Michael T. Coyle
Vice President

AmerGen

An Exelon/British Energy Company

Clinton Power Station
P.O. Box 678
Clinton, IL 61727
Phone: 217 935-8881 Ext. 3600

U-603437
8E.100a

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Docket No. 50-461

10CFR50.90

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Clinton Power Station Proposed Amendment to Facility Operating License No. NPF-62 Regarding Changes to Technical Specifications for Anticipated Transient Without Scram Recirculation Pump Trip System (LA-00-010)

Dear Madam or Sir:

Pursuant to 10CFR50.90, AmerGen Energy Corporation, LLC (AmerGen), hereby applies for an amendment to Facility Operating License NPF-62 for Clinton Power Station (CPS). Specifically, AmerGen requests changes to the allowed outage times specified for the instrumentation addressed by Technical Specification (TS) 3.3.4.2, "Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation."

The changes to TS 3.3.4.2 are needed to correct or supersede previous changes made to the TS that were based on information which has since been identified to be erroneous. Identification of this error and the immediate actions taken in response to this identified condition were addressed in CPS letter U-603306 dated December 14, 1999, and in an NRC letter dated April 13, 2000, issued in response to the December 14, 1999, CPS letter. Pursuant to those letters AmerGen committed to submit an amendment request pursuant to 10CFR50.90 to revise the TS upon completion of the evaluation for this condition. By letter dated October 30, 2000, AmerGen committed to submitting the proposed TS changes by December 31, 2000.

Details and supporting information are provided in the attachments to this letter. Attachment 1 is an affidavit supporting the facts and statements in this letter and its attachments. Attachment 2 provides mark-ups of the affected TS as well as revised pages from the TS and TS Bases reflecting the incorporated changes. (The TS Bases pages are provided for information only, as changes to the Bases are processed pursuant to TS 5.5.11, "Technical Specifications (TS) Bases Control Program.") Attachment 3 provides the details and justification for the proposed changes, as well as the significant hazards analysis and environmental analysis for the proposed changes.

A001

This application for an amendment of the CPS Operating License was reviewed by the site Facility Review Group and the CPS Nuclear Safety Review Board.

Sincerely yours,

Michael T. Coyle
Vice President

RWC/blf

Attachments

cc: NRC Clinton Licensing Project Manager
NRC Resident Office, V-690
Regional Administrator, Region III
Illinois Department of Nuclear Safety

AFFIRMATION

Michael T. Coyle, being first duly sworn, deposes and says: That he is Vice President for Clinton Power Station; that this application for amendment of Facility Operating License NPF-62 has been prepared under his supervision and direction; that he knows the contents thereof; and that the letter and the statements made and the facts contained therein are true and correct to the best of his knowledge and belief.

Date: This 28th day of December 2000.

Signed: Michael T. Coyle
Michael T. Coyle
Vice President

STATE OF ILLINOIS

} SS.

DEWITT COUNTY

" OFFICIAL SEAL "
Thomas B. Elwood
Notary Public, State of Illinois
My Commission Expires 11/29/2001

Subscribed and sworn to before me this 28th day of December 2000

Thomas B. Elwood
(Notary Public)

Marked-Up Technical Specifications, Revised Technical Specification Pages, And Revised TS Bases For AWTS-RPT System

3.3 INSTRUMENTATION

3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

LCO 3.3.4.2 Two channels per trip system for each ATWS-RPT instrumentation Function listed below shall be OPERABLE:

a. Reactor Vessel Water Level-Low Low, Level 2; and

b. Reactor Steam Dome Pressure-High.

APPLICABILITY: MODE 1.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Restore channel to OPERABLE status.	14 days
	OR	
	A.2 --------NOTE-------- Not applicable if inoperable channel is the result of an inoperable breaker. ---------- Place channel in trip.	14 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Function with ATWS-RPT trip capability not maintained.	B.1 Restore ATWS-RPT trip capability.	72 hours
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 Remove the associated recirculation pump from service. OR D.2 Be in MODE 2.	6 hours 6 hours

SURVEILLANCE REQUIREMENTS

-----NOTE-----
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.1	Perform CHANNEL CHECK.	12 hours

(continued)

3.3 INSTRUMENTATION

3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

LCO 3.3.4.2 Two channels per trip system for each ATWS-RPT instrumentation Function listed below shall be OPERABLE:

a. Reactor Vessel Water Level-Low Low, Level 2; and

b. Reactor Steam Dome Pressure-High.

