RS-12-048 10 CFR 50.90

June 6, 2012

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

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

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: License Amendment Request to Revise Technical Specifications (TS) 3.3.1, "Reactor Trip System (RTS) Instrumentation," and TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," To Exclude Solid State Protection System (SSPS) Input Relays from Channel Operational Test Surveillance For Functions With Installed Bypass Test Capability

References:

1) Letter from B. L. Mozafari (U. S. Nuclear Regulatory Commission) to M. J. Pacilio (Exelon Generation Company, LLC), "Braidwood Station, Units 1 and 2 and Byron Station, Unit Nos. 1 and 2 – Issuance of Amendments Re: Revision of Technical Specifications (TS) 3.3.1, 'Reactor Trip System Instrumentation,' and TS 3.3.2, 'Engineered Safety Feature Actuation System Instrumentation,' (TAC Nos. ME5836, ME5837, ME5838, and ME5839)," dated March 30, 2012

2) Letter from M. Mahoney (U. S. Nuclear Regulatory Commission) to M. J. Pacilio (Exelon Generation Company, LLC), "Braidwood Station, Units 1 and 2 and Byron Station, Unit Nos. 1 and 2 – Correction of Typographical Error Re: Amendments Related to the Revision of Technical Specifications (TS) 3.3.1, 'Reactor Trip System Instrumentation,' and TS 3.3.2, 'Engineered Safety Feature Actuation System Instrumentation,' (TAC Nos. ME5836, ME5837, ME5838, and ME5839)," dated April 9, 2012

In Reference 1, the NRC approved amendments for Exelon Generation Company, LLC, (EGC) to revise Required Action Notes in the Braidwood and Byron Technical Specifications (TS) 3.3.1, "Reactor Trip System (RTS) Instrumentation," and TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," to allow certain Functions in the RTS and ESFAS instrumentation to be tested in bypass following installation of the bypass test instrumentation modification. The amendments were supported by Westinghouse Electric Company LLC (Westinghouse) report WCAP-17349-P, Revision 1, "Bypass Test Instrumentation for Byron and

Braidwood, Units 1 and 2," dated February 2011 (Proprietary). The NRC supplemented Reference 1 with a letter dated April 9, 2012 (Reference 2).

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit or early site permit," EGC requests amendments to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. This amendment request proposes to add a Note to specific Surveillance Requirements in the Braidwood and Byron TS 3.3.1 and TS 3.3.2. The proposed change will exclude the solid state protection system (SSPS) input relays from the Channel Operational Test Surveillance for those RTS and ESFAS Functions that have installed bypass test capability.

The proposed change is needed to support utilization of bypass test capability that is being installed to reduce the potential for unnecessary reactor trips or engineered safeguards actuation due to a failure or transient in a redundant channel.

Installation of the bypass test instrumentation modification was completed during the Braidwood Unit 1 spring 2012 refueling outage (A1R16) and is scheduled to be installed during Braidwood Unit 2 fall 2012 refueling outage (A2R16), Byron Unit 1 fall 2012 refueling outage (B1R18), and Byron Unit 2 spring 2013 refueling outage (B2R17).

The attached request is subdivided as follows:

- Attachment 1 provides an evaluation of the proposed change.
- Attachments 2 and 3 include the marked-up TS pages with the proposed change indicated for the Braidwood Station and the Byron Station, respectively.
- Attachments 4 and 5 include the marked-up TS Bases pages with the proposed change indicated for the Braidwood Station and the Byron Station, respectively. The TS Bases pages are provided for information only and do not require NRC approval.

The proposed amendment has been reviewed by the Braidwood Station and Byron Station Plant Operations Review Committees and approved by their respective Nuclear Safety Review Boards in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests approval of the proposed license amendment by June 6, 2013. Once approved, the amendments will be implemented within 90 days.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is notifying the State of Illinois of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State of Illinois official.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Ms. Lisa A. Simpson at (630) 657-2815.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 6th day of June 2012.

