98	93	93	TS change to extend surveillance frequency on turbine throttle valves and turbine governor valves.
8/18/98	94	94	TS change to permit replacement of the existing 125 V batteries with C&D batteries.
9/3/98	95	95	TS change to reduce RCS dose equivalent iodine on Unit 1 in response to higher predictions of SG tube leakage during main steam line break. Only in effect until SG replacement at end of Unit 1 Cycle 7. Not retained in ITS because SGs have been replaced.
10/6/98	96	96	TS change to condensate storage tank water level and auxiliary feedwater switchover setpoint.
10/15/98	97	97	TS change to reflect ventilation system design lineup and provide allowance for testing.

Byron Station, Units 1 and 2

Date Issued	Amendment No. Unit 1	Unit 2	Description
2/12/97	85	85	Eliminated license conditions that required additional corrosion testing of sleeved SG tubes. This amendment did not affect the TS.
4/2/97	86	86	TS change to allow, on a temporary basis, partial credit for boron in the SFP in maintaining margin of subcriticality. Superseded by amendment number 94/94.
4/15/97	87	87	TS change to revise the requirements related to MSSVs.
4/16/97	88	88	TS change to relocate certain cycle-specific parameter limits into the Operating Limits Report.
5/6/97	89	89	TS change to permit one-time, temporary removal of containment tendon grease in preparation for SG replacement outage. Not retained in the ITS because the allowance has expired.
6/1/97	90		TS change to revise Unit 1 SRs for verifying the ECCS piping is full of water. Not incorporated in ITS because superseded by amendment 100/100.
7/10/97	91	90	TS change to revise table of CIVs to reflect modifications associated with SG replacement on Unit 1.
8/13/97		91	TS change to revise Unit 2 SRs for verifying the ECCS piping is full of water.
8/13/97	92	92	Authorizes change to dose values for process gas system rupture in Section 15 of the UFSAR. This amendment did not affect the TS.
11/25/97	93	93	TS change to permit replacement of the existing 125 V batteries with C&D batteries.
12/4/97	94	94	TS change to allow partial credit for boron in the SFP in maintaining margin of subcriticality.

Byron Station, Units 1 and 2

Date Issued	Amendment No. Unit 1	Unit 2	Description
12/12/97	95	95	TS change to ultimate heat sink requirements to reflect SG replacement on Unit 1 and reanalysis on both units.
1/15/98	96	96	TS change to revise SG water level to reflect modifications associated with SG replacement on Unit 1.
1/22/98	97	97	TS change to revise containment pressure (Pa) and RCS volume to support SG replacement on Unit 1.
1/23/98	98	98	TS change to relocate RCS pressure-temperature limits and LTOP system setpoints into a PTLR.
1/29/98	99	99	TS change to relocate containment vessel structural integrity surveillances into licensee-controlled program.
1/30/98	100	100	TS change to revise Unit 1 SRs for verifying the ECCS piping is full of water. Also added a license condition to Units 1 and 2 related to surveillance of ECCS cross-over piping. The license condition is eliminated because the details are incorporated into ITS Bases.
2/3/98	101	101	TS change to remove the SG tube voltage-based repair criteria for Unit 1, and to restore Unit 1 RCS dose equivalent iodine to its original value. Change is applicable after SG replacement on Unit 1, which was completed February, 1997.
5/7/98	102	102	TS change to permit a scheduler extension of the Appendix J Option B requirements. This allowed the Unit 2 containment integrated leak rate test to be performed during the 8th refueling outage. Relocated to licensee-controlled document.
5/26/98	103	103	TS change to extend surveillance frequency on turbine throttle valves and turbine governor valves.
10/6/98	104	104	TS change to condensate storage tank water level and auxiliary feedwater switchover setpoint.
10/15/98	105	105	TS change to reflect ventilation system design lineup and provide allowance for testing.

During its review, the NRC staff relied on the Final Policy Statement and the STS as guidance for acceptance of CTS changes. This SE provides a summary basis for the NRC staff conclusion that the proposed ITS submitted for Byron and Braidwood are properly based on STS, as modified by plant-specific changes, and that the use of the ITS is acceptable for continued operation. The NRC staff also acknowledges that, as indicated in the Final Policy Statement, the conversion to ITS based on the STS is a voluntary process. Therefore, it is acceptable that the ITS differs from the STS, reflecting the Current Licensing Basis (CLB) for Byron and Braidwood. The NRC staff approves the licensee's changes to the CTS with modifications documented in the supplemental submittals.

By letter dated November 19, 1998, the licensee proposed license conditions for the implementation of the ITS. Also, by letters dated October 10, 1997, February 24, February 26, July 2, July 30, July 31, August 11, August 12, September 25, October 2, October 15, October 23, and November 6, November 19, November 23, November 30 and December 14, 1998, the licensee submitted revised ITS pages. The license conditions and revised ITS pages do not change the scope of the original amendment requests and, therefore, do not change the notices in the Federal Register on October 29, 1998 (63 FR 58072), for the conversion from the CTS to the ITS for Byron and Braidwood. In addition to these notices, there were two notices in the Federal Register for the beyond scope issues associated with the conversion, as listed previously, that are discussed in Section III.G of this SE.

For the reasons stated *infra* in this SE, the NRC staff finds that the Byron ITS and Braidwood ITS issued with these license amendments comply with Section 182a of the Atomic Energy Act of 1954, as amended (the Act), 10 CFR 50.36, and the guidance in the Final Policy Statement; and that they are in accord with the common defense and security and provide adequate protection of the health and safety of the public.

II. BACKGROUND

Section 182a of the Act requires that applicants for nuclear power plant operating licenses will state:

> [S]uch technical specifications, including information of the amount, kind, and source of special nuclear material required, the place of the use, the specific characteristics of the facility, and such other information as the Commission may, by rule or regulation, deem necessary in order to enable it to find that the utilization of special nuclear material will be in accord with the common defense and security and will provide adequate protection to the health and safety of the public. Such technical specifications shall be a part of any license issued.

In 10 CFR 50.36, the Commission established its regulatory requirements related to the content of TS. In doing so, the Commission placed emphasis on those matters related to the prevention of accidents and the mitigation of accident consequences; the Commission noted that applicants were expected to incorporate into their TS "those items that are directly related to maintaining the integrity of the physical barriers designed to contain radioactivity." Statement

of Consideration, "Technical Specifications for Facility Licenses; Safety Analysis Reports," 33 FR 18610 (December 17, 1968). Pursuant to 10 CFR 50.36, TS are required to include items in the following five specific categories: (1) safety limits, limiting safety system settings and limiting control settings; (2) Limiting Conditions for Operation (LCOs); (3) Surveillance Requirements (SRs); (4) design features; and (5) administrative controls. However, the rule does not specify the particular requirements to be included in a plant's TS.

For several years, NRC and industry representatives have sought to develop guidelines for improving the content and quality of nuclear power plant TS. On February 6, 1987, the Commission issued an interim policy statement on TS improvements, "Interim Policy Statement on Technical Specification Improvements for Nuclear Power Reactors" (52 FR 3788). During the period from 1989 to 1992, the utility Owners' Groups and the NRC staff developed STS, such as NUREG-1431 for Westinghouse plants, that would establish models of the Commission's policy for each primary reactor type. In addition, the NRC staff, licensees and Owners' Groups developed generic administrative and editorial guidelines in the form of a "Writer's Guide" for preparing TS, which gives greater consideration to human factors principles and was used throughout the development of licensee-specific ITS.

In September 1992, the Commission issued NUREG-1431, which was developed using the guidance and criteria contained in the Commission's Interim Policy Statement. The STS in NUREG-1431 were established as a model for developing the STS for Westinghouse plants in general. The STS reflect the results of a detailed review of the application of the interim policy statement criteria to generic system functions, which were published in a "Split Report" issued to the Nuclear Steam System Supplier (NSSS) Owners' Groups in May 1988. STS also reflect the results of extensive discussions concerning various drafts of STS, so that the application of the TS criteria and the Writer's Guide would consistently reflect detailed system configurations and operating characteristics for all NSSS designs. As such, the generic Bases presented in NUREG-1431 provide an abundance of information regarding the extent to which the STS present requirements that are necessary to protect public health and safety. The STS in NUREG-1431 apply to Byron and Braidwood.

On July 22, 1993, the Commission issued its Final Policy Statement, expressing the view that satisfying the guidance in the policy statement also satisfies Section 182a of the Act and 10 CFR 50.36 (58 FR 39132). The Final Policy Statement described the safety benefits of the STS, and encouraged licensees to use the STS as the basis for plant-specific TS amendments, and for complete conversions to ITS based on the STS. Further, the Final Policy Statement gave guidance for evaluating the required scope of the TS and defined the guidance criteria to be used in determining which of the LCOs and associated surveillances should remain in the TS. The Commission noted that, in allowing certain items to be relocated to licensee-controlled documents while requiring that other items be retained in the TS, it was adopting the qualitative standard enunciated by the Atomic Safety and Licensing Appeal Board in *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). There, the Appeal Board observed:

> [T]here is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a technical specification, to be included in the license as an absolute condition

> of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. Rather, as best we can discern it, the contemplation of both the Act and the regulations is that TS are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.

By this approach, existing LCO requirements that fall within or satisfy any of the criteria in the Final Policy Statement should be retained in the TS; those LCO requirements that do not fall within or satisfy these criteria may be relocated to licensee-controlled documents. The Commission codified the four criteria in 10 CFR 50.36 (60 FR 36953, July 19, 1995). The criteria are as follows:

Criterion 1

> Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2

> A process variable, design feature, or operating restriction that is an initial condition of a Design Basis Accident (DBA) or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3

> A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4

> A structure, system, or component which operating experience or Probabilistic Risk Assessment (PRA) has shown to be significant to public health and safety.

Part III of this SE explains the NRC staff conclusion that the conversion of the Byron and Braidwood CTS to those based on STS, as modified by plant-specific changes, is consistent with the Byron and Braidwood CLB and the requirements and guidance of the Final Policy Statement and 10 CFR 50.36.

III. EVALUATION

The NRC staff's ITS review evaluated changes to CTS that fall into five categories defined by the licensee and includes an evaluation of whether existing regulatory requirements are adequate for controlling future changes to Byron and Braidwood requirements removed from

the CTS and placed in licensee-controlled documents. The ITS review included discussion of the NRC staff's plans for monitoring the licensee's implementation of these controls at Byron and Braidwood.

The NRC staff review also identified the need for clarifications and additions to the amendment application in order to establish an appropriate regulatory basis for translation of CTS requirements into ITS. Each change proposed in the amendment request is identified as either a Discussion Of Change (DOC) to the CTS or a Justification For Difference (JFD) from the STS. The NRC staff comments were documented as RAIs and forwarded in letters dated August 5, November 5, December 5, 1997, January 16, March 9, April 29, June 12, September 11, and September 29, 1998. The licensee provided responses in letters dated September 2, December 8, 1997, January 27, February 6, February 13, April 16, June 1, July 8, September 21, October 1, October 5, October 15, October 23, November 6, November 19, November 23, November 30 and December 14, 1998. The letters clarified and revised the licensee's basis for translating the CTS requirements into ITS. The NRC staff finds that the licensee's submittals including responses to RAIs provide sufficient detail to allow the staff to reach a conclusion regarding the adequacy of the licensee's proposed changes to the CTS.

These changes generally fall into one of five types, as reflected in Tables A, M, L, LA, and R attached to this SE. These Tables encompass the following CTS change categories:

- Administrative Changes (A), i.e., nontechnical changes in the presentation of CTS requirements;

- Technical Changes - More Restrictive (M), i.e., new or additional CTS requirements;

- Technical Changes - Less Restrictive (specific) (L), i.e., changes, deletions and relaxations of CTS requirements;

- Technical Changes - Less Restrictive (generic) (LA), i.e., deletion of CTS requirements by movement of information and requirements from existing specifications (that are otherwise being retained) to licensee-controlled documents, including the ITS Bases; and

- Relocated Specifications (R), i.e., relaxations in which whole specifications (the LCO and associated action and SRs) are removed from the CTS (an NRC-controlled document) and placed in licensee-controlled documents.

These CTS change categories are more fully described as follows:

A. Administrative Changes

Administrative (nontechnical) changes are intended to incorporate human factors principles into the form and structure of the ITS so that plant operations personnel can use them more easily. These changes are editorial in nature or involve the reorganization or reformatting of CTS requirements without affecting technical content or operational restrictions. Every section of the ITS reflects this type of change. In order to ensure consistency, the NRC staff and the licensee

have used the STS as guidance to reformat and make other administrative changes. Among the changes proposed by the licensee and found acceptable by the NRC staff are:

(1) providing the appropriate numbers, etc., for STS bracketed information (information that must be supplied on a plant-specific basis and that may change from plant to plant);

(2) identifying plant-specific wording for system names, etc.;

(3) changing the wording of specification titles in STS to conform to existing plant nomenclature;

(4) splitting up requirements currently grouped under a single current specification to more appropriate locations in two or more specifications of ITS;

(5) combining related requirements currently presented in separate specifications of the CTS into a single specification of ITS;

(6) presentation changes that involve rewording or reformatting for clarity (including moving an existing requirement to another location within the TS) but which do not involve a change in requirements;

(7) wording changes and additions that are consistent with current interpretation and practice, and that more clearly or explicitly state existing requirements; and

(8) deletion of redundant TS requirements that exist elsewhere in TS.