APPLICABILITY: MODE 1.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function with ATWS-RPT trip capability not maintained.	A.1 Restore ATWS-RPT trip capability.	72 hours
B. Both Functions with ATWS-RPT trip capability not maintained.	B.1 Restore ATWS-RPT trip capability for one Function.	1 hour
C. Required Action and associated Completion Time not met.	C.1 Remove the associated recirculation pump from service. OR C.2 Be in MODE 2.	6 hours 6 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.4.2.3	Calibrate the trip units.	92 days
SR 3.3.4.2.4	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level-Low Low, Level 2: ≥ -50.0 inches; and b. Reactor Steam Dome Pressure-High: ≤ 1150 psig.	18 months
SR 3.3.4.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation.	18 months

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B 3.3 INSTRUMENTATION

B 3.3.4.2 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

BASES

BACKGROUND

The ATWS-RPT System initiates a recirculation pump trip, adding negative reactivity, following events in which a scram does not (but should) occur, to lessen the effects of an ATWS event. Tripping the recirculation pumps adds negative reactivity from the increase in steam voiding in the core area as core flow decreases. When Reactor Vessel Water Level-Low Low, Level 2 or Reactor Steam Dome Pressure-High setpoint is reached, the recirculation pump motor breakers trip.

The ATWS-RPT System (Ref. 1) includes sensors, relays, bypass capability, circuit breakers, and switches that are necessary to cause initiation of a recirculation pump trip. The channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs an ATWS-RPT signal to the trip logic.

The ATWS-RPT consists of two independent trip systems, with two channels of Reactor Steam Dome Pressure-High and two channels of Reactor Vessel Water Level-Low Low, Level 2, in each trip system. Each ATWS-RPT trip system is a two-out-of-two logic for each Function. Thus, either two Reactor Vessel Water Level-Low Low, Level 2 or two Reactor Steam Dome Pressure-High signals are needed to trip a trip system. The outputs of the channels in a trip system are combined in a logic so that each trip system will trip one recirculation pump (by tripping the respective fast speed and low frequency motor generator (LFMG) motor breakers).

There is one fast speed motor breaker and one LFMG breaker provided for each of the two recirculation pumps for a total of four breakers. The output of each trip system is provided to both breakers of the associated recirculation pump.

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BASES (continued)

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The ATWS-RPT meets the requirements of 10CFR50.62(c)(5). The ATWS-RPT initiates an RPT to aid in preserving the integrity of the fuel cladding following events in which scram does not, but should, occur. Based on its contribution to the reduction of overall plant risk, the instrumentation is included as required by the NRC Policy Statement.

The OPERABILITY of the ATWS-RPT is dependent on the OPERABILITY of the individual instrumentation channel Functions. Each Function must have a required number of OPERABLE channels in each trip system, with their setpoints within the specified Allowable Value of SR 3.3.4.2.4. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Channel OPERABILITY also includes the associated recirculation pump drive motor breakers. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

Allowable Values are specified for each ATWS-RPT Function specified in the LCO. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., reactor vessel water level), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The Allowable Values are derived from the analytic limits corrected for calibration, process, and some of the instrument errors. The trip setpoints are then determined accounting for the remaining instrument errors (e.g., drift). The trip setpoints derived in this manner provide adequate protection because instrumentation uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for.

The individual Functions are required to be OPERABLE in MODE 1 to protect against common mode failures of the

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Reactor Protection System by providing a diverse trip to mitigate the consequences of a postulated ATWS event. The Reactor Steam Dome Pressure-High and Reactor Vessel Water Level-Low Low, Level 2 Functions are required to be OPERABLE in MODE 1, since the reactor is producing significant power and the recirculation system could be at high flow. During this MODE, the potential exists for pressure increases or low water level, assuming an ATWS event. In MODE 2, the reactor is at low power and the recirculation system is at low flow; thus, the potential is low for a pressure increase or low water level, assuming an ATWS event. Therefore, the ATWS-RPT is not necessary. In MODES 3 and 4, the reactor is shut down with all control rods inserted; thus, an ATWS event is not significant and the possibility of a significant pressure increase or low water level is negligible. In MODE 5, the one-rod-out interlock ensures the reactor remains subcritical; thus, an ATWS event is not significant. In addition, the reactor pressure vessel (RPV) head is not fully tensioned and no pressure transient threat to the reactor coolant pressure boundary (RCPB) exists.