Respectfully,

Patrick R. Simpson
Manager – Licensing
Exelon Generation Company, LLC

Attachments:
1. Evaluation of Proposed Change
2. Markup of Technical Specifications Pages for Braidwood Station, Units 1 and 2
3. Markup of Technical Specifications Pages for Byron Station, Units 1 and 2
4. Markup of Technical Specifications Bases Pages for Braidwood Station, Units 1 and 2
5. Markup of Technical Specifications Bases Pages for Byron Station, Units 1 and 2

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector, Braidwood Station
NRC Senior Resident Inspector, Byron Station
NRC Project Manager, NRR – Braidwood and Byron Stations
Illinois Emergency Management Agency - Division of Nuclear Safety

ATTACHMENT 1
Evaluation of Proposed Change

Subject: License Amendment Request to Revise Technical Specifications to Exclude SSPS Input Relays from Channel Operational Test Surveillance for Functions with Installed Bypass Test Capability

1.0 SUMMARY DESCRIPTION

2.0 DETAILED DESCRIPTION

3.0 TECHNICAL EVALUATION

4.0 REGULATORY EVALUATION

- 4.1 Applicable Regulatory Requirements/Criteria
- 4.2 Precedents
- 4.3 No Significant Hazards Consideration
- 4.4 Conclusion

5.0 ENVIRONMENTAL CONSIDERATION

6.0 REFERENCES

1.0 SUMMARY DESCRIPTION

This evaluation supports a request to amend Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2.

Exelon Generation Company, LLC, (EGC) proposes to add a Note to specific Surveillance Requirements in the Braidwood and Byron Technical Specifications (TS) 3.3.1, "Reactor Trip System (RTS) Instrumentation," and TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation." The proposed change will exclude the solid state protection system (SSPS) input relays from the Channel Operational Test (COT) Surveillance for those RTS and ESFAS Functions that have installed bypass test capabilities.

The proposed change is needed to support utilization of bypass test capability that is being installed to reduce the potential for unnecessary reactor trips or safeguards actuation due to a failure or transient in a redundant channel.

Approval of this amendment application is requested by June 6, 2013. Once approved, the amendments will be implemented within 90 days.

2.0 DETAILED DESCRIPTION

By letter dated March 30, 2012, the NRC approved amendments for EGC to revise certain Required Action Notes in the Braidwood and Byron TS 3.3.1 and TS 3.3.2 to allow certain Functions in the RTS and ESFAS instrumentation to be tested in bypass following installation of the bypass test instrumentation modification (Reference 1). The amendments were supported by Westinghouse Electric Company LLC (Westinghouse) report WCAP-17349-P, Revision 1, "Bypass Test Instrumentation for Byron and Braidwood, Units 1 and 2," dated February 2011 (Proprietary) (Reference 2). The NRC supplemented Reference 1 with a correction letter dated April 9, 2012 (Reference 3).

As documented in NRC letter dated March 30, 2012, the following Functions in the RTS and ESFAS instrumentation are being modified to have installed bypass capability and permit testing in bypass:

<u>TS Section 3.3.1</u>

Function 2	Power Range Neutron Flux
Function 3	Power Range Neutron Flux – High Positive Rate
Function 6	Overtemperature ΔT
Function 7	Overpower ΔT
Function 8	Pressurizer Pressure
Function 9	Pressurizer Water Level – High
Function 10	Reactor Coolant Flow – Low
Function 14	Steam Generator Water Level – Low Low

TS Section 3.3.2

Function 1.c	Safety Injection – Containment Pressure – High 1
Function 1.d	Safety Injection – Pressurizer Pressure – Low
Function 1.e	Safety Injection – Steam Line Pressure – Low
Function 4.c	Steam Line Isolation – Containment Pressure – High 2
Function 4.d	Steam Line Isolation – Steam Line Pressure
Function 5.b	Turbine Trip and Feedwater Isolation – Steam Generator Water Level – High High (P-14)
Function 6.b	Auxiliary Feedwater – Steam Generator Water Level – Low Low
Function 7.b	Switch over to Containment Sump – Refueling Water Storage Tank Level – Low Low

The listed RTS and ESFAS instrumentation Functions are identified in Braidwood and Byron Technical Specifications Table 3.3.1-1, "Reactor Trip System Instrumentation," and Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation." Required Actions Notes in TS 3.3.1, Conditions D, E, and K, and in TS 3.3.2, Conditions D and K, have been revised, which allow the surveillance testing (and setpoint adjustment) to be done in bypass with installed bypass capability.

At Braidwood and Byron, the SSPS input relays are currently tested during a COT that is performed in accordance with the Surveillance Frequency Control Program (SFCP) (e.g., on a frequency of 184 days or 6 months). After the bypass test instrumentation modification is installed, it is desired that the SSPS input relays associated with channels that have bypass capability only be tested during a Channel Calibration, which is performed in accordance with the SFCP (i.e., on an 18-month frequency). This Channel Calibration will verify operability of the SSPS input relays and provide assurance that there are no failures that would prevent the actuation of a required reactor trip or engineered safety feature function.