Table A - Administrative Changes lists the administrative changes to CTS in converting to the ITS. Table A is organized in ITS order by each A-type DOC to the CTS, and provides a summary description of the administrative change that was made, and CTS and ITS references. The NRC staff reviewed all of the administrative and editorial changes proposed by the licensee and finds them acceptable because they are compatible with the Writer's Guide and STS, do not result in any change in operating requirements, and are consistent with the Commission's regulations.

B. Technical Changes - More Restrictive

The licensee, in electing to implement the specifications of the STS, proposed a number of requirements more restrictive than those in the CTS. The ITS requirements in this category include requirements that are either new, more conservative than corresponding requirements in the CTS, or that have additional restrictions that are not in the CTS but are in the STS. Examples of more restrictive requirements are placing an LCO on plant equipment which is not required by the CTS to be Operable, more restrictive requirements to restore inoperable equipment, and more restrictive SRs. Table M - More Restrictive Changes lists the more restrictive changes to the CTS in converting to the ITS. Table M is organized in ITS order by each M-type DOC to the CTS and provides a summary description of the more restrictive change that was adopted, and the CTS and ITS references. These changes are additional restrictions on plant operation and are acceptable because they enhance safety.

C. Technical Changes - Less Restrictive (Specific)

Less restrictive requirements include changes, deletions and relaxations to portions of the CTS requirements that are not being retained in ITS. When requirements have been shown to give little or no safety benefit, their removal from the TS may be appropriate. In most cases, relaxations previously granted to individual plants on a plant-specific basis were the result of (1) generic NRC actions, (2) new NRC staff positions that have evolved from technological advancements and operating experience, or (3) resolution of the Owners Groups comments on the STS. The NRC staff reviewed generic relaxations contained in the STS and found them acceptable because they are consistent with current licensing practices and the Commission's regulations. The Byron and Braidwood designs were also reviewed to determine if the specific design bases and licensing bases for Byron and Braidwood are consistent with the technical basis for the model requirements in the STS, and thus provide a basis for the ITS.

A significant number of changes to the CTS involved changes, deletions and relaxations to portions of the CTS requirements evaluated in Categories I through VIII as follows:

Category I	Relaxation of LCOs and Administrative Controls
Category II	Relaxation of Applicability
Category III	Relaxation of Action Requirements
Category IV	Relaxation of Completion Time
Category V	Relaxation of SR Acceptance Criteria
Category VI	Relaxation of Surveillance Frequency
Category VII	Deletion of Requirements Redundant to Regulation
Category VIII	Deletion of SRs

The following discussions address why various Specifications within each of these eight categories of information or specific requirements are not required to be included in ITS.

Relaxation of LCOs and Administrative Controls (Category I)

CTS contain LCOs that are overly restrictive because they specify limits on operational and system parameters and on system Operability beyond those necessary to meet safety analysis assumptions. CTS also contain administrative controls that do not contribute to the safe operation of the plant. The ITS, consistent with the guidance in the STS, omit such operational limits and administrative controls. This category of change includes (1) deletion of equipment or systems addressed by the CTS LCOs which are not required or assumed to function by the applicable safety analyses; (2) addition of explicit exceptions to the CTS LCO requirements, consistent with the guidance of the STS and normal plant operations, to provide necessary operational

flexibility but without a significant safety impact; and (3) deletion of miscellaneous administrative controls such as reporting requirements - sometimes contained in action requirements - that have no affect on safety. Deletion of such administrative controls allows operators to more clearly focus on issues important to safety. The ITS LCOs and administrative controls resulting from these changes will continue to maintain an adequate degree of protection consistent with the safety analysis while providing an improved focus on issues important to safety and necessary operational flexibility without adversely affecting the safe operation of the plant. Therefore, less restrictive changes falling within Category I are acceptable.

Relaxation of Applicability (Category II)

Byron and Braidwood CTS typically specify the Applicability of the requirements associated with an LCO in terms of reactor operational conditions, using the CTS-defined term Operational Mode, or Mode. This definition includes Mode 1 - Power Operation, Mode 2 - Startup, Mode 3 - Hot Standby, Mode 4 - Hot Shutdown, Mode 5 - Cold Shutdown, and Mode 6 - Refueling. These six Modes are defined by inclusive combinations of reactor core reactivity, power level, and average coolant temperature. CTS Applicability statements typically specify meeting the LCO requirements during one or more of these Modes; some specify all six Modes; others specify "at all times." CTS Applicabilities may also specify other plant conditions or operations such as whenever irradiated fuel is in the storage pool, during storage of fuel in the SFP, during Core Alterations, and during movement of irradiated fuel assemblies. In some cases, the CTS contain footnotes to limit the scope of a Mode of Applicability to more closely match the conditions during which the LCO is needed to support the plant safety analysis. Consistent with the STS, the ITS retain the intent of this approach which is to specify Applicabilities that are consistent with the application of the plant safety analysis assumptions for Operability of the required features. For a number of ITS specifications, these revised Applicabilities are less restrictive than the Applicabilities of corresponding requirements in the CTS.

The ITS relax some CTS Applicabilities, consistent with the STS, by adding exceptions in the form of notes, to allow needed operational flexibility. Such exceptions allow performing normal operations and testing that would otherwise be prohibited during the conditions defined by the Applicability of the LCO. Such exceptions in the ITS are restricted to necessary but infrequent operations of limited duration and scope. Such allowances are acceptable because the potential impact on safety during the short time needed to accomplish the specified operation or test is small.

The ITS relax the Applicabilities of a number of CTS LCOs that apply in Mode 6 by revising the CTS definition of Core Alterations to include only those activities that can affect core reactivity. This relaxation is acceptable because the specifications applicable during Core Alterations are those that protect against or mitigate a reactivity excursion event.

CTS LCO Operability requirements for a component are not needed when the safety function of the specified safety system is met because the component is performing its

intended safety function. For example, if the safety function of a valve, such as a main steam isolation valve, is to provide system isolation and the valve is closed, the safety function is met; thus the Applicability of the LCO may be revised to stipulate that the LCO does not apply to the valve if the valve is closed.

Deleting or modifying the Applicability requirements that are indeterminate or which are inconsistent with the application of accident analysis assumptions is appropriate because (1) it increases operational flexibility without adversely affecting plant safety, and (2) when LCOs and associated remedial action requirements cannot be met, the ITS will, in most cases, require exiting the Applicability, thus taking the plant out of the conditions during which the LCO must be met. Therefore, less restrictive changes falling within Category II are acceptable.

Relaxation of Action Requirements (Category III)

Upon discovery of a condition in which an LCO is not met, the CTS require performing the applicable specified action requirements. These action requirements, or Required Actions as they are called in the ITS and STS, are remedial measures that must be completed within specified time limits, or Completion Times. For some conditions, the ITS Required Actions, consistent with the STS, are less restrictive than the corresponding CTS action requirements. Adopting Required Actions from the STS is acceptable because they take into account the Operability status of redundant systems of TS required features, the capacity and capability of the remaining features, and the compensatory attributes of the Required Actions as compared to the LCO requirements. Category III relaxations include deletion, revision, and replacement of CTS action requirements consistent with the STS. These relaxations have been determined not to reduce the effectiveness of the CTS action requirements or the level of safety provided by the CTS action requirements. Therefore, less restrictive changes falling within Category III are acceptable.

Relaxation of Completion Time (Category IV)

Upon discovery of a condition in which an LCO is not met, the CTS require performing the applicable specified action requirements. These specified action requirements, or Required Actions as they are called in the ITS and STS, are remedial measures that must be completed within specified time limits. In the ITS and STS, these time limits are formally called Completion Times. Completion Times define limits during which operation in a degraded condition is permitted. The ITS retain many CTS action requirements but may allow longer Completion Times, consistent with the STS. Adopting Completion Times from the STS is acceptable because they take into account the Operability status of the redundant systems of TS required features, the capacity and capability of remaining features, a reasonable time for repair or replacement of required features, and the low probability of a DBA occurring during the repair period. Therefore, less restrictive changes falling within Category IV are acceptable.

Relaxation of SR Acceptance Criteria (Category V)

Prior to placing the plant in a specified Operational Mode or other condition stated in the Applicability of an LCO, and in accordance with the specified SR Frequency thereafter, the CTS require verifying the Operability of each LCO-required component by meeting the SRs associated with the LCO. This usually entails performance of testing to demonstrate the Operability of the LCO-required components, or the verification that specified parameters are within LCO limits. A successful demonstration of Operability requires meeting the specified acceptance criteria as well as any specified conditions for the conduct of the test. Relaxations of CTS SRs include relaxing both the acceptance criteria and the conditions of performance. These CTS SR relaxations are consistent with STS.

Relaxations of CTS SR acceptance criteria provide operational flexibility, consistent with the guidance of the STS, but do not reduce the level of assurance of Operability provided by the successful performance of the surveillance. Such revised acceptance criteria are acceptable because they remain consistent with the application of the plant safety analysis assumptions for Operability of the LCO-required features.

Relaxations of CTS SR performance conditions include not requiring testing of de-energized equipment (e.g., instrumentation Channel Checks) and equipment that is already performing its intended safety function (e.g., position verification of valves locked in their safety actuation position). These changes are acceptable because the existing surveillances are not necessary to ensure the capability of the affected components to perform their intended functions. Another relaxation of SR performance conditions is the allowance to verify the position of valves in high radiation areas by administrative means. This change is acceptable because the TS administrative controls (ITS 5.7) regarding access to high radiation areas make the likelihood of incorrectly positioning such valves negligible.

Finally, the ITS permits the use of an actual as well as a simulated actuation signal to satisfy SRs for automatically actuated systems. This is acceptable because TS required features cannot distinguish between an "actual" signal and a "test" signal.

These relaxations of CTS SRs optimize test requirements for the affected safety systems and increase operational flexibility. Therefore, because of the reasons stated, less restrictive changes falling within Category V are acceptable.

Relaxation of Surveillance Frequency (Category VI)

CTS and ITS SR Frequencies specify time interval requirements for performing surveillances. By increasing the time interval between performances of a surveillance, the ITS decreases equipment unavailability from testing thereby increasing equipment availability. In general, the STS contain test frequencies that are consistent with industry practice or industry standards for achieving acceptable levels of equipment reliability. Adopting testing practices specified in the STS is acceptable based on similar

design, like-component testing for the system application, and the availability of other TS requirements which provide regular checks to ensure limits are met.

Reduced testing can enhance safety because safety system unavailability from testing is reduced; in turn, reliability of the affected structure, system or component should remain constant or increase. Less frequent testing is appropriate where operating experience, industry practice, industry standards, or manufacturers' recommendations have shown that components usually pass the SR when performed at the specified interval. In such cases, therefore, relaxed SR Frequencies are acceptable because they do not reduce, but can increase system reliability.

The ITS relax some CTS SR Frequencies by eliminating the requirement to perform the surveillance "on a Staggered Test Basis." Consistent with the STS, the ITS omits CTS staggered (alternating) test requirements that have been shown by operating experience to contribute little to safety. This is beneficial because staggered testing imposes additional constraints on plant operation, scheduling, and manpower, and may also increase the time safety systems are unavailable from testing. Typically, the ITS, consistent with the STS, only specifies staggered testing for certain systems or components where this method is most practical or where it contributes to safety. Therefore, the elimination of staggered testing requirements, consistent with the guidance of the STS, is acceptable.

The ITS also relax CTS SR Frequencies by adding specific exceptions, consistent with the STS, in the form of a SR note or an addition to the Frequency itself to allow performing the surveillance at an optimum time or plant condition. Such an exception might allow entry into a specified Mode or condition in the Applicability of the associated LCO prior to performing the surveillance. Exceptions are also specified to allow delay in the performance of certain SRs for AC and DC sources during shutdown conditions when such performance would result in less than the minimum Operable LCO-required electrical power sources. Such exceptions are acceptable because the affected features usually pass the surveillance and the delay in performance is expected to be of short duration. These exceptions ensure the surveillances are performed at the correct time or plant condition to provide the desired verification of system Operability or protective limit. Therefore, the addition of these exceptions, consistent with the guidance of the STS, is acceptable.

The ITS may also base CTS SR Frequency relaxations on staff-approved topical reports. The NRC staff has accepted topical report analyses that bound the plant-specific design and component reliability assumptions.

SR Frequency relaxations in the ITS typically remove unnecessary burdens on plant operation from testing but ensure adequate verification that the associated LCO requirements are being met. Therefore, less restrictive changes falling within Category VI are acceptable.