The specific Applicable Safety Analyses and LCO discussions are listed below on a Function by Function basis.

a. Reactor Vessel Water Level-Low Low, Level 2

Low RPV water level indicates the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, the ATWS-RPT System is initiated at Level 2 to aid in maintaining level above the top of the active fuel. The reduction of core flow reduces the neutron flux and THERMAL POWER and, therefore, the rate of coolant boiloff.

Reactor vessel water level signals are initiated from four level transmitters that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel.

Four channels of Reactor Vessel Level-Low Low, Level 2, with two channels in each trip system, are available and required to be OPERABLE to ensure that an ATWS-RPT can be effected for both reactor recirculation pumps from this

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

a. Reactor Vessel Water Level-Low Low, Level 2 (continued)

Function on a valid signal. The Reactor Vessel Water Level-Low Low, Level 2, Allowable Value is chosen so that the system will not initiate after a Level 3 scram with feedwater still available, and for convenience with the reactor core isolation cooling (RCIC) initiation. The Allowable Value is referenced from an instrument zero of 520.62 inches above RPV zero.

b. Reactor Steam Dome Pressure-High

Excessively high RPV pressure may rupture the RCPB. An increase in the RPV pressure during reactor operation compresses the steam voids and results in a positive reactivity insertion. This increases neutron flux and THERMAL POWER, which could potentially result in fuel failure and RPV overpressurization. The Reactor Steam Dome Pressure-High Function initiates an ATWS-RPT for transients that result in a pressure increase, counteracting the pressure increase by rapidly reducing core power generation. For the overpressurization event, the ATWS-RPT aids in the termination of the ATWS event and, along with the safety/relief valves (S/RVs), limits the peak RPV pressure to less than the ASME Section III Code Service Level C limits (1500 psig).

The Reactor Steam Dome Pressure-High signals are initiated from four pressure transmitters that monitor reactor steam dome pressure. Four channels of Reactor Steam Dome Pressure-High, with two channels in each trip system, are available and required to be OPERABLE to ensure that an ATWS-RPT can be effected for both reactor recirculation pumps from this Function on a valid signal. The Reactor Steam Dome Pressure-High Allowable Value is chosen to provide an adequate margin to the ASME Section III Code Service Level C allowable Reactor Coolant System pressure.

ACTIONS

A Note has been provided to modify the ACTIONS related to ATWS-RPT instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into

(continued)

BASES

ACTIONS (continued)

the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable ATWS-RPT instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable ATWS-RPT instrumentation channel.

A.1

Required Action A.1 is intended to ensure that appropriate actions are taken when a single or multiple, inoperable, untripped channels within the same Function result in the Function not maintaining ATWS-RPT trip capability. A Function is considered to be maintaining ATWS-RPT trip capability when sufficient channels are OPERABLE or in trip such that the ATWS-RPT System will generate a trip signal from the given Function on a valid signal, and both recirculation pumps can be tripped. This requires all four channels of the Function (i.e., both channels in each trip system for the function) to be OPERABLE or in trip, and the four motor breakers (two fast speed and two LFMG) to be OPERABLE or in trip.

The 72 hour Completion Time is sufficient for the operator to take corrective action (e.g., restoration or tripping of channels) and takes into account the likelihood of an event requiring actuation of the ATWS-RPT instrumentation during this period and the fact that one Function is still maintaining ATWS-RPT trip capability.

(continued)

BASES

ACTIONS

B.1

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels within both Functions result in both Functions not maintaining ATWS-RPT trip capability. The description of a Function maintaining ATWS-RPT trip capability is discussed in the Bases for Required Action A.1, above.

The 1 hour Completion Time is sufficient for the operator to take corrective action and takes into account the likelihood of an event requiring actuation of the ATWS-RPT instrumentation during this period.