In December 2011, it was discovered that the EGC request dated March 14, 2011 (Reference 4) did not include the change necessary to exclude the SSPS input relays from the COT for those RTS and ESFAS Functions with installed bypass test capability. Cycling of the complete channel with associated SSPS input relays could result in a partial trip. It is preferred not to go to partial trip during surveillance testing during normal plant operation.

The proposed change will exclude the SSPS input relays from the COT Surveillance for the RTS and ESFAS instrumentation that will be tested in bypass following implementation of the bypass test instrumentation modification. The proposed change is needed to support utilization of bypass test capability that is being installed to reduce the potential for unnecessary reactor trips or engineered safeguards actuation due to a failure or transient in a redundant channel.

Surveillance Requirements 3.3.1.7, 3.3.1.8, 3.3.1.12, 3.3.2.2, and 3.3.2.6, currently state, "Perform COT." The proposed change would add a Note to Surveillance Requirements 3.3.1.7, 3.3.1.8, 3.3.1.12, and 3.3.2.6, which states: "The SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability."

Surveillance Requirements 3.3.1.7, 3.3.1.8, and 3.3.2.6 correspond to the above listed RTS and ESFAS instrumentation Functions. For the Functions associated with Surveillance Requirement 3.3.1.12, the Note to exclude the Surveillance for the Functions with installed bypass test capability was added to Surveillance Requirement 3.3.1.12 for completeness.

The Note was not added to Surveillance Requirement 3.3.2.2 as the correlating Function (i.e., Auxiliary Feedwater Pump Suction Transfer on Suction Pressure-Low) was not one of the Functions in the ESFAS instrumentation being modified to have installed bypass capability and permit testing in bypass.

The marked-up TS pages provided in Attachments 2 and 3 indicate the proposed change to the Braidwood Station and Byron Station TS, respectively.

Attachments 4 and 5 contain the proposed mark-ups of the affected TS Bases pages for Braidwood and Byron Station, respectively, for information only. Changes to TS Bases 3.3.1 and 3.3.2 are required regarding the exclusion of the SSPS input relays from Surveillance Requirements 3.3.1.7, 3.3.1.8, 3.3.1.12, and 3.3.2.6 for the Functions with installed bypass test capability. These changes will be made in accordance with the Braidwood and Byron TS Bases Control Program.

3.0 TECHNICAL EVALUATION

The TS Definition for a CHANNEL OPERATIONAL TEST (COT) states:

> A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify the OPERABILITY of required alarm, interlock, display, and trip functions. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints so that the setpoints are within the required range and accuracy.

For RTS and ESFAS Functions without bypass test capability, the COT is performed with the channel in the tripped state, and includes cycling the associated SSPS input relay, which results in a partial trip of the actuation logic (i.e., from a two-out-of-four to a one-out-of-three logic or from a two-out-of-three to a one-out-of-two logic). This satisfies the TS Definition for a COT discussed above.

Following installation of the bypass testing capability modification, the COT will be performed in the bypassed condition. Cycling the SSPS input relay during the test is not desired since it would create a partial trip of the actuation logic.

Therefore, Notes are added to Surveillance Requirements 3.3.1.7, 3.3.1.8, 3.3.1.12, and 3.3.2.6 to exclude the SSPS input relays from the COT for those RTS and ESFAS Functions with installed bypass test capability. All other aspects of the COT will continue to be performed consistent with the TS Definition above.

The TS Definition for a CHANNEL CALIBRATION states:

> A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel so that it responds within the required range and accuracy to known inputs. The CHANNEL CALIBRATION shall encompass the entire channel, including the required sensor, alarm, interlock, display, and trip functions. Calibration of instrument channels with Resistance Temperature Detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping calibrations or total channel steps so that the entire channel is calibrated.

Surveillance Requirements 3.3.1.10, 3.3.1.11, and 3.3.2.10 require the performance of a Channel Calibration, which also requires cycling the SSPS input relay. The SSPS input relay will continue to be cycled during the performance of these Surveillances. These Surveillances will verify operability of the SSPS input relays and provide assurance that there are no failures that would prevent the actuation of a required RTS or ESFAS Function.

The NRC has previously approved the change to not require cycling the SSPS input relay during a COT for South Texas, Units 1 and 2 (Reference 5), and Vogtle, Units 1 and 2 (Reference 6). It should be noted that no changes to the Vogtle TS were proposed regarding not testing the SSPS input relays during a COT. South Texas added a note to the associated RTS and ESFAS Surveillance Requirements Tables, which stated that the SSPS input relays will be tested on a refueling (18-month) periodicity.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

By letter dated March 30, 2012, the NRC approved amendments for EGC to revise certain Required Action Notes in the Braidwood and Byron TS 3.3.1 and TS 3.3.2 to allow certain Functions in the RTS and ESFAS instrumentation to be tested in bypass following implementation of the bypass test instrumentation modification. On April 9, 2012, the NRC issued a correction letter to the March 2012 letter. The amendments were supported by Westinghouse Electric Company LLC (Westinghouse) plant specific report WCAP-17349-P, Revision 1, "Bypass Test Instrumentation for Byron and Braidwood, Units 1 and 2," dated February 2011 (Proprietary).