Deletion of Requirements Redundant to Regulation (Category VII)

CTS contain requirements that are redundant to regulations in 10 CFR. For example, many CTS reporting requirements are also required by 10 CFR 50.72 and 10 CFR 50.73. The CTS include requirements to submit Special Reports when specified limits, LCOs, or action requirements are not met. However, the ITS, consistent with the STS, omits many of the CTS reporting requirements because the reporting requirements in the regulations cited are acceptable and do not need repeating in the TS to ensure timely submission to the NRC. In addition, these redundant CTS reporting requirements are administrative in nature and do not affect plant safety. Therefore, this type of change has no impact on the safe operation of the plant. Deletion of these requirements is beneficial because it reduces the administrative burden on the plant and fosters a better focus on operational matters important to safety. Therefore, less restrictive changes falling under Category VII are acceptable.

Deletion of SRs (Category VIII)

The CTS contain SRs that do not contribute significantly to demonstrating the Operability of the associated LCO-required features. These SRs do not add additional assurance that such features can perform their intended safety functions. The ITS, consistent with the STS, omit most such SRs because they are unnecessary to ensure the associated LCOs are met. CTS SRs falling under this category of change include the following:

CTS SRs to verify that an LCO requirement is met within a short interval before entering the LCO's Applicability may be deleted because ITS SR 3.0.4 is adequate to ensure this verification takes place before entering the LCO's Applicability within the specified periodic SR test interval, or Frequency. Meeting the specified periodic SR Frequency is adequate to ensure the affected LCO requirement is met.

CTS SRs that verify a feature's capability not assumed in the accident analysis may be deleted because the associated LCO does not require that capability for the feature to be Operable. An example is the deletion of CTS 4.9.1.1.b, which requires determination of the reactivity conditions prior to withdrawal of any full-length control rod in excess of 57 steps from its fully inserted position within the reactor vessel in Mode 6.

CTS SRs that require testing prior to returning an LCO-required feature to service following corrective or preventive maintenance and design modification may be deleted because Quality Assurance (QA) requirements and plant procedures already control retest requirements following these activities on plant equipment. These controls are adequate to ensure proper verification that the Operability of plant equipment is restored, thus maintaining the level of safety provided by the associated specifications. In addition, deletion of this kind of SR precludes duplication of test requirements in the ITS, consistent with the STS.

CTS require safety systems to be tested and verified Operable prior to entering applicable conditions. The ITS reflect STS required SRs, eliminating unnecessary CTS SRs that do not contribute significantly to the verification that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested. Therefore, less restrictive changes falling within Category VIII are acceptable.

Table L - Less Restrictive Changes lists the less restrictive changes to the CTS in converting to the ITS. Table L is organized in ITS order by each L-type DOC to the CTS, and provides a summary description of each less restrictive change that was made, the CTS and ITS references, and a reference to the applicable change categories as discussed above (if applicable). For ease of reference, the eight less restrictive change categories are listed at the bottom of each page of Table L. This table also lists those less restrictive changes that are discussed individually in Section III.G below.

For the reasons presented above, these less restrictive requirements are acceptable because they will not affect the safe operation of the Byron and Braidwood units. The TS requirements that remain are consistent with current licensing practices, operating experience, and applicable accident and transient analyses, and provide reasonable assurance that public health and safety will be protected.

D. Technical Changes - Less Restrictive (Generic)

When requirements in the TS have been shown to give little or no safety benefit, their removal from the TS may be appropriate. This section discusses the relocation of details within the CTS to licensee-controlled documents, instead of the relocation of entire specifications from the CTS to licensee-controlled documents which is discussed below in Section III.E. In most cases, relaxations previously granted to licensees on a plant-specific basis were the result of (1) generic NRC actions, (2) new staff positions that have evolved from technological advancements and operating experience, or (3) resolution of the Owners Groups comments on the STS (the TSTF process). In evaluating the proposed relocation of TS details to licensee-controlled documents, the staff reviewed the specific design bases and licensing bases for the Byron and Braidwood units, and determined that these bases are consistent with the technical bases for the model requirements in the STS. Additionally, the NRC staff had previously reviewed generic relaxations contained in the STS and found them acceptable because they are consistent with current licensing practices and the Commission's regulations. Accordingly, the NRC staff finds that the proposed ITS for Byron and Braidwood units, while containing fewer details than the CTS, will provide an adequate basis for safe operation of the units.

A significant number of changes to the CTS involved the removal of specific requirements and detailed information from individual specifications evaluated to be Types 1 through 4 that follow:

Type 1	Details of System Design
Type 2	Descriptions of System Operation
Type 3	Procedural Details for Meeting TS Requirements

Type 4 Surveillance Requirements for Indication-only Instrumentation

The following discussions address why each of the four types of information or specific requirements are not required to be included in ITS.

Details of System Design (Type 1)

The CTS contain descriptions of plant design including design limits inherent to the plant or system. Some of these descriptions address component or system design features and limits which are not credited in the safety analyses or which do not support the Operability of associated LCO-required features. CTS also contain lists of features that support the Operability of LCO-required systems. The ITS, consistent with the STS, omit these kinds of details, which are moved to licensee-controlled documents such as the UFSAR, the TRM, and the ITS Bases, changes to which are adequately governed by regulation or by ITS administrative controls.

The design of the facility is required to be described in the UFSAR by 10 CFR 50.34. In addition, the QA requirements of Appendix B to 10 CFR Part 50 require that plant design be documented in controlled procedures and drawings, and maintained in accordance with an NRC-approved QA plan (referenced in the UFSAR). In 10 CFR 50.59, controls are specified for changing the facility as described in the UFSAR, and in 10 CFR 50.54(a) criteria are specified for changing the QA plan. The ITS Bases also contain descriptions of system design and Operability requirements. ITS 5.5.14, Bases Control Program, specifies controls for changing the ITS Bases.

For a system to be considered Operable, the definition of Operability as it pertains to the system must be satisfied. In addition, the specified SRs associated with the LCO governing the system must be met. Some CTS LCOs contain information concerning design and configuration implying that they relate to meeting the Operability requirements of the LCO. Such information is usually incomplete and is actually redundant to the definition of Operability and the associated SRs. Because the Operability requirements for the affected systems and supporting SRs are being retained in the ITS, and adequate TS or regulatory controls exist for any changes to the removed information, moving such information to licensee-controlled documents has no impact on the effectiveness of the ITS to ensure safe operation of the plant.

Limits such as the cycle-specific core design limits, are moved from the CTS to other documents. The cycle-specific core design limits are moved to the Core Operating Limits Report (COLR) in accordance with Generic Letter (GL) 88-16. Removal of these limits is acceptable because ITS administrative controls include adequate programmatic requirements to control limits removed from the CTS to such documents as the COLR.

Relocation of details of system design from the CTS is consistent with the content, format, and presentation of information in the STS. In addition, existing regulations and TS administrative controls will ensure an effective level of regulatory control of this information and will provide a more appropriate change control process. Therefore, changes falling within Type 1 are acceptable.

Descriptions of System Operation (Type 2)

The plans for the normal and emergency operation of the facility are required to be described in the UFSAR by 10 CFR 50.34. ITS 5.4.1.a requires written procedures to be established, implemented, and maintained for plant operating procedures including procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Controls specified in 10 CFR 50.59 apply to changes in procedures as described in the UFSAR. The TRM and ITS Bases also contain descriptions of system operation. ITS 5.5.14, Bases Control Program, specifies controls for changing the ITS Bases. It is acceptable to remove details and descriptions of system operation from the CTS because this type of information will be adequately controlled in the UFSAR, the TRM, plant operating procedures, and the ITS Bases, as appropriate. Therefore, changes falling within Type 2 are acceptable.

Procedural Details for Meeting TS Requirements (Type 3)

Details for performing CTS action and SRs, maintaining and controlling CTS administrative requirements, and statements providing clarification of CTS requirements are more appropriately specified in the UFSAR, QA plan, TRM, or ITS Bases as appropriate. Changes to the information governed by one of these documents requires an evaluation in accordance with 10 CFR 50.54, 10 CFR 50.59, or ITS 5.5.14, Bases Control Program.

The control of the plant conditions appropriate to perform a surveillance test is typically an issue for procedures and scheduling (except where a Mode or condition specified in the Applicability of the LCO must first be entered in order to perform the surveillance). The inclusion of routine procedural guidance has previously been determined to be unnecessary as a TS restriction. As indicated in GL 91-04, allowing this procedural control is consistent with the vast majority of other SRs that do not dictate specific plant conditions for surveillances. In addition, lists or tables containing TS related information or data have also previously been determined to be unnecessary as a TS restriction. GL 93-08 specifically approved the removal from the TS of the surveillance acceptance criteria in the instrument response time tables. The ITS extends the allowance provided in GL 93-08 to include the removal of most tables and lists of information pertaining to surveillances or LCOs from the TS. Similarly, prescriptive procedural information in action requirements is unnecessary as a TS restriction. The inclusion of specific procedural detail in action requirements is unlikely to contain all the procedural considerations necessary for the plant operators to complete the actions required, and referral to plant procedures is,

therefore, required in any event. The CTS also contain many general statements intended to explain or clarify the intent of requirements in LCOs, action statements, and surveillances. The ITS Bases document provides a more appropriate location for these types of informational statements. Therefore, changes falling within Type 3 are acceptable.

Surveillance Requirements for Indication-only Instrumentation (Type 4)

The CTS contain SRs that do not contribute significantly to demonstrating the Operability of the associated LCO-required features. These SRs do not add additional assurance that such features can perform their intended safety functions. The ITS, consistent with the STS, omit most such SRs because they are unnecessary to ensure the associated LCOs are met.

CTS SRs for indication-only instrumentation and for equipment controls may be removed from the TS and placed in licensee-controlled documents because they are not necessary to meet the requirements of Operability for the LCO-required features. One example is the RCS total flow rate indicators. These instruments are not necessary for ensuring that RCS total flow rate is within limits. Thus, TS need not specify a Channel Calibration for these indicators.

Other changes involving the removal of procedural details include those details removed from the CTS which are associated with limits retained in the ITS. For example, the ITS requirement may simply refer to programmatic requirements such as the Ventilation Filter Testing Program (VFTP), included in ITS 5.5.11, which specifies the limits and test requirements contained in the VFTP. The ITS VFTP provides adequate programmatic control of the associated procedural details removed from the CTS. Changes to ITS 5.5.11 must be approved by the NRC.

These changes are consistent with the content, format, and presentation of information in the STS. In addition, existing regulations and TS administrative controls will ensure an effective level of regulatory control of this information and will provide a more appropriate change control process. Therefore, changes falling within Type 4 are acceptable.

Table LA lists the requirements and detailed information in the CTS that are relocated to licensee-controlled documents and not made part of the ITS. Table LA is organized in ITS order by each LA-type DOC to the CTS. It includes: (1) the ITS section designation followed by the DOC identifier (e.g., 3.3 followed by LA.1 means ITS Section 3.3, DOC LA.1); (2) CTS reference; (3) a summary description of the relocated details (summary of change); (4) the name of the document to contain the relocated details or requirements (new location); (5) the method for controlling future changes to relocated requirements (control process); and (6) a reference to the specific change type, as discussed above, for not including the information or specific requirements in the ITS.

The NRC staff has concluded that these types of detailed information and specific requirements do not need to be included in the ITS to ensure adequate protection of the health and safety of the public. Accordingly, these requirements may be moved to one of the following licensee-

controlled documents for which changes are adequately governed by a regulatory or TS requirement:

- TS Bases controlled in accordance with 10 CFR 50.59, as stated in ITS 5.5.14, "Technical Specifications Bases Control Program."
- UFSAR controlled by 10 CFR 50.59.
- TRM (included in the UFSAR by reference) controlled by 10 CFR 50.59.
- QA Manual (included in the UFSAR by reference) controlled by 10 CFR 50.54(a).
- Offsite Dose Calculation Manual controlled by ITS 5.5.1.
- COLR
- ITS Programs

For each of these changes that address details relocated from the CTS, Table LA, as noted above, lists the licensee-controlled documents and the TS or regulatory requirements governing changes to those documents.

To the extent that requirements and information have been relocated to licensee-controlled documents, the NRC staff has determined that such information and requirements are not required to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety. Further, where such information and requirements are contained in LCOs and associated requirements in the CTS, the NRC staff has concluded that they do not fall within any of the four criteria in 10 CFR 50.36 (discussed in Section II of this SE). Accordingly, existing detailed information and specific requirements, such as generally described above, may be removed from the CTS and not included in the ITS.