C.1 and C.2

With any Required Action and associated Completion Time not met, the plant must be brought to a MODE or other specified condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 2 within 6 hours (Required Action C.2). Alternately, the associated recirculation pump may be removed from service since this performs the intended Function of the instrumentation (Required Action C.1). The allowed Completion Time of 6 hours is reasonable, based on operating experience, both to reach MODE 2 from full power conditions and to remove a recirculation pump from service in an orderly manner and without challenging plant systems.

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BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.3.4.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of this LCO.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.4.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL FUNCTIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

SR 3.3.4.2.3

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in SR 3.3.4.2.4. If the trip setting is discovered to be less conservative than the setting accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

SR 3.3.4.2.4

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based upon the assumption of the magnitude of equipment drift in the setpoint analysis.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.4.2.5

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers, included as part of this Surveillance, overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel(s) would be inoperable.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

REFERENCES

1. USAR, Section 7.7.1.25.2

INTRODUCTION

In accordance with 10CFR50.90, AmerGen proposes to amend Clinton Power Station (CPS) Technical Specification (TS) 3.3.4.2, "Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation." TS 3.3.4.2 imposes operability and testing requirements for the ATWS-RPT system which is designed to trip the reactor recirculation pumps in the event of an anticipated transient involving a failure of the reactor protection system to effect a scram in response to the transient. The changes are primarily required to conform the Required Actions of this Technical Specification to the as-built design of the CPS ATWS-RPT system which was not properly considered in previous changes to this Technical Specification. The changes will make the Completion Times for the applicable Required Actions consistent with those specified in the Standard (Improved) Technical Specifications (NUREG 1434) while taking the CPS ATWS-RPT as-built design into account.

Information supporting the proposed TS changes, including a description of the proposed TS changes, a safety assessment (i.e., justification) for the proposed TS changes, an evaluation for No Significant Hazards Consideration, and an evaluation for the environmental impact considerations, is provided as follows.

DESCRIPTION AND JUSTIFICATION FOR THE PROPOSED CHANGES

CPS ATWS-RPT As-built Design

CPS TS 3.3.4.2, "Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation," specifies operability and testing requirements for the instrumentation provided to automatically initiate the ATWS-RPT system. The ATWS-RPT system provides a means of limiting the consequences of an unlikely occurrence of a failure to scram during an anticipated transient. The system is designed to effect a trip of both recirculation pumps from 100 percent power to zero speed and will limit the initial reactor vessel pressure rise or reduce the loss of coolant (due to boiling/steaming) by reducing power during an ATWS. The ATWS-RPT system was installed in order to comply with the requirements in 10 CFR 50.62. This system is independent from and in addition to the safety-related Reactor Protection System (RPS) that is normally credited to effect a scram in response to analyzed events.

The ATWS-RPT instrumentation is non-safety related and consists of four reactor vessel pressure channels and four reactor vessel water level channels arranged in two separate trip systems (such that there are two reactor pressure channels and two reactor water level channels in each trip system). Each trip system trips only its respective recirculation pump in the event of a demand. The trip logic for each trip system requires a trip of both reactor pressure channels or both reactor water level channels to trip the associated reactor recirculation pump. Per TS 3.3.4.2, the reactor vessel water level instrument channels and their associated trip function are associated with Function "a" identified in the Limiting Condition for Operation (LCO) section of this TS, and the reactor vessel pressure instrument channels and their associated trip function are associated with Function "b" (as also identified in this LCO).

Per the CPS design, the ATWS-RPT logic is also provided with a "test" switch at the trip system level to allow bypassing that trip system for maintenance and testing. Placing this switch in the "test" position causes both reactor pressure channels and both water level trip channels in that trip system to become inoperable. Use of the test switch is not required for routine testing of the instrument channels, and as such, it is not usually used for such purposes. However, even without use of the test switch, inoperability of any one or more of the reactor pressure channels or the water level channels reduces the capability of the ATWS-RPT system to mitigate the consequences of an ATWS due to the channel combinational logic for each function. For example, inoperability of a single water level channel causes the affected trip system to be incapable of tripping the associated reactor recirculation pump in the event of a low water level condition during an ATWS event, thus resulting in a loss of function for Function "a" of TS 3.3.4.2.