Section 4.0 of WCAP-17349 provides the regulatory requirements and criteria for bypass test instrumentation, including the General Design Criteria, Regulatory Guides, and Institute of Electrical and Electronics Engineers Standards.

4.2 Precedents

The NRC has approved similar submittals as indicated below:

1) Letter from M. C. Thadani (U. S. NRC) to W. T. Cottle (South Texas Project Electric Generating Station), "South Texas Project, Units 1 and 2 – Issuance of Amendments Revising Allowable Outage Times and Bypass Test Times for Instrumentation (TAC Nos. MB2138 and MB2139)," dated March 19, 2002

2) Letter from D. S. Hood (U. S. NRC) to C. K. McCoy (Vogtle), "Issuance of Amendments – Vogtle Nuclear Generating Plant, Units 1 and 2 (TAC Nos. M85932 and M85933)," dated September 30, 1993

4.3 No Significant Hazards Consideration

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit or early site permit," Exelon Generation Company, LLC, (EGC) requests amendments to Facility Operating License Nos. NPF-72 and NPF-77 for Braidwood Station, Units 1 and 2, and Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. This amendment request proposes to add a Note to specific Surveillance Requirements in the Braidwood and Byron TS 3.3.1, "Reactor Trip System (RTS) Instrumentation," and TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation." The proposed change will exclude the solid state protection system (SSPS) input relays from the Channel Operational Test (COT) Surveillance for those RTS and ESFAS Functions that have installed bypass test capabilities.

The proposed change is needed to support utilization of bypass test capability that is being installed to reduce the potential for unnecessary reactor trips or safeguards actuation due to a failure or transient in a redundant channel.

According to 10 CFR 50.92, "Issuance of amendment," paragraph (c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) Involve a significant reduction in a margin of safety.

EGC has evaluated the proposed change for Braidwood Station and Byron Station, using the criteria in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The following information is provided to support a finding of no significant hazards consideration.

Criteria

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The Reactor Protection System (RPS) and ESFAS provide plant protection and are part of the accident mitigation response. The RTS and ESFAS Functions do not themselves act as a precursor or an initiator for any transient or design basis accident. Therefore, the proposed change does not significantly increase the probability of any accident previously evaluated.

   The proposed change does not alter the design assumptions, conditions, or configuration of the facility. The structural and functional integrity of the RTS and ESFAS, and any other plant system, is unaffected. The proposed change does not alter or prevent the ability of any structures, systems, and components from performing their intended function to mitigate the consequences of an initiating event within the applicable acceptance criteria. Surveillance testing in the bypass condition will not cause any design or analysis acceptance criteria to be exceeded.

   The impact of using bypass testing capability upon nuclear safety has been previously evaluated by the NRC and determined to be acceptable in WCAP 10271-P-A, Revision 1, WCAP 14333-P-A, Revision 1, and WCAP 15376-P-A, Revision 1. Thus, testing in bypass does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   Implementation of the bypass testing capability does not affect the integrity of the fission product barriers utilized for the mitigation of radiological dose consequences as a result of an accident. The plant response as modeled in the safety analyses is unaffected by this change. Hence, the releases used as input to the dose calculations are unchanged from those previously assumed.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change does not result in a change in the manner in which the RTS and ESFAS provide plant protection. The RTS and ESFAS will continue to have the same setpoints after the proposed change is implemented. In addition, no new failure modes are being created for any plant equipment. The change does not result in the creation of any changes to the existing accident scenarios nor do they create any new or different accident scenarios. The types of accidents defined in the UFSAR continue to represent the credible spectrum of events to be analyzed which determine safe plant operation.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

No safety analyses are changed or modified as a result of the proposed TS change to reflect installed bypass test capability. The proposed change does not alter the manner in which the safety limits, limiting safety system setpoints, or limiting conditions for operation are determined. Margins associated with the current applicable safety analyses acceptance criteria are unaffected. The current safety analyses remain bounding since their conclusions are not affected by performing surveillance testing in bypass. The safety systems credited in the safety analyses will continue to be available to perform their mitigation functions.