E. Relocated Entire CTS Specifications

The Commission's Final Policy Statement states that LCOs and associated requirements that do not satisfy or fall within any of the four criteria (now codified in 10 CFR 50.36) may be relocated from existing TS (an NRC-controlled document) to appropriate licensee-controlled documents. This section discusses the relocation of entire specifications from the CTS to licensee-controlled documents. These specifications include the LCOs, Action Statements (i.e., Actions), and associated SRs. In its amendment requests the licensee proposed relocating such specifications from the CTS to the TRM, which is incorporated in the UFSAR by reference. The staff has reviewed the licensee's submittals, and finds that relocation of these requirements to the TRM is acceptable, in that changes to the UFSAR and TRM will be adequately controlled by 10 CFR 50.59. These provisions will continue to be implemented by appropriate plant procedures (i.e., operating procedures, maintenance procedures, surveillance and testing procedures, and work control procedures).

The licensee, in electing to implement the specifications of the STS, also proposed, in accordance with the criteria in the Final Policy Statement and 10 CFR 50.36, to entirely remove certain specifications from the CTS and place them in licensee-controlled documents as noted in Table R. Table R lists all specifications that are relocated from the CTS based on the Final Policy Statement and 10 CFR 50.36, to licensee-controlled documents. Table R is organized by each R-type DOC to the CTS, in a manner consistent with the organization of requirements in the CTS, followed by a reference to the associated relocated CTS specification; a summary description of the relocated CTS specification; the name of the document that will contain the relocated specification (new location); and the method for controlling future changes to the relocated specification (control process). The NRC staff's evaluation of each relocated specification presented in Table R is provided below with the corresponding DOC identifier given in parenthesis after the title of each relocated specification.

1. 3/4.1.1.1 SHUTDOWN MARGIN - T_{avg} > 200°F (3.1-R.1)

CTS 3/4.1.1.1 establishes the controls for Shutdown Margin (SDM) and is applicable in Modes 1, 2, 3, and 4. SDM is an initial condition in the safety analysis for such events as the zero power steamline break and rod ejection from subcritical condition. Additionally, the analyses for various plant transients assume a successful reactor trip for accident mitigation, which in turn depends on sufficient SDM being present. Thus, TS should specify a limit on SDM in Modes 1 and 2. However, during Modes 1 and 2, the SDM available from a reactor trip is determined by the inherent reactivity worth of the control rods. Operators verify adequate SDM is available in Modes 1 and 2 by observing that the control rods are above the rod insertion limits. These limits are specified in the retained LCOs for shutdown and control bank insertion limits, CTS LCOs 3.1.3.5 and 3.3.1.6 (ITS LCOs 3.1.5 and 3.1.6), respectively. Thus, a separate LCO for SDM in Modes 1 and 2 would be redundant to these other LCOs. Because maintaining the required SDM in Modes 1 and 2 will be ensured by compliance with these retained specifications, the redundant SDM requirement of CTS LCO 3.1.1.1 may be relocated to the TRM. In Mode 2 with k_{eff} < 1.0 and Modes 3, 4, and 5, ITS LCO 3.1.1 establishes the controls for SDM. Additionally, CTS SR 4.1.1.1.1.a and CTS SR 4.1.1.2.a are being relocated to the TRM. In Mode 2 with k_{eff} < 1.0 and Modes 3, 4, and 5 there are no specific requirements for control rod Operability and therefore, these SRs can be addressed outside of the TS. Finally, any changes to these requirements regarding SDM, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

2. 3/4.1.2.1 Minimum Boron Injection Flow Paths, Modes 4, 5, and 6 (3.1 - R.2)
3/4.1.2.2 Minimum Boron Injection Flow Paths, Modes 1, 2, and 3 (3.1 - R.3)
3/4.1.2.3 Charging Pump, Modes 4, 5, and 6 (3.1 - R.4)
3/4.1.2.4 Charging Pumps, Modes 1, 2, and 3 (3.1 - R.5)

CTS 3/4.1.2.1 through 3/4.1.2.4 specify requirements for boration flow paths and charging pumps in the boration flow path. The boration subsystem of the Chemical and Volume Control System (CVCS) provides the means to meet one of the functional requirements of the CVCS, i.e., to control the chemical neutron absorber (boron)

concentration in the RCS and to help maintain the SDM. To accomplish this functional requirement, the CTS requires one or more flow paths to inject borated water into the RCS and appropriate charging pumps to provide the necessary charging head.

The boration subsystem is not assumed to be Operable to mitigate the consequences of a DBA or transient. In the case of a malfunction of the CVCS that causes a boron dilution event, the operator must take action (or automatic response) to close the appropriate valves in the reactor makeup system before the SDM is lost. Operation of the boration subsystem is not assumed to mitigate this event. In addition, the boration subsystem is not used for, nor is it capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a DBA. It also is not used to monitor a process variable, or the status of any design feature, or operating restriction that is an initial condition of a DBA or transient. The boration subsystem is not part of a primary success path in the mitigation of a DBA or transient. Therefore, CTS 3/4.1.2.1 through 3/4.1.2.4 do not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM.

3. 3/4.1.3.3 Position Indication System, Modes 3, 4, and 5 (3.1 - R.8)
3/4.10.5 Position Indication System - Special Test Exceptions, Modes 3, 4, and 5 (3.1 - R.8)

CTS 3/4.1.3.3 and CTS 3/4.10.5 specify requirements for rod position indication in Modes 3, 4, and 5. Control rod operability is assumed for all transients in which a reactor trip is assumed to occur. However, the ±12 step alignment limitation is not assumed in Modes 3, 4 or 5 because the reactor is shutdown. The rod alignment and position indication is only necessary when the reactor is critical to ensure proper power distribution. The position indication system is not used for, nor is it capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a DBA. The position indication system is not used to monitor a process variable, or the status of any design feature, or operating restriction that is an initial condition of a DBA or transient. The position indication system is not part of a primary success path in the mitigation of a DBA or transient. Therefore, CTS 3/4.1.3.3 and CTS 3/4.10.5 do not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Note that CTS 4.1.3.3 is retained as ITS SR 3.1.7.1 for rod position indication in Modes 1 and 2. Any changes to these former requirements regarding the position indication system, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

4. 3/4.1.2.5 Borated Water Sources - Shutdown (3.1- LA15)
3/4.1.2.6 Borated Water Sources - Operating (3.1- LA15)

CTS LCOs 3.1.2.5 and 3.1.2.6 establish the borated water source controls for the Boric Acid Storage System and the Refueling Water Storage Tank (RWST). In addition, LCO 3.1.1.2 Action a includes actions associated with borated water sources in Mode 5. The boration subsystem provides an alternate method for controlling the chemical neutron absorber (boron) concentration in the RCS and helps to maintain the SDM

requirements. These requirements are to be relocated to the TRM. In Modes 1, 2, 3, and 4, the RWST requirements are adequately addressed by ITS LCO 3.5.4, "Refueling Water Storage Tank (RWST)." In Modes 5 and 6, the RWST requirements support the Operability of the Boron Dilution Protection System which are adequately addressed in ITS LCO 3.3.9, "Boron Dilution Protection System (BDPS)" and ITS LCO 3.9.2, "Unborated Water Source Isolation Valves." In Modes 1, 2, 3, 4, and 5, the Boric Acid Storage System function is adequately addressed by the requirements of ITS LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," ITS LCO 3.1.5, "Shutdown Bank Insertion Limits," and ITS LCO 3.1.6, "Control Bank Insertion Limits." In Modes 3, 4, 5, and 6, the potential for the Boric Acid Storage System to adversely impact the boron dilution event is adequately precluded by the requirements of ITS LCO 3.3.9 and ITS LCO 3.9.2. As a result, the relocated requirements are not necessary to be included in the TS to provide adequate protection of the public health and safety. The relocation of this information maintains the consistency with NUREG-1431. Any change to these requirements will be made in accordance with 10 CFR 50.59.

5. 3/4.3.3.2 Movable Incore Detectors (3.3 - R.1)

CTS 3/4.3.3.2 ensures the operability of movable incore detector instrumentation when it is required to monitor the flux distribution within the core. The detectors are used for periodic determination of the power distribution and calibration of the excore detectors, but they are not assumed in any DBA analysis and do not mitigate any accident. Therefore, CTS 3/4.3.3.2 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the Movable Incore Detectors, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

6. 3/4.3.3.3 Seismic Monitoring Instrumentation (3.3 - R.2)

CTS 3/4.3.3.3 ensures the operability of seismic instrumentation used to record data for use in evaluating the effect of a seismic event after the occurrence of such an event. The seismic instrumentation is not relied upon by operators to take immediate action in the event of an earthquake. Additionally, the seismic instrumentation is not used to mitigate a DBA or transient or assumed to function in any safety analysis. Therefore, CTS 3/4.3.3.3 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the Seismic Monitoring Instrumentation, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

7. 3/4.3.3.4 Meteorological Monitoring Instrumentation (3.3 - R.3)

CTS 3/4.3.3.4 ensures the operability of meteorological instrumentation used to record meteorological data for use in evaluating the effect of an accidental radioactive release from the plant. The meteorological instrumentation provides information only and is not used to mitigate a DBA or transient or assumed to function in any safety analysis.

Therefore, CTS 3/4.3.3.4 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the Meteorological Monitoring Instrumentation, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

8. 3/4.3.3.8 Loose Part Detection System (3.3 - R.4)

CTS 3/4.3.3.8 ensures the operability of loose part detection instrumentation used to detect loose parts in the RCS which could cause damage to components in the RCS. The loose part detection instrumentation provides information only and is not used to mitigate a DBA or transient or assumed to function in any safety analysis. Therefore, CTS 3/4.3.3.8 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the Loose Part Detection System, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

9. 3/4.3.3.11 High Energy Line Break (HELB) Instrumentation (3.3 - R.5)

CTS 3/4.3.3.11 ensures the Operability of HELB isolation sensors. The HELB isolation sensors are installed to detect and automatically isolate HELBs in the auxiliary building in either the SG blowdown or auxiliary steam system. The intent of the isolation system is to ensure that a HELB will not result in a significant temperature increase in the auxiliary building above the qualification temperatures of safety related equipment located in the building. The temperature sensors are installed in strategic locations, none of which are part of the reactor coolant pressure boundary, to detect a temperature rise resulting from the local effects of an HELB. The HELB isolation sensors are not used for, nor capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a DBA. The isolation sensors are not a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The isolation sensors are not a structure, system or component that is part of the primary success path which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. Therefore, CTS 3/4.3.3.11 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the HELB Instrumentation, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

10. 3/4.3.4 Turbine Overspeed Protection (3.3 - R.6)

CTS 3/4.3.4 ensures the operability of turbine overspeed protection instrumentation used to trip the turbine to prevent the generation of potentially damaging missiles from

the turbine, in the event of a loss of the turbine speed control system, or a transient. However, the turbine overspeed event is not a DBA and the turbine overspeed protection instrumentation is not considered in any DBA or transient analyses. Therefore, CTS 3/4.3.4 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding Turbine Overspeed Protection, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

11. 3/4.3.3.10 Explosive Gas Monitoring Instrumentation (3.3 - R.7)

CTS 3/4.3.3.10 ensures that the concentration of potentially explosive gas mixtures contained in the gaseous waste processing system is adequately monitored, which helps to ensure that the concentration is maintained below the flammability limit. However, the system is designed to contain detonations and will not affect the function of any safety related equipment. The concentration of oxygen in the gaseous waste processing system is not an initial assumption of any DBA or transient analysis. Therefore, CTS 3/4.3.3.10 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the Explosive Gas Monitoring Instrumentation, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

12. 3/4.4.2.1 Pressurizer Safety Valves, Modes 4 and 5 (3.4 - R.1)

CTS 3/4.4.2.1 protects the RCS from being pressurized above the RCS pressure Safety Limit. The pressurizer safety valves provide over pressurization protection during Modes 1, 2 and 3. The pressurizer safety valves are not assumed to function to mitigate a DBA or transient below Mode 3, because over pressure protection is provided under these conditions by the LTOP requirements in ITS LCO 3.4.12. Therefore, CTS 3/4.4.2.1 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the pressurizer safety valves, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

13. 3/4.4.7 RCS Chemistry (3.4 - R.2)

Poor coolant water chemistry contributes to the long-term degradation of system materials of construction, but is not of immediate importance to the plant operator. Reactor coolant water chemistry is monitored for a variety of reasons. One reason is to reduce the possibility of failures in the RCS pressure boundary caused by corrosion. However, the chemistry monitoring activity serves a long-term preventative rather than mitigative purpose. Therefore, CTS 3/4.4.7 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the RCS Chemistry, as relocated to the TRM, will

be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

14. 3/4.4.9.2 Pressurizer Heatup and Cooldown Limits (3.4 - R.3)

The heatup and cooldown rate limits are placed on the pressurizer to prevent nonductile failure and assure compatibility of operation with the fatigue analysis performed. The limits meet the requirements given in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III, Appendix G. These limitations are consistent with structural analysis results. These limits are not initial condition assumptions of a DBA or transient; however, they do represent operating restrictions, which are addressed by Criterion 2. However, in the NRC Final Policy Statement on TS, the Criterion 2 discussion specified that only those operating restrictions required to preclude unanalyzed accidents and transients need be included in the TS. CTS 3/4.4.9.2 does not meet this test. Therefore, CTS 3/4.4.9.2 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the pressurizer heatup and cooldown limits, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