Notwithstanding the impact of channel inoperability on the ATWS-RPT system due to the system design, on-line testing requirements are imposed on the ATWS-RPT instrumentation by TS 3.3.4.2. These requirements necessitate establishing a reasonable allowed outage time to permit such testing and to effect repairs or readjustments identified or required as a result of such testing.

Bases and Background for Current Technical Specification

As indicated previously and in the cover letter, TS 3.3.4.2 was revised on several previous occasions to incorporate improvements as well as increased allowed outage times for the instrumentation. These changes made CPS TS 3.3.4.2 consistent with other plant Technical Specifications so that when CPS eventually amended its Technical Specifications to convert to the improved Standard Technical Specifications (STS) per NUREG 1434, "Standard Technical Specifications, General Electric Plants, BWR-6 Specifications," the standard for TS 3.3.4.2 was adopted as well. Thus, the current version of CPS TS 3.3.4.2 is based on the STS.

It was more recently identified, however, that some of the previously incorporated changes, particularly the increased allowed outage times, were based on an erroneous interpretation and presentation of the ATWS-RPT design basis in the submittals that led to those changes. Specifically, it was assumed that either of the two trip systems is capable of tripping both reactor recirculation pumps. (Such a design is the most common among BWR plants, where the trip systems are fully redundant with respect to their capability to trip both pumps. In such cases, with one trip system out of service, the other trip system is still capable of effecting a dual-pump trip for either Function, i.e., from either the low reactor water level instrument channels or the high reactor pressure instrument channels.) Under this design assumption, longer allowed outage times were justified on the basis that the capability to trip both pumps could still be maintained with one trip system out of service.

As already described, however, the as-built design of the CPS ATWS-RPT system is such that each trip system is capable of tripping only its associated pump, (i.e., the breaker(s) for the associated pump drive motor). This discrepancy was identified to the NRC by CPS letter U-603306 dated December 14, 1999, wherein CPS noted that it was imposing appropriate administrative controls on the ATWS-RPT instrumentation to ensure that appropriately conservative allowed outage times are enforced when the instruments are removed from service, commensurate with the ATWS-RPT system as-built design. CPS noted that such controls would remain in place until appropriate changes can be made to the Technical Specifications. This condition (and AmerGen's corrective actions) was subsequently acknowledged in a letter from the NRC, dated April 13, 2000. By follow-up letter U-603429 dated October 30, 2000, AmerGen committed to propose appropriate changes by the end of the current year, i.e., by December 31, 2000.

Description of Proposed Changes

Attachment 2 indicates the proposed changes to TS 3.3.4.2, which may be summarized as follows:

- Delete Condition A (and redesignate current Conditions B, C and D as Conditions A, B and C).
- Remove the NOTE specified in the Surveillance Requirements section of TS 3.3.4.2 that allows additional outage time (i.e., a delay time before entering the Required Action) for the performance of required surveillance tests.

Basis/Justification for Proposed Changes

As noted previously, the current version of CPS TS 3.3.4.2 is consistent with the Standard Technical Specifications (STS) (NUREG-1434), notwithstanding the erroneous information on which CPS TS 3.3.4.2 is based. Acknowledgement of the CPS ATWS-RPT as-built design, as well as re-evaluation of CPS TS 3.3.4.2 and its applicability to the CPS design, has now prompted the above-described changes to be proposed. Although some changes are required, much of CPS TS 3.3.4.2 remains unchanged per the proposed changes since most of CPS TS 3.3.4.2 is still applicable and valid for the CPS ATWS-RPT design, as further addressed below.

With regard to the proposed changes, Condition A is being deleted since it has been determined to be inappropriate for the CPS ATWS-RPT design. (Conditions B, C and D, to be re-designated as Conditions A, B and C, continue to be applicable and appropriate for CPS, as further discussed below.) As previously noted for the CPS ATWS-RPT design, removal of a single channel from service for testing results in a loss of function due to the two-out-of-two logic for the associated Function within each trip system. Such a condition corresponds more appropriately to current Condition B rather than current Condition A. Condition A is not only redundant to Condition B, it is an inappropriate Condition for CPS due to the lengthy allowable outage time (AOT) permitted by the Condition. Its associated AOT is based on the premise that, with fully redundant trip systems, inoperability of a single channel does *not* result in a loss of dual-recirculation pump trip capability. Thus, this Condition is only appropriate for ATWS-RPT logic schemes where inoperability of a channel

(or channels) does not result in a loss of trip capability. As such, it is not appropriate for CPS.