Redundant RTS and ESFAS trains are maintained, and diversity with regard of the signals that provide reactor trip and engineered safety features actuation is also maintained. All signals credited as primary or secondary, and all operator actions credited in the accident analyses will remain the same. The proposed change will not result in plant operation in a configuration outside the design basis. Although there was no attempt to quantify any positive human factors benefit due to excluding the input relays from the COT Surveillance for those RTS and ESFAS Functions that have installed bypass test capability, it is expected that there would be a net benefit due to a reduced potential for spurious reactor trips and actuations associated with testing.

Implementation of the proposed change is expected to result in an overall improvement in safety, as reduced testing will result in fewer inadvertent reactor trips, less frequent actuation of ESFAS components, less frequent distraction of operations personnel with signification affecting RTS and ESFAS reliability.

Therefore, the proposed change does not result in a significant reduction in the margin of safety.

Based on the above evaluation, EGC concludes that the proposed amendments do not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92, paragraph (c), and, accordingly, a finding of no significant hazards consideration is justified.

4.4 Conclusion

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

5.0 ENVIRONMENTAL CONSIDERATION

EGC has evaluated the proposed amendment for environmental considerations. The review has resulted in the determination that the proposed amendment would change requirements with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or Surveillance Requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22, paragraph (b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6.0 REFERENCES

1) Letter from B. L. Mozafari (U. S. Nuclear Regulatory Commission) to M. J. Pacilio (Exelon Generation Company, LLC), "Braidwood Station, Units 1 and 2 and Byron Station, Unit Nos. 1 and 2 – Issuance of Amendments Re: Revision of Technical Specifications (TS) 3.3.1, 'Reactor Trip System Instrumentation,' and TS 3.3.2, 'Engineered Safety Feature Actuation System Instrumentation," (TAC Nos. ME5836, ME5837, ME5838, and ME3839)," dated March 30, 2012

2) Westinghouse Electric Company LLC, WCAP-17349-P, Revision 1, "Bypass Test Instrumentation for Byron and Braidwood Units 1 and 2," February 2011 (Proprietary)

3) Letter from M. Mahoney (U. S. Nuclear Regulatory Commission) to M. J. Pacilio (Exelon Generation Company, LLC), "Braidwood Station, Units 1 and 2 and Byron Station, Unit Nos. 1 and 2 – Correction of Typographical Error Re: Amendments Related to the Revision of Technical Specifications (TS) 3.3.1, 'Reactor Trip System Instrumentation,' and TS 3.3.2, 'Engineered Safety Feature Actuation System Instrumentation," (TAC Nos. ME5836, ME5837, ME5838, and ME5839)," dated April 9, 2012

4) Letter from J. L. Hansen (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "License Amendment Request to Revise Technical Specifications (TS) 3.3.1, 'Reactor Trip System (RTS) Instrumentation,' and TS 3.3.2, 'Engineered Safety Feature Actuation System (ESFAS) Instrumentation,' to Reflect Installation of Bypass Test Capability," dated March 14, 2011 (Proprietary)

5) Letter from M. C. Thadani (U. S. NRC) to W. T. Cottle (South Texas Project Electric Generating Station), "South Texas Project, Units 1 and 2 – Issuance of Amendments Revising Allowable Outage Times and Bypass Test Times for Instrumentation (TAC Nos. MB2138 and MB2139)," dated March 19, 2002

6) Letter from D. S. Hood (U. S. NRC) to C. K. McCoy (Vogtle), "Issuance of Amendments – Vogtle Nuclear Generating Plant, Units 1 and 2 (TAC Nos. M85932 and M85933)," dated September 30, 1993

7) Westinghouse Electric Company LLC, WCAP-10271-P-A, Revision 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," June 1990 (Proprietary)

8) Westinghouse Electric Company LLC, WCAP-14333-P-A, Revision 1, "Probabilistic Risk Analysis of the RPS and ESFAS Test Times and Completion Times," October 1998 (Proprietary)

9) Westinghouse Electric Company LLC, WCAP-15376-P-A, Revision 1, "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times," March 2003 (Proprietary)

ATTACHMENT 2
Markup of Technical Specifications Pages for Braidwood Station, Units 1 and 2

Braidwood Station, Units 1 and 2

Facility Operating License Nos. NPF-72 and NPF-77

AFFECTED TECHNICAL SPECIFICATIONS PAGES

3.3.1-11
3.3.1-12
3.3.1-13
3.3.2-9
INSERTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.6	----------NOTE---------- Not required to be performed until 24 hours after THERMAL POWER is ≥ 75% RTP. ---------- Calibrate excore channels to agree with incore measurements.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.7	S ----------NOTE---------- Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3. ---------- Perform COT.	In accordance with the Surveillance Frequency Control Program

Replace with INSERT A

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.8	----------NOTE---------- This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ---------- Perform COT.	-----NOTE---- Only required when not performed within the Frequency specified in the Surveillance Frequency Control Program ---------- Prior to reactor startup AND Four hours after reducing power below P-10 for power and intermediate instrumentation AND Four hours after reducing power below P-6 for source range instrumentation AND In accordance with the Surveillance Frequency Control Program

Replace with INSERT B

S

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.9	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.10	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.11	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION. INSERT C	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.12	Perform COT.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.3	----------NOTE---------- Verification of relay setpoints not required. ---------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.4	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.5	Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.6	INSERT C Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.7	----------NOTE---------- Verification of relay setpoints not required. ---------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program

(continued)

INSERT A

1. Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3.

2. The SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability.

INSERT B

1. This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions.

2. The SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability.

INSERT C

----------NOTE----------
The SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability.

ATTACHMENT 3
Markup of Technical Specifications Pages for Byron Station, Units 1 and 2

Byron Station, Units 1 and 2

Facility Operating License Nos. NPF-37 and NPF-66

AFFECTED TECHNICAL SPECIFICATIONS PAGES

3.3.1-11
3.3.1-12
3.3.1-14
3.3.2-9
INSERTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.4	----------NOTE---------- This Surveillance must be performed on the RTBB prior to placing the bypass breaker in service. ---------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.5	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.6	----------NOTE---------- Not required to be performed until 24 hours after THERMAL POWER is ≥ 75% RTP. ---------- Calibrate excore channels to agree with incore measurements.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.7	S ----------NOTE---------- Not required to be performed until for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3 ---------- Perform COT.	In accordance with the Surveillance Frequency Control Program

Replace with INSERT A

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.8	----------NOTE---------- This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ---------- Perform COT.	-----NOTE---- Only required when not performed within the Frequency specified in the Surveillance Frequency Control Program ---------- Prior to reactor startup AND Four hours after reducing power below P-10 for power and intermediate instrumentation AND Four hours after reducing power below P-6 for source range instrumentation AND In accordance with the Surveillance Frequency Control Program

S

Replace with INSERT B

(continued)

SURVEILLANCE REQUIREMENTS (continued)

INSERT C	SURVEILLANCE	FREQUENCY
SR 3.3.1.12	Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.13	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.14	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	-----NOTE------ Only required when not performed within previous 31 days ---------- Prior to reactor startup
SR 3.3.1.15	----------NOTE---------- Neutron detectors are excluded from response time testing. ---------- Verify RTS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.3	----------NOTE---------- Verification of relay setpoints not required. ---------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.4	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.5	Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program
INSERT C SR 3.3.2.6	Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.7	----------NOTE---------- Verification of relay setpoints not required. ---------- Perform TADOT.	In accordance with the Surveillance Frequency Control Program

(continued)

INSERT A

1. Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3.

2. The SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability.

INSERT B

1. This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions.

2. The SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability.

INSERT C

----------NOTE----------
The SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability.

ATTACHMENT 4
Markup of Technical Specifications Bases Pages for Braidwood Station, Units 1 and 2

Braidwood Station, Units 1 and 2

Facility Operating License Nos. NPF-72 and NPF-77

AFFECTED TECHNICAL SPECIFICATIONS BASES PAGES
(NOTE: TS Bases pages are provided for information only.)

B 3.3.1-55
B 3.3.1-56
B 3.3.1-58
B 3.3.2-53
INSERTS

BASES

SURVEILLANCE REQUIREMENTS (continued)

A Note modifies SR 3.3.1.6. The Note states that this Surveillance is required only if reactor power is ≥ 75% RTP and that 24 hours is allowed for performing the first surveillance after reaching 75% RTP.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.7

SR 3.3.1.7 is the performance of a COT. A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be within the Allowable Values specified in Table 3.3.1-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the calculated normal uncertainties consistent with the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current plant specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis (Ref. 7) when applicable.

two Notes. Note 1

SR 3.3.1.7 is modified by ~~a Note that~~ provides a 4 hour delay in the requirement to perform this Surveillance for source range instrumentation when entering MODE 3 from MODE 2. This Note allows a normal shutdown to proceed without a delay for testing in MODE 2 and for a short time in MODE 3 until the RTBs are open and SR 3.3.1.7 is no longer required to be performed. If the unit is to be in MODE 3 with the RTBs closed for > 4 hours, this Surveillance must be performed prior to 4 hours after entry into MODE 3.

INSERT D

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.8

two Notes. Note 1 states that

SR 3.3.1.8 is the performance of a COT as described in SR 3.3.1.7, except it is modified by ~~a Note that~~ this test shall include verification that the P-6 and P-10 interlocks are in their required state for the existing unit condition. The Frequency is modified by a Note that allows this surveillance to be satisfied if it has been performed within the Frequency specified in the Surveillance Frequency Control Program prior to reactor startup and four hours after reducing power below P-10 and P-6. The Frequency of "prior to startup" ensures this surveillance is performed prior to critical operations and applies to the source, intermediate and power range low instrument channels. The Frequency of "4 hours after reducing power below P-10" (applicable to intermediate and power range low channels) and "4 hours after reducing power below P-6" (applicable to source range channels) allows a normal shutdown to be completed and the unit removed from the MODE of Applicability for this surveillance without a delay to perform the testing required by this surveillance. The Frequency specified in the Surveillance Frequency Control Program thereafter applies if the unit remains in the MODE of Applicability after the initial performances of prior to reactor startup and four hours after reducing power below P-10 or P-6. The MODE of Applicability for this surveillance is < P-10 for the power range low and intermediate range channels and < P-6 for the source range channels. Once the unit is in MODE 3, this surveillance is no longer required. If power is to be maintained < P-10 or < P-6 for more than 4 hours, then the testing required by this surveillance must be performed prior to the expiration of the 4 hour limit. Four hours is a reasonable time to complete the required testing or place the unit in a MODE where this surveillance is no longer required. This test ensures that the NIS source, intermediate, and power range low channels are OPERABLE prior to taking the reactor critical and after reducing power into the applicable MODE (< P-10 or < P-6) for periods > 4 hours.

INSERT D

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.11

SR 3.3.1.11 is the performance of a CHANNEL CALIBRATION as described in SR 3.3.1.10. This SR is modified by a Note stating that neutron detectors are excluded from the CHANNEL CALIBRATION. The CHANNEL CALIBRATION for the power range neutron detectors consists of a normalization of the detectors based on a power calorimetric and flux map performed above 15% RTP, and obtaining detector plateau curves, evaluating those curves, and comparing the curves to the manufacturer's data. The CHANNEL CALIBRATION for the source range, intermediate range, and power range neutron detectors consists of obtaining the detector plateau or preamp discriminator curves, evaluating those curves, and comparing the curves to the manufacturer's data. This Surveillance is not required for the NIS power range detectors for entry into MODE 2 or 1, and is not required for the NIS intermediate range detectors for entry into MODE 2, because the unit must be in at least MODE 2 to perform the test for the intermediate range detectors and MODE 1 for the power range detectors. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.12

INSERT E

SR 3.3.1.12 is the performance of a COT of RTS interlocks.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.5

SR 3.3.2.5 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. The time allowed for the testing (4 hours) is justified in Reference 7.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.6

INSERT F

SR 3.3.2.6 is the performance of a COT.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be found within the Allowable Values specified in Table 3.3.2-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the calculated normal uncertainty consistent with the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current plant specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of Reference 16.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

INSERT D

Note 2 states that the SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability. For the Functions with installed bypass test capability, the channel is tested in a bypassed versus a tripped condition. To preclude placing the channel in a tripped condition, the input relays are excluded from this Surveillance.

INSERT E

SR 3.3.1.12 is modified by a Note. The Note states that the SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability. For the Functions with installed bypass test capability, the channel is tested in a bypassed versus a tripped condition. To preclude placing the channel in a tripped condition, the input relays are excluded from this Surveillance.

INSERT F

SR 3.3.2.6 is modified by a Note. The Note states that the SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability. For the Functions with installed bypass test capability, the channel is tested in a bypassed versus a tripped condition. To preclude placing the channel in a tripped condition, the input relays are excluded from this Surveillance.

ATTACHMENT 5
Markup of Technical Specifications Bases Pages for Byron Station, Units 1 and 2

Byron Station, Units 1 and 2

Facility Operating License Nos. NPF-37 and NPF-66

AFFECTED TECHNICAL SPECIFICATIONS BASES PAGES
(NOTE: TS Bases pages are provided for information only.)

B 3.3.1-53
B 3.3.1-54
B 3.3.1-56
B 3.3.2-53
INSERTS

BASES

SURVEILLANCE REQUIREMENTS (continued)

A Note modifies SR 3.3.1.6. The Note states that this Surveillance is required only if reactor power is ≥ 75% RTP and that 24 hours is allowed for performing the first surveillance after reaching 75% RTP.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.7

SR 3.3.1.7 is the performance of a COT. A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be within the Allowable Values specified in Table 3.3.1-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the calculated normal uncertainties consistent with the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current plant specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis (Ref. 7) when applicable.

two Notes. Note 1

SR 3.3.1.7 is modified by ~~a Note that~~ provides a 4 hour delay in the requirement to perform this Surveillance for source range instrumentation when entering MODE 3 from MODE 2. This Note allows a normal shutdown to proceed without a delay for testing in MODE 2 and for a short time in MODE 3 until the RTBs are open and SR 3.3.1.7 is no longer required to be performed. If the unit is to be in MODE 3 with the RTBs closed for > 4 hours, this Surveillance must be performed prior to 4 hours after entry into MODE 3.

INSERT D

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.8

two Notes. Note 1 states that

SR 3.3.1.8 is the performance of a COT as described in SR 3.3.1.7, except it is modified by ~~a Note that~~ this test shall include verification that the P-6 and P-10 interlocks are in their required state for the existing unit condition. The Frequency is modified by a Note that allows this surveillance to be satisfied if it has been performed within the Frequency specified in the Surveillance Frequency Control Program prior to reactor startup and four hours after reducing power below P-10 and P-6. The Frequency of "prior to startup" ensures this surveillance is performed prior to critical operations and applies to the source, intermediate and power range low instrument channels. The Frequency of "4 hours after reducing power below P-10" (applicable to intermediate and power range low channels) and "4 hours after reducing power below P-6" (applicable to source range channels) allows a normal shutdown to be completed and the unit removed from the MODE of Applicability for this surveillance without a delay to perform the testing required by this surveillance. The Frequency specified in the Surveillance Frequency Control Program thereafter applies if the unit remains in the MODE of Applicability after the initial performances of prior to reactor startup and four hours after reducing power below P-10 or P-6. The MODE of Applicability for this surveillance is < P-10 for the power range low and intermediate range channels and < P-6 for the source range channels. Once the unit is in MODE 3, this surveillance is no longer required. If power is to be maintained < P-10 or < P-6 for more than 4 hours, then the testing required by this surveillance must be performed prior to the expiration of the 4 hour limit. Four hours is a reasonable time to complete the required testing or place the unit in a MODE where this surveillance is no longer required. This test ensures that the NIS source, intermediate, and power range low channels are OPERABLE prior to taking the reactor critical and after reducing power into the applicable MODE (< P-10 or < P-6) for periods > 4 hours.

INSERT D

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.11

SR 3.3.1.11 is the performance of a CHANNEL CALIBRATION, as described in SR 3.3.1.10. This SR is modified by a Note stating that neutron detectors are excluded from the CHANNEL CALIBRATION. The CHANNEL CALIBRATION for the power range neutron detectors consists of a normalization of the detectors based on a power calorimetric and flux map performed above 15% RTP, and obtaining detector plateau or preamp discriminator curves, evaluating those curves, and comparing the curves to the manufacturer's data. The CHANNEL CALIBRATION for the source range and intermediate range neutron detectors consists of obtaining the detector discriminator curves, evaluating those curves, and comparing the curves to the manufacturer's data. This Surveillance is not required for the NIS power range detectors for entry into MODE 2 or 1, and is not required for the NIS intermediate range detectors for entry into MODE 2, because the unit must be in at least MODE 2 to perform the test for the intermediate range detectors and MODE 1 for the power range detectors. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.12

INSERT E

SR 3.3.1.12 is the performance of a COT of RTS interlocks.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.5

SR 3.3.2.5 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. The time allowed for the testing (4 hours) is justified in Reference 7. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.6

INSERT F

SR 3.3.2.6 is the performance of a COT.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be found within the Allowable Values specified in Table 3.3.2-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the calculated normal uncertainty consistent with the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current plant specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of Reference 16.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

INSERT D

Note 2 states that the SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability. For the Functions with installed bypass test capability, the channel is tested in a bypassed versus a tripped condition. To preclude placing the channel in a tripped condition, the input relays are excluded from this Surveillance.

INSERT E

SR 3.3.1.12 is modified by a Note. The Note states that the SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability. For the Functions with installed bypass test capability, the channel is tested in a bypassed versus a tripped condition. To preclude placing the channel in a tripped condition, the input relays are excluded from this Surveillance.

INSERT F

SR 3.3.2.6 is modified by a Note. The Note states that the SSPS input relays are excluded from this Surveillance for the Functions with installed bypass test capability. For the Functions with installed bypass test capability, the channel is tested in a bypassed versus a tripped condition. To preclude placing the channel in a tripped condition, the input relays are excluded from this Surveillance.