15. 3/4.4.10 Structural Integrity of ASME Code Class 1, 2, and 3 Components (3.4 - R.4)

The inspection programs for ASME Code Class 1, 2, and 3 components ensure that structural integrity of these components will be maintained throughout the components' life. ASME Code Class 1, 2, and 3 components are monitored so that the possibility of component structural failure does not degrade the safety function of the system. The monitoring activity is a preventive action rather than a mitigative action. While some other requirements in CTS call for important systems to be Operable (e.g., ECCS) and in a ready state for mitigative action, this requirement is directed more toward prevention of degradation and continued long term maintenance of acceptable structural conditions. The Inservice Inspection program is also required by 10 CFR 50.55a. These controls ensure that any changes to these requirements are appropriately reviewed. Hence, it is not necessary to retain a separate requirement to ensure immediate Operability of safety systems. Furthermore, this CTS requirement prescribes inspections to be conducted during plant shutdown, and is not directly important for responding to a DBA. Therefore, CTS 3/4.4.10 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM, with the exception of the Reactor Coolant Pump (RCP) flywheel inspection surveillance. The RCP flywheel inspection requirement has been retained as ITS 5.5.7. Any changes to these former requirements regarding the Structural Integrity of ASME Code Class 1, 2, and 3 components, as relocated to the TRM, will subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

16. 3/4.4.11 RCS Vent Paths (3.4 - R.5)

The reactor vessel head vents are provided to exhaust noncondensible gases and steam from the RCS which could inhibit natural circulation core cooling following any event involving a loss of offsite power and requiring long term cooling, such as a Loss of Coolant Accident (LOCA). The function, capabilities, and testing requirements are consistent with the requirements of Item II.B.1 of NUREG-0737, "Clarification of TMI Action Plan Requirements," however, the operation of these vents is an operator action after the event has occurred and is only required when there is indication that natural circulation is not occurring. Therefore, CTS 3/4.4.11 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the RCS vents, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

17. 3/4.5.4.2 ECCS Subsystems - $T_{avg} \leq 200°F$ (3.5 - R.1)

CTS 3/4.5.4.2 establishes controls which ensure that diverse means of introducing makeup water from the RWST to the RCS are available in the event that a loss of inventory or loss of forced circulation occurs which results in a loss of decay heat removal. The LCO requires a Safety Injection (SI) pump and flow path or an adequate RCS vent to allow gravity feed from the RWST to be available when in Mode 5 and 6 with the pressurizer level less than or equal to 5 percent. These requirements were added in response to GL 88-17, "Loss of Decay Heat Removal." The GL was issued to notify the industry of increasing concerns with recurring events which result in the loss of decay heat removal capability. Of particular concern were operations involving reduced RCS inventory due to the limited time available to respond to a transient before core subcooling is lost. The requirements of the LCO only addresses a small portion of the potential core cooling concerns which may arise during shutdown and refueling operations. As such, the plant has established an outage management program consistent with the guidance provided by NUMARC 91-06. This programmatic approach encompasses those controls currently required by the TS. CTS LCO 3.5.4.2 is not used for, nor capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a DBA. This limitation is not a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. This limitation is not a structure, system or component that is part of the primary success path which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. Therefore, CTS 3/4.5.4.2 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Note that CTS SR 4.5.4.2.1 also provides low temperature overpressure protection from inadvertent SI actuation as indicated in the SER for Byron/Braidwood Amendment 38/25, Section 2.2 dated August 31, 1990. This portion of the requirements is retained in ITS SR 3.4.12.1. Any changes to these former requirements regarding the ECCS Subsystems - $T_{avg} \leq 200°F$, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus,

under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

18. 3/4.7.2 SG Pressure/Temperature Limitation (3.7 - R.1)

CTS 3/4.7.2, "SG Pressure/Temperature Limitation," specifies limits on SG pressures and temperatures to ensure that pressure induced stresses on the SG do not exceed the maximum allowable fracture toughness limits. These pressure and temperature limits are based on maintaining a SG reference transition nil ductility temperature sufficient to prevent brittle fracture. As such, the TS places limits on variables consistent with structural analysis results; these limits, however, are not initial condition assumptions of a DBA or transient, but represent operating restrictions. Therefore, CTS 3/4.7.2 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the SG pressures and temperatures, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

19. 3/4.7.9 Sealed Source Contamination (3.7 - R.3)

CTS 3/4.7.9 provides limitations on sealed source contamination to ensure the total body and individual organ irradiation doses do not exceed allowable limits in the event of ingestion or inhalation. This requirement is not necessary to ensure safe reactor operation. Therefore, CTS 3/4.7.9 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the sealed source contamination and surveillances, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety

20. 3/4.7.12 Area Temperature Monitoring (3.7 - R.4)

CTS 3/4.7.12 requires area temperature monitoring to indicate that safety-related equipment in various areas of the plant is not being subjected to conditions beyond the defined environmental qualification envelope. This information, however, does not serve any primary safety function. Therefore, CTS 3/4.7.12 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding Area Temperature Monitoring, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

21. 3/4.7.8 Snubbers (3.7 - R.5)

Snubbers support the operability of primary components whose operation or function may be an assumption of a safety analysis. However, snubbers are not considered to be part of the primary success path. Their purpose is to prevent unrestrained pipe

motion under dynamic loads while also allowing normal thermal expansion of piping and nozzles to eliminate excessive thermal stresses during heatup and cooldown. The requirements for snubber inspection are also contained in 10 CFR 50.55a and need not be repeated in the ITS. Snubber details are defined in the ISI program. Changes to the ISI program are adequately controlled by 10 CFR 50.55a. Therefore, CTS 3/4.7.8 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the snubbers and associated surveillances, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

22. 3/4.8.4.1 Containment Penetration Conductor Overcurrent Protection Devices (3.8 - R.1)

CTS 3/4.8.4.1 governs Containment Penetration Conductor Overcurrent Protective Devices. These devices are installed to minimize the potential for a fault in a component inside containment, or in cabling which penetrates the containment. This prevents an electrical penetration from being damaged in such a way that the containment structure is breached. Containment electrical penetrations and penetration conductors are protected by either de-energizing circuits not required during reactor operation or by demonstrating the operability of primary and backup overcurrent protection circuit breakers during periodic surveillance. Therefore, CTS 3/4.8.4.1 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding Containment Penetration Conductor Overcurrent Protective Devices, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

23. 3/4.8.4.2 Motor Operated Valves (MOVs) Thermal Overload Protection Devices (3.8 - R.2)

CTS LCO 3.8.4.2 requires that the thermal overload protection devices, integral with the starter of each valve listed in CTS Table 3.8-2a for Unit 1 (CTS Table 3.8-2b for Unit 2), shall be Operable whenever the MOV is required to be Operable. The MOV thermal overload protection minimizes the potential for an improper setting of a thermal overload, which would prevent a vital piece of equipment from performing its intended function. Failure of the MOV Thermal Overload Protection, leading to valve failure, is not specifically modeled in PRAs. This specification does not contain requirements for installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The MOV thermal overload protection helps to preserve the assumptions of the safety analysis by enhancing proper equipment operation; however, the MOV thermal overload protection is not a process variable that is an initial condition of a DBA or transient analysis that either assumes the failure of or present a challenge to the integrity of a fission product barrier. The MOV thermal overload protection is not a structure, system or component that is part of the primary success path and which functions or actuates to mitigate a

DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. Therefore, CTS 3/4.8.4.2 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding MOV Thermal Overload Protection Devices, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

24. 3/4.9.5 Communications Between Control Room and Refueling Station (3.9 - R.2)

CTS 3/4.9.5 ensures that refueling station personnel can be promptly informed of significant changes in facility status or core reactivity conditions during Core Alterations. Communications allow for coordination of activities that require interaction between the control room and containment personnel. However, the refueling system design accident or transient response does not take credit for communications. Therefore, CTS 3/4.9.5 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the requirements for communications capabilities, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

25. 3/4.9.6 Containment Refueling Machine (3.9 - R.3)

CTS 3/4.9.6 ensures that the equipment used to handle fuel within the reactor pressure vessel functions as designed and that the equipment has sufficient load capacity for handling fuel assemblies and control rods. Although the interlocks designed to provide the above capabilities can prevent damage to the refueling equipment and fuel assemblies, they are not assumed to function in mitigating the consequences of a DBA. Therefore, CTS 3/4.9.6 does not meet any of the criteria in 10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding the Refueling Machine, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

26. 3/4.9.7 Load Handling Restrictions over Fuel Assemblies in Storage Pool (3.9 - R.4)

The restriction on movement of loads in excess of the nominal weight of one fuel assembly containing a Rod Control Cluster Assembly, plus the weight of the fuel handling tool, over other fuel assemblies in the storage pool ensures that, in the event the load is dropped, the activity release will be limited to that contained in one fuel assembly and any possible distortion of the fuel in the storage racks will not result in a critical array. Administrative monitoring of loads moving over the fuel storage racks serves as a backup to the crane interlocks. Although CTS 3/4.9.7 supports the maximum refueling accident assumption in the DBA, the crane travel limits are not monitored and controlled during operation; they are checked on a periodic basis to ensure operability. Therefore, CTS 3/4.9.7 does not meet any of the criteria in

10 CFR 50.36 and may be removed from the CTS and relocated to the TRM. Any changes to these former requirements regarding Crane Travel - Spent Fuel Storage Facility, as relocated to the TRM, will be subject to the requirements of 10 CFR 50.59. Thus, under 10 CFR 50.59, sufficient regulatory controls exist to ensure continued protection of the public health and safety.

27. 3/4.9.3 Decay Time (3.9 - LA6)

CTS LCO 3.9.3 establishes a time limit on reactor subcriticality prior to the movement of irradiated fuel assemblies. This ensures that sufficient time has elapsed for the radioactive decay of short-lived fission products and is consistent with the assumptions used in the safety analysis. However, the schedule restraints of the activities required prior to moving irradiated fuel in the reactor vessel after a shutdown prevents the time limit of this specification from being exceeded. The preparations for moving fuel include RCS cooldown, depressurization, boration, removal of the reactor vessel head and upper internals and flooding the reactor cavity to the required level. Therefore, the requirement is not required to be in the TS to provide adequate protection of the public health and safety and may be relocated to the TRM. The relocation of this requirement also maintains the consistency with NUREG-1431. Any change to this requirement will be made in accordance with 10 CFR 50.59.

The relocated specifications from the CTS discussed above are not required to be in the TS because they do not meet any criteria in 10 CFR 50.36(c)(2)(ii). They are not needed to obviate the possibility that an abnormal situation or event will give rise to an immediate threat to the public health and safety. In addition, the NRC staff finds that sufficient regulatory controls exist under the regulations cited above to maintain the effect of the provisions in these specifications. The NRC staff has concluded that appropriate controls have been established for all of the current specifications, information, and requirements that are being moved to the TRM. This relocation is the subject of a license condition discussed in Section V of this SE. Until incorporated in these licensee-controlled documents, changes to these specifications, information, and requirements will be controlled in accordance with the current applicable procedures that control these documents. Following implementation, the NRC will audit the relocated provisions to ensure that an appropriate level of control has been achieved. The NRC staff has concluded that, in accordance with the Commission's Final Policy Statement, sufficient regulatory controls exist under the regulations, particularly 10 CFR 50.59, to adequately ensure that the relocations discussed above will not adversely impact safe operations at the Byron and Braidwood units. Accordingly, these specifications, information, and requirements, as described in detail in this SE, may be relocated from the CTS and placed in the identified licensee-controlled documents as specified in the licensee's letter dated December 13, 1996, as supplemented by letters dated February 24, September 2, October 10, October 28, December 8, 1997, January 27, January 29, February 6, February 13, February 24, February 26, April 13, April 16, June 1, June 2, July 2, July 8, July 30, July 31, August 11, August 12, September 21, September 25, October 1, October 2, October 5, October 15, October 23, November 6, November 19, November 23, November 30 and December 14, 1998.

F. Control of Specifications, Requirements, and Information Relocated from the CTS

In the ITS conversion, the licensee will be relocating specifications, requirements, and detailed information from the CTS to licensee-controlled documents outside the CTS. This is discussed in Section III.D and III.E above. The facility and procedures described in the UFSAR and TRM, incorporated into the UFSAR by reference, can only be revised in accordance with the provisions of 10 CFR 50.59, which ensures records are maintained and establishes appropriate control over requirements removed from the CTS and over future changes to the requirements. Other licensee-controlled documents contain provisions for making changes consistent with other applicable regulatory requirements; for example, the Offsite Dose Calculation Manual can be changed in accordance with ITS 5.5.1; the Emergency Plan Implementing Procedures (EPIPs) can be changed in accordance with 10 CFR 50.54(q); and the administrative instructions that implement the QA plan can be changed in accordance with 10 CFR 50.54(a) and 10 CFR Part 50, Appendix B. Temporary procedure changes are also controlled by 10 CFR 50.54(a). The documentation of these changes will be maintained by the licensee in accordance with the record retention requirements specified in the licensee's QA plans for Byron and Braidwood and such applicable regulations as 10 CFR 50.59.