While the ATWS-RPT logic schemes that exist at other facilities may permit entry into Condition A with one or more channels inoperable, entry into Condition B is required when the number or combination of inoperable channels results in one Function not having trip capability, and entry into Condition C is required when the number or combination of inoperable channels results in both Functions not having trip capability. These Conditions are applicable when the specified conditions are met irrespective of the channel combinational logic scheme. The channel combinational logic scheme simply dictates what number or combination of channels may be inoperable before entry into these Conditions is required. In the case of the CPS ATWS-RPT design, one channel being inoperable results in entry into Condition B, whereas for other ATWS-RPT designs entry into Condition B may not be required until two or more channels are inoperable. In either case, Condition B is applicable when a loss of one Function occurs, and Condition C is applicable when a loss of both Functions occurs. On this basis, the requirements of these Conditions are just as applicable to the CPS ATWS-RPT design as they are to other ATWS-RPT designs. Thus, despite the proposed elimination of Condition A, the remainder of the STS-based Conditions are (or continue to be) applicable to CPS, including the associated AOTs. As such, with respect to the Conditions and Required Actions of TS 3.3.4.2, the proposed changes support an adoption (or continuation) of the STS ATWS-RPT TS for CPS TS 3.3.4.2, notwithstanding the deletion of Condition A.

With regard to the Note associated with the Surveillance Requirements section of TS 3.3.4.2, the basis for removal of this note is the same as that for eliminating current Condition A. The note is intended to support required surveillance testing when a channel(s) is placed in an inoperable status for such testing. Under such conditions the Note allows a delay time (of up to 6 hours) before entry into the applicable Condition and Required Action is required. The delay is allowed "provided the associated Function maintains ATWS-RPT trip capability." For the CPS as-built ATWS-RPT design, this condition cannot be met even with a single channel removed from service for testing. Thus, the note (as currently worded) is not appropriate for CPS. Further, such a note is not needed since the proposed 72-hour AOT for the Required Actions of Condition B will accommodate required testing. For these reasons the current note will be deleted.

Supporting Risk Assessment

As noted above, the proposed changes to TS 3.3.4.2 will generally make CPS TS 3.3.4.2 consistent with the STS. The AOTs for all of the Required Actions that will remain in place in CPS TS 3.3.4.2 will be consistent with the STS, as the associated Conditions have been determined to be applicable and appropriate for CPS. The AOTs specified by these STS-based Conditions have already been determined to be acceptable based on the establishment and NRC approval of the STS.

Based on the above, an in-depth risk-informed analysis of the proposed AOTs was not deemed to be necessary, as the proposed AOTs do not constitute an extension of NRC-accepted AOTs. Nevertheless, a plant risk evaluation was performed to confirm the acceptability of the 72-hour AOT for proposed Condition A from a risk-based perspective.

Specifically, the core damage probability increase associated with a single 72-hour LCO window was evaluated. Also, the change in average core damage frequency attributable to a 72-hour LCO window occurring once per year was estimated. (Although the plant is not limited to a single entry into Condition A per year, the cumulative unavailability is expected to average less than one full AOT period per year, as further explained below). The results of these evaluations show that the likelihood of a core damage event attributable to a 72-hour allowable out-of-service time is acceptably small.

It should be noted that although the AOT for proposed Condition A would permit the ATWS-RPT system to be inoperable for up to 72 hours for each entry into this Condition, experience shows that the entries which are periodically required for the performance of required testing are short-term and that, typically, the total inoperability time per year is significantly less than 72 hours. Specifically, the CPS experience is that a trip system is rendered inoperable by testing for less than one hour at a time for each channel that is functionally tested. With eight channels required to be tested every 92 days (per Surveillance Requirements 3.3.4.2.2 and 3.3.4.2.3), the ATWS-RPT trip system is rendered inoperable by such required surveillance testing less than 32 hours per year.

Finally, it should be noted that certain aspects of the CPS design reduce the risk associated with ATWS-RPT unavailability time. In particular, CPS utilizes a solid-state reactor protection system design that employs any-two-out-of-four logic and which is automatically and continuously monitored by the CPS Nuclear Systems Protection System (NSPS) Self Test System (STS). This design (which is unique to Clinton) makes the CPS RPS more reliable than other plant designs. (See, for example, General Electric (GE) Topical Reports NEDC-30844A, "BWR Owners' Group response to NRC Generic Letter 83-28, Item 4.5.3," and NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," for evaluations of the BWR Solid State RPS reliability.) The greater reliability of the solid-state RPS serves to reduce the probability of an ATWS at CPS relative to other plants.

INFORMATION SUPPORTING A FINDING OF NO SIGNIFICANT HAZARDS CONSIDERATION

In accordance with 10 CFR 50.92, proposed changes to an operating license involve No Significant Hazards Consideration if operation of the facility in accordance with the proposed changes would not: (1) involve a significant increase in the probability or consequences of any accident previously evaluated, (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. The proposed changes to the CPS operating license have been evaluated against each of these three criteria, and it has been determined that the changes do not involve a Significant Hazards Consideration because:

(1) The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to the Technical Specifications are to the allowed outage time(s) specified for instrumentation associated with the Anticipated Transient Without Scram (ATWS) Reactor Recirculation Pump Trip (RPT) system.

The proposed changes do not involve a change to the plant design or operating modes. The changes apply to the ATWS-RPT system, but they have no impact on the failure modes or initiators that potentially cause an ATWS, and thus have no impact on the frequency of occurrence of an ATWS event.

The proposed changes do not involve a change to the design of the ATWS-RPT system, as the proposed changes primarily only affect the allowed outage time of the system and do not otherwise affect the manner in which the system is tested or operated. Thus, the manner in which the ATWS-RPT system is designed to respond to an ATWS event is not affected, so its mitigation design function is not impacted. Although, by design, on-line testing of the ATWS-RPT requires the system to be rendered unavailable for short periods of time, system unavailability is not significantly impacted by the proposed changes. The proposed changes involve the establishment of a reasonable allowed outage time to support online testing needed to periodically confirm system operability, but which minimizes the overall system average unavailability. All of the proposed allowed outage times are based on the Standard Technical Specifications and as such have been determined to be acceptable for maintaining adequate ATWS-RPT availability and for minimizing plant risk. They thus provide reasonable assurance that the ATWS-RPT system will be available on demand to perform its mitigating function in the event of an accident or transient involving a failure of the primary scram function (i.e., the reactor protection system).

Based on the above, the proposed changes to the TS do not involve a significant increase in the probability or consequences of an accident.

(2) The proposed TS changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes only affect the outage time allowed for the ATWS-RPT instrumentation. They do not involve any changes to the plant design or operation, and thus do not introduce a new failure mode. Therefore, the proposed changes to the TS do not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) The proposed changes do not involve a significant reduction in the margin of safety.

The proposed changes do not involve a change to the plant design or operation including the ATWS-RPT system itself. No change to the setpoints of the ATWS-RPT instrumentation is involved. Since ATWS-RPT availability will be maintained to a sufficiently high degree, and since the ATWS-RPT design (including its associated instrument setpoints) is unaffected, the TS will continue to provide adequate assurance that the ATWS-RPT is capable of performing its intended function.

Based on the above, the proposed changes to the TS do not involve a reduction in the margin of safety.

From the above analysis, it is concluded that the proposed changes will not increase the probability or consequences of any accident previously evaluated, create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a significant reduction in the margin of safety. Therefore, the proposed changes meet the requirements of 10 CFR 50.92(c) and involve no significant hazards consideration.

ENVIRONMENTAL IMPACT CONSIDERATION

The proposed changes to the license (Technical Specification 3.3.4.2) were evaluated against the criteria of 10 CFR 51.22 for environmental considerations. The proposed changes are consistent with the approved design criteria for the facility and ensure that the facility continues to be operated within acceptable operational limits. Therefore, the proposed changes (1) do not increase individual or cumulative occupational radiation exposures, (2) do not change the types or increase the amount of effluents that may be released offsite, and (3) as discussed in this enclosure, do not involve a significant hazards consideration. Based on the foregoing, it has been concluded that the proposed Technical Specification change meet the criteria given in 10 CFR 51.22(c)(9) for categorical exclusion from the requirement for an Environmental Impact Statement.