The license condition for the relocation of requirements from the CTS, discussed in Section V of this SE, will address the implementation of the ITS conversion, and will govern when relocation of the CTS requirements into licensee-controlled documents will be completed. The relocations to the UFSAR and TRM may be included in the next required update of these documents in accordance with 10 CFR 50.71(e).

G. Evaluation of Other TS Changes Included in the Application for Conversion to ITS

This section addresses the beyond scope issues in which the licensee proposed changes to the CTS that differ from the corresponding requirements in the STS. The staff had provided notice of consideration for these beyond scope issues in the Federal Register. The changes discussed below are listed in the order of the applicable ITS Sections and requirements. Each evaluation is annotated with the associated DOC number as appropriate.

1. Heat Flux Hot Channel Factor
CTS LCO 3.2.2 (3.2-L.9)
ITS LCO 3.2.1

CTS LCO 3.2.2 ensures compliance with F_Q fuel design limits by a bounding analysis that is verified in the plant by monitoring a height dependent radial peaking factor $F_{XY}(Z)$. The CTS denotes associated LCOs, Actions, and SRs for the $F_{XY}(Z)$ methodology. ITS LCO 3.2.1 denotes associated LCOs, Actions, and SRs for a method based on an equilibrium $F_Q(Z)$ surveillance ($F_Q(Z)W(Z)$ methodology). The Byron and Braidwood methodology has been revised to conform to the methodology established in WCAP-10216-P. The basis for the change is provided in a letter from N.J. Liparulo (Westinghouse Electric Corporation) to R.C. Jones (NRC) dated October 29, 1993, "Relaxation of Constant Axial Offset Control - F_Q Surveillance Technical Specification." This report describes an NRC-approved methodology developed by Westinghouse for performing power distribution control and accounts for F_Q increases greater than 2%

between measurements to enhance the existing surveillance methodology. The proposed methodology change provides more available margin to the $F_Q(Z)$ limit than is currently available with the $F_{XY}(Z)$ surveillance methodology. The $F_{XY}(Z)$ methodology is based on a 1 dimension-2 dimension synthesis of data whereas the $F_Q(Z)W(Z)$ methodology is a more advanced 3 dimension calculation. The CTS was revised to replace the $F_{XY}(Z)$ method by the $F_Q(Z)W(Z)$ method. NUREG-1431 provides the option for either the $F_{XY}(Z)$ methodology or the $F_Q(Z)W(Z)$ methodology.

The NRC has previously reviewed this methodology and has accepted the latest revision in a Safety Evaluation Report dated November 26, 1993. The model TS (of the WCAP 10216-P) are reformatted to be consistent with NUREG-1431.

2. Boron Dilution System - Instrumentation
CTS SR 4.1.2.7 Table 4.3-1 (3.3-L.11)
ITS SR 3.3.9.8

The proposed change is based on "Generic Changes", proposed by WOG-58 8/96, to the STS, NUREG-1431. SR 3.3.9.2 of WOG-58 8/96 states that a Channel Operational Test on the Boron Dilution Protection System (BDPS) instrumentation must be performed every 92 days. The proposed SR 3.3.9.8 for Byron and Braidwood adds a note to adopt the contents of SR 3.3.9.2 of WOG-58 which states that this test is "Not required to be performed prior to entering Mode 3 from Mode 2 until 4 hours after entering into Mode 3." This same SR Note is contained in STS SR 3.3.1.7 for the power range and source range nuclear instrumentation. The licensee stated in their submittal that "testing cannot be performed in the higher Mode or condition without utilizing jumpers or lifted leads. Use of these devices is not recommended since minor errors in their use may significantly increase the probability of a reactor transient or event which is a precursor to a previously analyzed accident." The staff has reviewed the proposed changes and the licensee's justification and finds them acceptable.

3. RCS Total Flow Surveillance Frequency Note
CTS SR 4.2.3.5 (3.4-M.15)
ITS SR 3.4.1.4 Note

The Surveillance Note requiring verification of the measured RCS total flow (by performance of a precision heat balance) is increased to 7 days after reaching $\geq$ 90% RTP. The current plant TS do not specify a time limit for this calibration but do require the RCS total flow rate to be determined by precision heat balance measurement prior to completion of physics tests. The STS specify a 24 hour time interval once 90% RTP is reached. In order to get an accurate indication of reactor power, ComEd typically performs the heat balance at approximately 98% RTP. Therefore, any unexpected delays in the ascent from 90% to 98% RTP could cause the 24 hour surveillance Completion Time to be missed. During the performance of the last two precision heat balances, there was only a 0.2% and a 0.43% deviation between the actual precision heat balance measurements and the computer calculations, with the computer reading higher in both cases. Therefore, since this parameter does not normally change significantly, there appears to be no need to perform this test in the first 24 hours after

reaching 90% RTP. In addition, the 7 day frequency has previously been approved for Vogtle, Ginna, and Zion. Therefore, the staff finds it acceptable for Byron and Braidwood.

4. RCS P/T Limits
CTS LCO 3.4.9.1 (3.4-L.28)
ITS LCO 3.4.3

The proposed change would modify Action B.2 in LCO 3.4.3. Action B.2 requires the plant to be in Mode 5 with RCS pressure < 500 psig within 36 hours. The proposed modification requires the plant be in Mode 5 within 36 hours, omitting the need for the RCS pressure < 500 psig.

In their response to the staff's RAI dated February 12, 1998, ComEd indicated that there may exist instances where the Byron and Braidwood RCS pressure and temperature are within the limits of the P/T curve for Mode 5 and the pressure limit is greater than 500 psig. Consequently, maintaining the RCS pressure < 500 psig at an RCS temperature of 200°F would not be required to remain within the acceptable range of the P/T curves.

ComEd's proposed change to base the TS on operation within the curve rather than specifying a specific pressure boundary that may or may not fit the current P/T curves is appropriate, and therefore the staff finds this change acceptable.

5. RCS Loops - Isolated
CTS LCO 3.4.1.5.2 (3.4-L.18)
ITS LCO 3.4.18.

The requirement by which an isolated RCS loop can be unisolated is revised to require the isolated loop boron concentration to be greater than or equal to the required SDM boron concentration of the unisolated portion of the RCS. The current LCO requires an isolated loop to remain isolated as long as the boron concentration of the isolated loop is less than the boron concentration of the operating loops. The proposed change would allow an isolated loop to be unisolated even if the boron concentration of the isolated loop is less than the unisolated portion of the RCS as long as the isolated loop concentration is greater than the required RCS boron concentration to meet the SDM requirements of LCO 3.1.1 (in Mode 5) or LCO 3.9.1 (in Mode 6). With both the isolated loop and the unisolated portion of the RCS above the boron concentration requirements for SDM, opening the isolation valves will not result in a dilution event which could violate SDM. Therefore, the proposed change is acceptable.

6. RCS Loop - SR Change for Determining Boron Concentration
CTS SR 4.4.1.5.2.2 (3.4-L.14)
ITS SR 3.4.18.2

The Surveillance Frequency is proposed to be changed from 2 hours to 4 hours for verifying boron concentration prior to opening an isolation valve in an isolated loop. The justification given for this proposed change states that the amount of time to sample and

confirm the concentration results may delay returning the unit to power operations. In addition, based on the staff's concern, ComEd has also stated that once an RCS loop is filled there is no possible dilution path and therefore there exists reasonable assurance that the boron concentration will remain within acceptable limits until the loop is unisolated. Based on this, the staff finds the proposed change acceptable.

7. ECCS Seal Injection Flow
CTS LCO 3.4.6.2.e (3.4-L.4)
ITS LCO 3.5.5

The proposed change to ITS LCO 3.5.5 and SR 3.5.5.1 requires the Seal Injection Flow (SIF) be within the limits of Figure 3.5.5-1 which specifies an acceptable region of SIF limits in function of the difference between the charging pump discharge head pressure and the RCS pressure. Since the CTS uses only a single number (40 gpm) limit for SIF, this change is classified as a beyond scope TS conversion item.

Based on the technical data provided by the licensee, the staff finds that the proposed limits of SIF will not cause insufficient ECCS flow from the charging flow during a LOCA. This is mainly because the proposed SIF limits are developed based on the same data used in the ECCS calculation for a LOCA. As an added conservatism, the portion of the total SIF which goes into the RCS is not credited in the LOCA analysis. Therefore, the staff concludes that the proposed ITS LCO 3.5.5 and SR 3.5.5.1 are acceptable.

8. Containment Isolation Valves (CIVs)
CTS LCO 3.6.1.7 (3.6-A.25)
ITS LCO 3.6.3

The proposed Required Actions A.1, B.1, and C.1 specify actions to be taken in response to inoperable CIVs. The licensee is to isolate the affected penetration flow path by use of at least one closed barrier, such as a closed and de-activated automatic or remote manual valve, closed manual valve, blind flange, or check valve with flow through the valve secured. "Closed and deactivated remote manual valve" is an addition not contained in the STS, but is considered a clarification to the CTS. Use of a de-activated remote manual valve satisfies the intent of positively isolating the penetration and is considered part of the original intent of the Action in the CTS. Since the result of the Action continues to be an acceptably isolated penetration for continued reactor operation and reflects the intent of the CTS Action, the change is considered to be administrative and the staff finds it to be acceptable.

9. Electrical Power Systems - AC Sources - Operating
CTS LCO 3.8.1.1 (3.8-L.28)
ITS LCO 3.8.1

The licensee has proposed to modify ITS LCO 3.8.1. and its associated Conditions and Required Actions to reflect the Byron and Braidwood design. The design includes a normal qualified and a reserve qualified circuit to each of the 4.16 kV Class 1E buses. The normal circuits to the Class 1E buses are via the unit-specific System Auxiliary

Transformers (SATs). The reserve circuits come from the opposite unit's SATs via the opposite unit's 4.16 kV Class 1E buses. To incorporate the CTS requirements into the ITS format, the licensee has proposed to modify STS LCO 3.8.1 to reflect the requirement of two qualified circuits per bus. Consistent with that change, the licensee has also proposed to modify STS LCO 3.8.1 Conditions A and C to reflect the allowance for one or more buses with one (Condition A) or two (Condition C) required qualified circuits to be inoperable. The proposed Condition A, "one or more buses with one required qualified circuit inoperable" and Condition C, "one or more buses with two required qualified circuits inoperable," reflect the plant specific design and were already part of the CTS which was previously approved by the staff. The conversion is, therefore, acceptable.

Consistent with the above changes, the licensee has also proposed to modify STS LCO 3.8.1 Condition D. STS LCO 3.8.1 Condition D provides Required Actions for one offsite circuit and one Diesel Generator (DG) inoperable but does not provide an explicit Action for the situation of a DG inoperable and one bus with two required qualified circuits inoperable. It also does not provide an explicit action for the situation of a DG inoperable and one or more buses with one required qualified circuit inoperable. The licensee has therefore proposed to modify Condition D to explicitly include these actions to make it consistent with the previously described changes. The staff has reviewed the changes made to Condition D and finds that they are in accordance with the guidance provided in Regulatory Guide 1.93, "Availability of Electric Power Systems" and are therefore acceptable.

Likewise, the licensee proposed to modify STS LCO Condition G to reflect the scenarios where entering LCO 3.0.3 is appropriate. The licensee has modified the requirements for Condition G to read, "Two DGs inoperable and one or more buses with one or more required qualified circuits inoperable OR one DG inoperable, one bus with two required qualified circuits inoperable, and the second bus with one or more required qualified circuits inoperable." Condition G corresponds to a level of degradation in which all redundancy in the AC electrical power supplies may be lost. At this severely degraded level, any further losses in the AC electrical power system may cause a loss of function. Therefore, no additional time is justified for continued operation. The unit is required by LCO 3.0.3 to commence controlled shutdown. This reflects the plant specific design and provides additional clarification and is, therefore, acceptable.

10. Electrical Power Systems - AC Sources
CTS SR 4.8.1.1.1.b, 4.8.1.1.2.f.5, 4.8.1.1.2.f.6.c (3.8-L.26 and 3.8-L.29)
ITS SR 3.8.1.8, 3.8.1.12

The licensee has proposed to delete the shutdown requirement for the conduct of CTS SRs 4.8.1.1.1.b, 4.8.1.1.2.f.5, and 4.8.1.1.2.f.6.c. These SRs would appear as ITS SR 3.8.1.8, 3.8.1.12, and 3.8.1.13, respectively. With respect to CTS SR 4.8.1.1.1.b, the reason for the restriction is to preclude system perturbations with a unit at power that could challenge safety systems; however, at Byron and Braidwood, the licensee has developed a "bumpless" transfer from the preferred offsite power source to the alternate source which is conducted during on-line maintenance of the SATs. On-line

maintenance of the SATs was addressed in a letter from T.W. Simpkin (ComEd) to T.E. Murley (NRC) dated February 24, 1993. The transfer from preferred to alternate source to conduct on-line maintenance satisfies the requirements of ITS SR 3.8.1.8. Therefore, deletion of the restriction to conduct this SR while shutdown is acceptable. Furthermore, the licensee has proposed to delete the shutdown requirements for performance of CTS SRs 4.8.1.1.2.f.5 and 4.8.1.1.2.f.6.c. These SRS will appear in ITS as SRs 3.8.1.12 and 3.8.1.13, respectively. The justification provided by the licensee is that SR 3.8.1.12 only requires the DG to start on an ESF signal. There is no requirement to load safety features on the ESF busses and the potential for system perturbations do not exist. The staff accepts this justification; however, performance of this SR with the unit at power requires that safety systems be blocked from receiving the ESF signal generated to start the DG. This makes the safety systems on the train being tested inoperable for the duration of the test. To address this concern, not all safety functions can be associated with the train not being tested. Based on this and on the short period of time safety functions will be inoperable during performance of SR 3.8.1.12, the staff concludes that deleting the shutdown requirements is acceptable. Since SR 3.8.1.12 can be conducted without loading the ESF busses, SR 3.8.1.13 (verifying DG auto tripped are bypassed) can be conducted at the same time without causing system perturbations. Therefore, deleting the shutdown requirement associated with SR 3.8.1.13 is also acceptable.

11. Electrical Power Systems - AC Sources
CTS SR 4.8.1.1.2.f.3 (3.5-L.24)
ITS SR 3.8.1.10

The licensee has proposed to add a Note to ITS SR 3.8.1.10 which states that momentary transients above the DG full load reject voltage do not invalidate the test. SR 3.8.1.10 is a DG full load reject test which has a maximum voltage of 4784 volts AC (VAC) as an acceptance criteria. The staff questioned the purpose of the Note and the licensee responded by stating that the Note was intended to address the instantaneous voltage excursion that occurs immediately following a load rejection. The licensee agreed to modify the Bases to include a discussion of this proposed Note which states, to the effect, that the Note addresses the instantaneous voltage spike that occurs immediately upon breaker opening, lasts for a few milliseconds, and may or may not be observed on monitoring or recording instrumentation. With this change to the Bases, the staff concludes that the SR acceptance criteria are not invalidated and the proposed Note is, therefore, acceptable.

12. Electrical Power Systems - AC Sources - Operating
CTS SR 4.8.1.1.2.a.5, 4.8.1.1.2.f.3, 4.8.1.1.2.f.7 & Footnote *, 4.8.1.1.2.f.7 & Footnote**
(3.8-L.25 and 3.8-L.27)
ITS SRs 3.8.1.3, 3.8.10, 3.8.14, 3.8.15

The licensee has proposed to modify ITS SR 3.8.1.3 (31 day, 60 minute run), SR 3.8.1.10 (full load reject), and SR 3.8.1.14 (24 hour run) to include 90% to 100% of the continuous rating of the DGs load band (4950 kW to 5500 kW), has added a Note to ITS SR 3.8.1.15 (hot restart) to include this load band. This proposed change is less

restrictive than the current requirements of CTS SRs 4.8.1.1.2.a.5), 4.8.1.1.2.f.3), and 4.8.1.1.2.f.7) which specified the loading of the diesel generator to greater than or equal to the continuous rating of the DGs (5500 kW). The staff reviewed the licensee's proposed changes to ITS SRs 3.8.1.3, 3.8.1.10, and 3.8.1.14 and finds the proposal to be consistent with NUREG-1431 and Regulatory Guide 1.9, Revision 3. Regulatory Guide 1.9 recommends that these tests be conducted at 90% to 100% of the DG continuous rating. For Byron and Braidwood, the maximum expected accident load for the worst case DG loading is 5166 kW (Byron DG 1A - during the first 30 minutes), and the licensee has stated in their submittal that conducting the tests utilizing the proposed load band still is representative of the postulated conditions for their plant DGs. Furthermore, performing tests at greater than or equal to the continuous rating of the DGs can increase the need for DG tear down and maintenance. The staff reviewed the proposed new Note added to SR 3.8.15 (hot restart) and Footnote * associated with CTS SR 4.8.1.1.2.f.7), and finds that Footnote * includes an allowance to load the DG for the first two hours of the 24 hour test within a load band of +0 kW, -150 kW of the 2-hour rating of the DG (6050 kW). To be consistent with NUREG-1431, the licensee modified the load band in ITS SR 3.8.1.14 to include a 105% to 110% of the DG continuous rating (5775 kW - 6050 kW) load band. The 110% corresponds to the 2-hour rating, while the 105% corresponds to -275 kW from the 2-hour rating. Regulatory Guide 1.9, Revision 3 recommends that the first two hours of the 24 hour test be conducted at 105% to 110% of the continuous rating. Based on the above review, the staff finds the proposed change does not have an adverse impact on safety, is consistent with STS; and therefore the proposed conversion is acceptable.

13. Electrical Power Systems - AC Sources - Operating
CTS SRs 4.8.1.1.2.a.4, 4.8.1.1.2.f.2, 4.8.1.1.2.f.4.b, 4.8.1.1.2.f.5, 4.8.1.1.2.f.6.b
(3.8-M.11)
ITS SR 3.8.1.2, 3.8.1.7, 3.8.1.9, 3.8.1.11, 3.8.1.12, 3.8.1.15, 3.8.1.19

The licensee has proposed to raise the minimum acceptable steady state voltage level for emergency diesel generators specified in ITS SR 3.8.1.2, 3.8.1.7, 3.8.1.9, 3.8.1.11, 3.8.1.12, 3.8.1.15, and 3.8.1.19, from the current minimum voltage requirement of 3740 volts to 3950 volts, which is more restrictive. The staff reviewed CTS SRs 4.1.1.2 (4.8.1.1.2.a.4 - start from ambient condition, 4.8.1.1.2.f.2 - largest load rejection, 4.8.1.1.2.f.4.b - 18 month surveillance, 4.8.1.1.2.f.5 - 18 month ESF start, and 4.8.1.1.2.f.6.b - ESF start), and finds that the current requirement for the minimum acceptable diesel generators voltage for these surveillance to be at 4160-4210 volts level. The licensee stated in their submittal that as a result of the ComEd Dresden's Nuclear Power Station Electrical Distribution System Functional Inspection (EDSFI), setpoint calculations were performed to determine the adequacy of the second level (degraded) undervoltage setpoints. These calculations resulted in new, more conservative (i.e., higher), setpoints for the second level undervoltage relays. The licensee further stated that the new setpoints are set to ensure that equipment downstream of the 4.16 kV buses (i.e., at the 480 VAC and 120 VAC levels) will receive sufficient voltage levels in order to operate satisfactorily in the performance of their safety related functions during a transient. In support of these more conservative settings, the licensee raised the emergency diesel generator's minimum

acceptable voltage level of 3740 volts to a value of 3950 volts AC. The licensee further stated that this change is consistent with their plant specific analyses and is under current procedural controls, and that this higher value is within the capabilities of the Byron/Braidwood equipment, and thus will ensure that in the event of a Loss of Offsite Power, the necessary low voltage sensitive components will operate as required. The staff reviewed plant specific design and concurs with the licensee that increasing the minimum acceptable voltage from 3740 VAC to 3950 VAC for emergency DGs at Byron and Braidwood represents a more restrictive requirement. Based on the above review, the staff finds the proposed change does not have an adverse impact on safety, the new minimum voltage level is consistent with licensee's technical analyses, under plant procedural control, is consistent with STS; and therefore, the proposed change is acceptable.

14. Containment Penetrations
CTS LCO 3.9.4 (3.9-M.8)
ITS LCO 3.9.4, SR 3.9.4.3

The licensee proposes to add a new SR, SR 3.9.4.3, to LCO 3.9.4 and to make associated additions to the Bases. The new SR requires the verification of each required containment purge valve isolation time consistent with the Inservice Testing (IST) program. The isolation time surveillance ensures that each containment purge supply and exhaust valve, in penetrations which provide direct access from the containment atmosphere to the outside atmosphere, is capable of closing within the assumptions of the safety analysis following a fuel handling accident.

CTS SR 4.9.4.1 requires, during Core Alterations or movement of irradiated fuel in the containment, the verification that each containment purge isolation valve actuates to the isolation position, but does not require the isolation time for each valve to be verified. ITS SR 3.9.4.3 retains the closure surveillance and adds a surveillance for the isolation time. The verification of the isolation time ensures that the closure of the containment purge isolation valves during a fuel handling accident are within the assumptions of the safety analyses. The addition of this requirement to the TS represents a more restrictive change and provides an additional check on valve operability that is absent from the CTS. Therefore, the staff finds the proposed change (i.e, addition of SR 3.9.4.3) to be acceptable.

15. Plant Systems - Control Room Ventilation, Non-Accessible Area Exhaust Filter Plenum Ventilation System, Refueling Operations - Fuel Handling Building Exhaust Filter Plenums
CTS 3.7.6, 3.7.7, 3.9.12 (5.0-L.7)
ITS 5.5.11

Various ventilation filter testing requirements of CTS sections 3/4.7.6, 3/4.7.7 and 3/4.9.12 specify that testing be performed "in accordance with" the applicable Regulatory Guide or ANSI Standard. The licensee proposes that the required testing in Administrative Control Section 5.5.11 of the ITS be performed "in conformance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1980, with any exceptions noted in

Appendix A of the UFSAR." This change identifies the portions of the Regulatory Guide 1.52 and ANSI N510-1980 that are not applicable to the design of the plant. Any future exceptions to Regulatory Guide 1.52 and/or ANSI N510-1980 will be evaluated in accordance with 10 CFR 50.59 and documented in UFSAR Appendix A consistent with current practice. Therefore, the staff finds this change acceptable.

CTS 4.7.6.c.2, 4.7.6.d, 4.7.6.h.2, 4.7.6.j, 4.7.7.b.2, 4.7.7.c, 4.9.12.b.2, and 4.9.12.c require that laboratory analyses of the carbon samples be tested at 30 °C and that the test procedures of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Postaccident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," be used. Regulatory Position C.6.a refers to Table 2 of Regulatory Guide 1.52. Table 2 references Test 5.b of Table 5-1 of ANSI N509-1976, "Nuclear Power Plant Air-Cleaning Units and Components." Test 5.b references the test method from paragraph 4.5.3 of Military Specification RDT M 16-1T, "Gas Phase Adsorbents for Trapping Radioactive Iodine and Iodine Components" (date not indicated). The essential elements of this test are as follows:

- 95 percent relative humidity (RH) or 70 percent for systems with RH control,
- 5-hour pre-equilibration (pre-sweep) time, with air at 30°C and 95 or 70 percent RH,
- 2-hour challenge, with gas at 30°C and 95 or 70 percent RH, and
- A 2-hour elution (post-sweep) time, with air at 30°C and 95 or 70 percent RH.

The licensee has proposed to relocate these surveillances to TS Section 5.5.11.c of the ventilation filter testing program (VFTP). Proposed TS 5.5.11.c also requires that samples be obtained as described in Regulatory Guide 1.52, Revision 2, but specifies that the samples be tested in accordance with ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," at 30°C and 95 or 70 percent Relative Humidity (RH). The essential elements of the proposed TS change for testing per ASTM D3803-1989 are:

- 95 percent relative humidity (RH) or 70 percent for systems with RH control,
- 2-hour thermal stabilization, at 30°C,
- 16-hour pre-equilibration (pre-sweep) time, with air at 30°C and 95 or 70 percent RH,
- 2-hour equilibration time, with air at 30°C and 95 or 70 percent RH,
- 1-hour challenge, with gas at 30°C and 95 or 70 percent RH, and
- 1-hour elution (post-sweep) time, with air at 30°C and 95 or 70 percent RH.

The major differences between the current and proposed TS requirements for carbon testing are:

MAJOR DIFFERENCES	Proposed TS	Current TS
Total Pre-Test Equilibration	18 hours	5 hours
Tolerances of Test Parameters	Smaller	Larger

ASTM D3803-1989 provides results which are reproducible compared to RDT M16-1T because it has smaller tolerances on various test parameters, and it requires that the charcoal sample be pre-equilibrated for a much longer period. The longer pre-equilibration time is more conservative because it will completely saturate the representative charcoal sample until it is in the condition to which the subject charcoal adsorbers are expected to be exposed during design-basis conditions. During the pre-equilibration, the charcoal is exposed to a flow of air controlled at the test temperature and RH before the challenge gas is fed through the charcoal. The purpose of the pre-equilibration phase of the test is to ensure that the charcoal has stabilized at the specified test temperature and RH for a period of time which results in the charcoal adsorbing all the available moisture before the charcoal is challenged with methyl iodide. Hence, the proposed testing in accordance with ASTM D-3803-1989 standard would result in a more realistic prediction of the capability of the charcoal.

In addition, proposed TS 5.5.11.c requires that the laboratory testing of charcoal samples shows an acceptable methyl iodide penetration. In the licensee's dose analysis, the Control Room Ventilation (VC) filtration system (makeup), the VC filtration system (recirculation), and the non-accessible area exhaust filter plenum ventilation system charcoal beds are credited with a filter efficiency of 99 percent, 90 percent, and 90 percent, respectively. The FHB ventilation system charcoal beds are credited with a filter efficiency for the elemental and organic forms of radioiodine of 90 percent and 30 percent, respectively. The licensee's proposed acceptance criteria is a methyl iodide penetration of less than 0.5 percent, 4 percent, 4.5 percent, and 10 percent for the VC filtration system (makeup), the VC filtration system (recirculation), the non-accessible area exhaust filter plenum ventilation system, and the FHB ventilation system, respectively. The proposed acceptance criteria for the VC filtration system (makeup), the VC filtration system (recirculation), the non-accessible area exhaust filter plenum ventilation system includes a safety factor of 2, 2.5, and 2.22, respectively. This provides the staff with a degree of assurance that, at the end of the operating cycle, the charcoal will be capable of performing at a level at least as good as that assumed in the licensee's dose analysis. This factor of safety is acceptable based on the accuracy of test results obtained using the ASTM D3803-1989 standard. The proposed acceptance criteria

for the FHB ventilation system includes a safety factor of 7 when considering the 30 percent credit efficiency for the organic forms of radioiodine. The staff previously approved an acceptance criteria of 10 percent in Supplement No. 2 of the original Safety Evaluation Report for the Byron and Braidwood, and found it acceptable. The staff has evaluated the proposed TS changes and concludes that they are acceptable.

16. High Radiation Area (HRA)
CTS 6.12 (5.0-L.2)
ITS 5.7

The licensee's proposal generally conforms with the standard industry controls, whereby Radiation Work Permits (RWPs) or equivalent work control procedures are used, special dosimetry is required, options for workplace monitoring are included, and other graded control mechanisms are required. Additionally, consistent with the requirements of 10 CFR 20.1601, the licensee has limited the application of the HRA TS, i.e., Section 5.7 of TS does not apply to very high radiation areas (areas having dose rates greater than 500 rads in one hour at 1 meter). This truncation and dose rate capping will help prevent the misapplication of these TS, and this and other changes are proposed in response to the 1991 revision of Part 20 HRA requirements.

Another significant proposed change involves Section 5.7.2.e, where after a pre-job briefing, workers escorted by qualified individuals (e.g., Health Physics technicians) may enter areas before current work site dose rates are known.

The purpose of 10 CFR 20.1601 is to protect workers against relatively high radiation levels by preventing inadvertent and unauthorized entries into HRAs. The staff has reviewed the licensee's proposal and finds it is consistent with good radiological work practice and will provide an adequate level of radiation protection consistent with the intent of Part 20 HRA requirements.

17. Plant Systems - Non-Accessible Area Exhaust Filter Plenum Ventilation System
CTS 3.7.7 (3.7-L.27 and 5.0-L.3)
ITS LCO 3.7.12 and Specification 5.5

This beyond scope item applies to Braidwood Station only (this change was approved for Byron by SE dated 10/22/93). Currently, several of the SRs in CTS 4.7.7 for the non-accessible area exhaust filter plenum require verification of both train and bank flow rates. ComEd is proposing that the bank flows be verified only after any structural maintenance or modification to the filter housing. The flow distribution for the nonaccessible area exhaust filter plenum ventilation was set during initial construction by installation of welded baffle plates. Since there are no moveable dampers controlling flow distribution there is no reason for the flow distribution to change. The initial startup test program verified that the flow distribution was acceptable and subsequent surveillances have found no change in the air flow distribution since the baffle plates were installed. Current plant procedures require a monthly surveillance of the differential pressure across each on-line HEPA filter and an 18-month visual inspection

of the HEPA filter banks. These surveillances will provide adequate assurance that the HEPA filters have not become clogged. In addition, the performance of the bank flow verification requires that plant staff take measurements inside the plenums while the fans are in operation. This poses a potential safety hazard. Based on the fixed flow controls for the plenums and the implementation of a verification surveillance should modifications be performed, the deletion of the current bank flow rate SR is acceptable.

IV. COMMITMENTS RELIED UPON

In reviewing the proposed ITS conversions for Byron and Braidwood, the staff has relied upon the licensee commitment to relocate certain requirements from the CTS to licensee-controlled documents as described in Table LA and Table R attached to this SE. These tables reflect the relocations described in the licensee's submittals on the conversion. The licensee has been requested to propose a license condition to make this commitment enforceable. Such a commitment from the licensee is important to the ITS conversion because the acceptability of removing certain requirements from the TS is based on those requirements being relocated to licensee-controlled documents where further changes to the requirements will be controlled by the regulations (e.g., in accordance with 10 CFR 50.59). See Section V for details.

V. LICENSE CONDITIONS

In its application of December 13, 1996, the licensee discussed the problems with the first performance of the SRs in the ITS that will be new or revised compared to the SRs in the CTS. Accordingly, the staff communicated to the licensee, in its letter of November 5, 1998, that the licensee should propose a license condition in this regard, and that the following guidelines would be used to evaluate the proposed license condition:

- For SRs that are new in this amendment, the first performance is due at the end of the first surveillance interval that begins on the date of implementation of this amendment.

- For SRs that existed prior to this amendment whose intervals of performance are being reduced, the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of this amendment.

- For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance is due at the end of the first surveillance interval that began on the date the surveillance was last performed prior to the date of implementation of this amendment.

- For SRs that existed prior to this amendment whose intervals of performance are being extended, the first extended surveillance interval begins upon completion of the last surveillance performed prior to the implementation of this amendment.

In its letter of November 19, 1998, the licensee proposed the following license condition to Byron and Braidwood operating licenses:

"For SRs that are new in Amendment [ ] to Facility Operating License [ ], the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment [ ]. For SRs that existed prior to Amendment [ ], including SRs with modified acceptance criteria and SRs whose intervals of performance are being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment [ ]. For SRs that existed prior to Amendment [ ], whose intervals of performance are being reduced, the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of Amendment [ ]."

The staff has reviewed the proposed schedule regarding SRs and finds it meets the guideline communicated in its November 5, 1998, correspondence and is, thus, acceptable.

In its letter of November 19, 1998, in response to the staff's comment conveyed in its letter of November 5, 1998, the licensee also proposed a license condition that will enforce the relocation of requirements from the CTS to licensee-controlled documents. The relocations are provided in Table LA, Details Relocated from CTS, and Table R, Relocated CTS. The license condition states that the relocations would be completed during the implementation of the ITS and within 180 days of the issuance of this amendment. This schedule is reasonable in consideration of the large volume of site-specific work necessary to complete implementation of the amendments. Therefore, the staff finds that the proposed schedule for implementation of the ITS for Byron and Braidwood and the completion of the relocation of CTS requirements is acceptable.

In its letter of November 19, 1998, the licensee proposed deleting the additional license condition contained in Appendix C, Additional Conditions, of the Byron and Braidwood licenses. The additional condition, an SR for verifying that the ECCS crossover piping is full of water, was added in Byron/Braidwood Amendment 100/91, dated January 30, 1998. CTS section 4.5.2 is prescriptive about the testing requirements for verifying the ECCS piping is full of water. The license condition states that, if CTS surveillance 4.5.2.b identifies gas present at valve SI058A or SI058B, the licensee shall ultrasonically test the three gas traps associated with the ECCS crossover piping. For the ITS, the procedural details of verifying the ECCS piping is full of water have been relocated to a licensee-controlled document (see DOC 3.5-LA.7). Consistent with this, the licensee has incorporated the details of the additional license condition into the ITS bases. Changes to these requirements require an evaluation in accordance with 10 CFR 50.59 or ITS 5.5.14, Bases Control Program. The staff, therefore, finds deletion of the additional license condition to be acceptable.

VI. STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State officials were notified of the proposed issuance of the ITS conversion amendments for Byron and Braidwood. The State officials had no comments.

VII. ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact was published in the Federal Register on December 21, 1998 (63 FR 70440) for the proposed conversion from the CTS to the ITS within the scope of NUREG-1431. Accordingly, based upon the environmental assessment, the Commission has determined that the portions of these amendments covering issues within the scope of NUREG-1431 will not have a significant effect on the quality of the human environment.

Included in these amendments are also changes that are beyond the scope of NUREG-1431. These changes are discussed in Section III.G of this SE. These beyond-scope items change requirements with respect to installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and change SRs. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued proposed findings that the beyond-scope amendments involve no significant hazards consideration (see 63 FR 57710 and 63 FR 58794), and there has been no public comment on such findings. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the beyond-scope changes included in the Byron and Braidwood amendments.

VIII. CONCLUSION

The Byron and Braidwood ITS provide clearer, more readily understandable requirements to ensure safer operation of the stations. The NRC staff concludes that the ITS satisfy the guidance in the Commission's Final Policy Statement with regard to the content of TS, and conform to the STS provided in NUREG-1431 with appropriate modifications for plant-specific considerations. The NRC staff further concludes that the ITS satisfy Section 182a of the Act, 10 CFR 50.36, and other applicable standards. On this basis, the NRC staff concludes that the proposed ITS for Byron and Braidwood are acceptable.

The staff has also reviewed the plant-specific changes to the CTS as described in this SE. On the basis of the evaluations described herein for each of the changes, the NRC staff concludes that these changes are acceptable.

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) such activities will be conducted in compliance with the Commission's regulations; and (3) the issuance of the amendments will not be inimical to the common defense and security, or to the health and safety of the public.

Attachments:

1. Table A - Administrative Changes to CTS
2. Table M - More Restrictive Changes to CTS

3. Table L - Less Restrictive Changes to CTS
4. Table LA - Details Relocated from CTS
5. Table R - Relocated CTS

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UNITED STATES NUCLEAR REGULATORY COMMISSION

COMMONWEALTH EDISON COMPANY

DOCKET NOS. STN 50-454, STN 50-455, STN 50-456, STN 50-457

NOTICE OF ISSUANCE OF AMENDMENTS TO

FACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 106 to Facility Operating License No. NPF-37, Amendment No. 106 to Facility Operating License No. NPF-66, Amendment No. 98 to Facility Operating License No. NPF-72, and Amendment No. 98 to Facility Operating License No. NPF-77, issued to Commonwealth Edison Company (the licensee), which revised the operating licenses and the Technical Specifications for operation of Byron Station, Units 1 and 2, located in Ogle County, Illinois and Braidwood Station, Units 1 and 2, located in Will County, Illinois. The amendments are effective as of the date of issuance.

The amendments revise the Byron and Braidwood Technical Specifications (Appendix A of the operating licensees) in their entirety to be consistent with the Improved Standard Technical Specifications conveyed by NUREG-1431 (April 1995.) In addition, the amendments add two new license conditions to Appendix C of the Byron and Braidwood operating licenses regarding surveillance requirements and delete one existing license condition.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments.

Notice of Consideration of Issuance of Amendments to Facility Operating Licenses and Opportunity for a Hearing in connection with this action was published in the FEDERAL REGISTER on October 28, 1998 (63 FR 57710), October 29, 1998 (63 FR 58072), and November 2, 1998 (63 FR 58794). No request for a hearing or petition for leave to intervene was filed following these notices.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of the amendment will not have a significant effect on the quality of the human environment (63 FR 70440).

For further details with respect to the action see (1) the application for amendment dated December 13, 1996, as supplemented by letters dated February 24, September 2, October 10, October 28 and December 8, 1997, and January 27, January 29, February 6, February 13, February 24, February 26, April 13, April 16, June 1, June 2, July 2, July 8, July 30, July 31, August 11, August 12, September 21, September 25, October 1, October 2, October 5, October 15, October 23, November 6, November 19, November 23, November 30 and December 14, 1998, (2) Amendment No. 106 to Facility Operating License No. NPF-37, Amendment No. 106 to Facility Operating License No. NPF-66, Amendment No. 98 to Facility Operating License No. NPF-72, and Amendment No. 98 to Facility Operating License No. NPF-77, (3) the Commission's related Safety Evaluation, and (4) the Commission's related Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street NW., Washington, DC, and at the local public document room located at: for Byron, the Byron Public Library

District, 109 N. Franklin, P.O. Box 434, Byron, Illinois 61010; for Braidwood, the Wilmington Public Library, 201 S. Kankakee Street, Wilmington, Illinois 60481.

Dated at Rockville, Maryland, this 22nd day of December 1998.

FOR THE NUCLEAR REGULATORY COMMISSION

Ramin R. Assa, Project Manager
Project Directorate III-2
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation