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SCE&G®
A SCANA COMPANY

June 19, 2001
RC-01-0119

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

Attention: Ms. K. R. Cotton

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
TECHNICAL SPECIFICATION AMENDMENT REQUEST TSP 00-0241
RESPONSE TIME TESTING ELIMINATION GROUP 05 CARDS

Reference: Stephen A. Byrne letter to Document Control Desk, dated April 6, 2000 (RC-00-0216)

South Carolina Electric & Gas Company (SCE&G), acting for itself and as agent for South Carolina Public Service Authority, hereby requests an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS). This request is being submitted pursuant to 10 CFR 50.90.

This proposed change supports the inclusion of the newer versions of the process rack circuit boards into the response time testing elimination population. These versions of the cards were not included in the original Failure Modes and Effect Analysis (FMEA) performed for WCAP-14036-P-A, Revision 1. This is a proprietary document developed by Westinghouse and approved by the NRC in October 1998. This document provides the basis for eliminating the periodic time response testing for specific Process Protection System components.

The purpose for this request is to document the review of two 7300 Process Protection System cards (NLP - Loop Power Supply and Isolator card and NSA - Summing Amplifier card). The intention of this review is to demonstrate that the differences in the cards are insignificant with respect to the conclusions of the FMEA performed for the older version of these cards.

The older versions of these cards were included in the population of circuit cards that do not require periodic response time testing to assure operability. This approval was via Technical Specification Amendment 146 (TAC NO. MA8632) dated August 29, 2000.

A001

SCE&G desires that this amendment request be approved by February 1, 2002, to permit implementation of the change, including training, prior to the commencement of Refueling Outage 13, scheduled to start April 2002.

The TS amendment request is contained in the following attachments:

Attachment I	Explanation of Changes Summary
Attachment II	Safety Evaluation
Attachment III	No Significant Hazards Evaluation
Attachment IV	Commitments to Ensure Equipment Operability

There are no commitments made in this Technical Specification change request.

There are no other TS changes in process that will affect or be affected by this change request.

A copy of this application and associated attachments is being provided to the designated South Carolina State official in accordance with 10 CFR 50.91.

This proposed amendment has been reviewed and approved by the Plant Safety Review Committee and the Nuclear Safety Review Committee.

Should you have questions, please call Mr. Philip A. Rose at (803) 345-4052.

I certify under penalty of perjury that the foregoing is true and correct.

Very truly yours,

Stephen A. Byrne

PAR/SAB/dr
Attachments (4)

c: N. O. Lorick
N. S. Carns
T. G. Eppink (w/o Attachment)
R. J. White
L. A. Reyes
W. R. Higgins
NRC Resident Inspector
P. Ledbetter
K. M. Sutton
T. P. O'Kelly
RTS (TSP 00-0241)
File (813.20)
DMS (RC-01-0119)

STATE OF SOUTH CAROLINA :
: **TO WIT** :
COUNTY OF FAIRFIELD :

I hereby certify that on the 19th day of June 2001, before me, the subscriber, a Notary Public of the State of South Carolina personally appeared Stephen A. Byrne, being duly sworn, and states that he is Senior Vice President, Nuclear Operations of the South Carolina Electric & Gas Company, a corporation of the State of South Carolina, that he provides the foregoing response for the purposes therein set forth, that the statements made are true and correct to the best of his knowledge, information, and belief, and that he was authorized to provide the response on behalf of said Corporation.

WITNESS my Hand and Notarial Seal

Notary Public

My Commission Expires

July 13, 2005
Date

Attachment To License Amendment No. XXX
To Facility Operating License No. NPF-12
Docket No. 50-395

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
B 3/4 3-1a	B 3/4 3-1a
B 3/4 3-1b	B 3/4 3-1b

SCE&G -- EXPLANATION OF CHANGES SUMMARY

Page	Affected Section	Bar #	Description of Change	Reason for Change
B 3/4 3-1a	B 3/4.3.1, B 3/4.3.2	1	Add discussion of 11NLP and 6 NSA Process cards to Bases, due to evaluation performed by Westinghouse for response time test elimination.	Inclusion of these Group 05 cards into the population of cards that no longer require response time testing (Amendment 146).
B 3/4 3-1b B 3/4 3-1c		1	Pagination only	Pagination only

This change request is to provide information that demonstrates the Group 05 cards are essentially the same as the cards evaluated in WCAP-14036-P-A, Revision 1. Once this demonstration is accepted, the Group 05 cards will be included in the population of process cards that no longer require periodic response time testing.

Insert 1

Westinghouse letter CGE-00-018, dated March 28, 2000, provided an evaluation of the Group 05 (11NLP and 6NSA) 7300 process cards. These cards were revised after the submittal of WCAP-14036, Revision 1. This letter concluded that the failure modes and effects analysis (FMEA) performed for the older versions of these cards and documented in WCAP-14036-P-A, Revision 1, is applicable for these Group 05 cards. The bounding time response values determined by test and evaluation and reported in the WCAP are valid for these redesigned cards.

REACTOR TRIP AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION (continued)

will happen, an infrequent excessive drift is expected. Rack or sensor drift, in excess of the allowance that is more than occasional, may be indicative of more serious problems and should warrant further investigation.

The measurement of response time at the specified frequencies provides assurance that the reactor trip and the engineered safety feature actuation associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Response time may be verified by actual response time tests in any series of sequential, overlapping, or total channel measurements, or by the summation of allocated sensor, signal processing, and actuation logic response times with actual response time tests on the remainder of the channel. Allocations for sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise or power interrupt tests), (2) in place, onsite, or offsite (e.g., vendor) test measurements, or (3) utilizing vendor engineering specifications. WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," provides the basis and methodology for using allocated sensor response times in the overall verification of the channel response time for specific sensors identified in the WCAP. Response time verification for other sensor types must be demonstrated by test.

WCAP 14036-P-A, Revision 1, "Elimination of Periodic Response Time Tests," provides the basis and methodology for using allocated signal processing and actuation logic response times in the overall verification of the protection system channel response time. The allocations for sensor, signal conditioning, and actuation logic response times must be verified prior to placing the component into operational service and re-verified following maintenance or modification that may adversely affect response time. In general, electrical repair work does not impact response time provided the parts used for the repair are of the same type and value. Specific components identified in the WCAP may be replaced without verification testing. One example where response time could be affected is replacing the sensing element of a transmitter.

INSERT 1 →

The Engineered Safety Features response times specified in Table 3.3-5 which include sequential operation of the RWST and VCT valves (Notes 2 and 3) are based on values assumed in the non-LOCA safety analyses. These analyses are for injection of borated water from the RWST. Injection of borated water is assumed not to occur until the VCT charging pump suction isolation valves are closed following opening of the RWST charging pumps suction valves. When the sequential operation of the RWST and VCT valves is not included in the response times (Note 1) the values specified are based on the LOCA analyses. The LOCA analyses take credit for injection flow regardless of the source. Verification of the response times specified in Table 3.3-5 will assure that the assumptions used for the LOCA and non-LOCA analyses with respect to the operation of the VCT and RWST valves are valid.

REACTOR TRIP AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION (continued)

The Engineered Safety Features Actuation System senses selected plant parameters and determines whether or not predetermined limits are being exceeded. If they are, the signals are combined into logic matrices sensitive to combinations indicative of various accidents, events, and transients. Once the required logic combination is completed, the system sends actuation signals to those engineered safety features components whose aggregate function best serves the requirements of the condition. As an example, the following actions may be initiated by the Engineered Safety Features Actuation System to mitigate the consequences of a steam line break or loss of coolant accident 1) safety injection pumps start and automatic valves position, 2) reactor trip, 3) feedwater isolation, 4) startup of the emergency diesel generators, 5) containment spray pumps start and automatic valves position, 6) containment isolation, 7) steam line isolation, 8) turbine trip, 9) auxiliary feedwater pumps start and automatic valves position, 10) containment cooling fans start and automatic valves position, 11) essential service water pumps start and automatic valves position, and 12) control room isolation and ventilation systems start.

Several automatic logic functions included in this specification are not necessary for Engineered Safety Feature System actuation but their functional capability at the specified setpoints enhances the overall reliability of the Engineered Safety Features functions. These automatic actuation Systems are purge and exhaust isolation from high containment radioactivity, turbine trip and feedwater isolation from steam generator high-high water level, initiation of emergency feedwater on a trip of the main feedwater pumps, automatic transfer of the suctions of the emergency feedwater pumps to service water on low suction pressure, and automatic opening of the containment recirculation sump suction valves for the RHR and spray pumps on low-low refueling water storage tank level.

The service water response time includes: 1) the start of the service water pumps and, 2) the service water pumps discharge valves (3116A,B,C-SW) stroking to the fully opened position. This condition of the valves assures that flow will become established through the component cooling water heat exchanger, diesel generator coolers, HVAC chiller, and to the suction of the service water booster pumps when these components are placed in-service. Prior to this time, the flow is rapidly approaching required flow and sufficient pressure is developed as valves finish their stroke. Each of the above-listed components will be starting to perform their accident mitigation function, either directly or indirectly depending upon the use of the component, and will be operational within the service water response time of 71.5/81.5 seconds[1/]. Only the service water booster pumps have a direct impact on the accident analysis via the RBCUs' heat removal capability as discussed below.

[1/] Total time is 1.5 second instrument response after setpoint is reached, plus 10 seconds diesel generator start, plus 10 seconds to reach service water pump start and begin 3116-SW opening via Engineered Safety Features Loading Sequencer, plus 60 seconds stroke time for 3116-SW. During this total time, the service water pumps start and the service water pump discharge valve begins to open at 11.5 seconds and the pump discharge valve is fully open at 71.5 seconds without a diesel generator start required and 21.5 seconds and 81.5 seconds including a diesel generator start.

REACTOR TRIP AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION (continued)

The RBCU response time includes: 1) the start of the RBCU fan and the service water booster pumps and, 2) all the service water valves which must be driven to the fully opened or fully closed position. This condition of the valves allows the flow to become fully established through the RBCU. Prior to this time, the flow is rapidly approaching required flow as the valves finish their stroke. Although the RBCU would be removing heat throughout the Engineered Safety Features response time, the accident analysis does not assume heat removal capability from 0 to 71.5 seconds [2/] because the industrial cooling water system is not completely isolated until 71.5 seconds. A linear ramp increase from 95% full heat removal capability to 100% full heat removal capability is assumed by the accident analysis to start at 71.5 seconds and end at 86.5 seconds[3/]. Full heat removal capability is assumed at 86.5 seconds based on the position of the valve 3107-SW.

[2/] Total time is 1.5 second instrument response after setpoint is reached, plus 10 second diesel start plus 60 seconds* for valves to isolate industrial cooling water system.

[3/] Total time is 1.5 second instrument response after setpoint is reached, plus 10 second diesel generator start plus 75 seconds to stroke valves 3107A, B-SW.

* During this time period, the Engineered Safety Features Loading Sequencer starts the RBCU fans at 25 seconds and service water booster pumps at 30 seconds after the valves begin to stroke.

REACTOR TRIP AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION (continued)

will happen, an infrequent excessive drift is expected. Rack or sensor drift, in excess of the allowance that is more than occasional, may be indicative of more serious problems and should warrant further investigation.

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SAFETY EVALUATION FOR REVISING RESPONSE TIME TESTING IN THE VIRGIL C. SUMMER NUCLEAR STATION TECHNICAL SPECIFICATIONS

Description of Amendment Request

The Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS), were revised by Amendment 146 to change the definitions for 1.12 "Engineered Safety Feature (ESF) Response Time" and 1.26 "Reactor Trip System (RTS) Response Time". These changes allow the verification of response time, whereas, the previous definitions implied the response time must be measured. This permits the use of a "bounding value" for the component or instrument loop response time instead of having to perform the measurement of the response time.

Additionally, Surveillance Requirements 4.3.1.2 and 4.3.2.2 were revised to incorporate the philosophy approved in WCAPs 13632-P-A, Revision 2 and 14036-P-A, Revision 1. This change replaced the words "demonstrated" and "tested" with the words "verified" and "verification". Associated Bases changes were made to Section B 3/4.3.1 and B 3/4.3.2.

These changes are applicable for selected components provided both the components and the methodology for verification have previously been reviewed and approved by the NRC.

This amendment request provides for the review of two 7300 Process Protection System cards (NLP and NSA) that were part of the original Failure Modes and Effects Analysis (FMEA) but have been redesigned since the publication of the WCAPs. The intention of this review is to demonstrate that the differences in the cards are insignificant with respect to the FMEA and that these additional circuit cards (Group 05 cards) belong in the population of cards that no longer require periodic response time to be measured.

Background

Instrument response time is, generally, the time span from when a monitored variable exceeds a predetermined setpoint, at the channel sensor, until the actuated device is capable of performing its safety function. Response time testing (RTT) has been an integral part of Technical Specifications (TS) surveillance program to assure the proper functioning of the sensors and instrumentation loops for the ESFAS and the RTS.

The Westinghouse Owners Group performed two analyses to assess the impact of elimination of RTT for instruments and instrument loops. These analyses also discussed alternate test methodologies that would show that the instrumentation was functioning properly. The concept is that a component will not degrade to the point that it will not perform its designed function without being detected by periodic calibration or channel checks. The first of these analyses

was Westinghouse Owners Group licensing Topical Report WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," which was approved by the NRC on September 5, 1995. The second analysis, WCAP-14036-P-A, Revision 1, "Elimination of Periodic Protection Channel Response Time Tests," was approved by the NRC on October 6, 1998. Both of these documents contain proprietary Westinghouse information. The Safety Evaluations approving these documents stipulated certain conditions that a licensee must meet when implementing the guidelines presented in these documents. These conditions will be satisfied upon implementation of this change.

Westinghouse completed an additional evaluation for the Loop Power Supply (NLP) and Summing Amplifier (NSA) cards that have been revised since the WCAP-14036, Revision 1 was submitted. The newer version of these cards is identified as Group 05. These cards were reviewed; the conclusion is that there were only minor changes that had insignificant impact on the response time, and the bounding values approved in the WCAP are still applicable.

Safety Evaluation

- NLP card review

Isolator and Loop Power Supply (NLP) card was upgraded and redesigned to cost-effectively extend the life and enhance the performance of older equipment. By taking advantage of new state-of-the-art components, while maintaining an equivalent signal path circuit, the redesigned NLP achieved the following:

Reduced card power consumption and heat dissipation.
Reduction in the number or card groups.
Enhanced temperature stability and reduced drift.
Improvement in the ease of testing and calibration.
Significantly improved the reliability rating.

Westinghouse Drawing 2837A12, Revision 32, was used for the original FMEA for the NLP card. The present revision of this drawing is Revision 40 (11NLP). Since there was no change in the signal path circuit, a review of this path for any added or deleted components or changes in component values would determine the impact on the time response of the revised card. The components that could have the most impact on time response if degraded and not be detectable during calibration did not change in value. One of these components was previously selected to determine the bounding value. Other minor changes occurred with components that were determined during original evaluation to have a minor impact on time response or would be detectable during calibration. Some capacitors were deleted during an operational amplifier change. There was no adverse impact on the time response of the card due to this deletion.

Inductors were added to the card input for high frequency noise suppression but the impact of these inductors on time response is insignificant. The original FMEA determined that a similarly installed inductor would have minor impact on the time response of the card.

- NSA card review

The summing amplifier was also upgraded and redesigned to cost effectively extend the life and enhance the performance of the process panel. By taking advantage of the availability of new state of the art components, while maintaining an equivalent signal path circuitry, the redesigned NSA card achieved the following:

Enhanced temperature stability and reduced drift.
Improvement in the ease of testing and calibration.
Significantly improved the reliability rating.
Introduction of a new median select signal selection function.

Westinghouse Drawing 2837A14, Revision 19 was used for the original NSA card FMEA. The present revision of this drawing is Revision 24 (6NSA). Since there was no change to the signal path circuit, a review of this path for any added or deleted components or changes in component values would determine the impact on time response of the revised card. The component that could have the most impact on time response if degraded and not be detectable during calibration did not change in value. This component was previously selected to determine the bounding time response value for the card by a test in a degraded condition. A minor change occurred with one component where degradation would be detectable during calibration. In addition, a few capacitors and a potentiometer were removed which would not adversely impact the time response of the card.

Conclusion

Based on the above evaluation, the FMEA documented in WCAP-14036-P-A, Revision 1, is applicable to the 11NLP card and the 6NSA card. The bounding response time values determined by test and reported in the WCAP are valid for these redesigned cards.

NO SIGNIFICANT HAZARDS EVALUATION FOR REVISING RESPONSE TIME TESTING IN THE VIRGIL C. SUMMER NUCLEAR STATION TECHNICAL SPECIFICATIONS

Description of Amendment Request

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These changes are applicable for selected components provided both the components and the methodology for verification have previously been reviewed and approved by the NRC.

This amendment request provides for the review of two 7300 Process Protection System cards (NLP and NSA) that were part of the original Failure Modes and Effects Analysis (FMEA) but have been redesigned since the publication of the WCAPs. The intention of this review is to demonstrate that the differences in the cards are insignificant with respect to the FMEA and that these additional circuit cards (Group 05 cards) belong in the population of cards that no longer require periodic response time to be measured.

Background

Instrument response time is, generally, the time span from when a monitored variable exceeds a predetermined setpoint, at the channel sensor, until the actuated device is capable of performing its safety function. Response time testing (RTT) has been an integral part of Technical Specifications (TS) surveillance program to assure the proper functioning of the sensors and instrumentation loops for the ESFAS and the RTS.

The Westinghouse Owners Group performed two analyses to assess the impact of elimination of RTT for instruments and instrument loops. These analyses also discussed alternate test methodologies that would show that the instrumentation was functioning properly. The concept is that a component will not degrade to the point that it will not perform its designed function without being detected by periodic calibration or channel checks. The first of these analyses was Westinghouse Owners Group licensing Topical Report WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," which was approved

by the NRC on September 5, 1995. The second analysis, WCAP-14036-P-A, Revision 1, "Elimination of Periodic Protection Channel Response Time Tests," was approved by the NRC on October 6, 1998. Both of these documents contain proprietary Westinghouse information. The Safety Evaluations approving these documents stipulated certain conditions that a licensee must meet when implementing the guidelines presented in these documents. These conditions will be satisfied upon implementation of this change.

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Basis for No Significant Hazards Consideration Determination

South Carolina Electric & Gas Company (SCE&G) has evaluated the proposed changes to the VCSNS TS described above against the Significant Hazards Criteria of 10 CFR 50.92 and has determined that the changes do not involve any significant hazard. The following is provided in support of this conclusion.

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

   This change to the Technical Specifications (TS) does not result in a condition where the design, material, and construction standards that were applicable prior to the change are altered. The same RTS and ESFAS instrumentation is being used; the time response allocations/modeling assumptions in the Final Safety Analysis Report (FSAR) Chapter 15 analyses are still the same; only the method of verifying the time response is changed. The proposed change will not modify any system interface and could not increase the likelihood of an accident since these events are independent of this change. The proposed change will not change, degrade or prevent actions or alter any assumptions previously made in evaluating the radiological consequences of an accident described in the FSAR.

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

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

   This change does not alter the performance of process protection racks, Nuclear Instrumentation, and/or logic systems used in the plant protection systems. These systems will still have response time verified by test before being placed in operational

service. Changing the method of periodically verifying instrument for these systems (assuring equipment operability) from response time testing to calibration and channel checks will not create any new accident initiators or scenarios. Periodic surveillance of these systems will continue and may be used to detect degradation that could cause the response time to exceed the total allowance. The total time response allowance for each function bounds all degradation that cannot be detected by periodic surveillance. Implementation of the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Does this change involve a significant reduction in margin of safety?*

This change does not affect the total system response time assumed in the safety analysis. The periodic system response time verification method for the process protection racks, Nuclear Instrumentation, and logic systems is modified to allow the use of actual test data or engineering data. The method of verification still provides assurance that the total system response is within that defined in the safety analysis, since calibration tests will continue to be performed and may be used to detect any degradation which might cause the system response time to exceed the total allowance. The total response time allowance for each function bounds all degradation that cannot be detected by periodic surveillance. Based on the above, it is concluded that the proposed change does not result in a significant reduction in margin with respect to plant safety.

Pursuant to 10 CFR 50.91, the preceding analyses provides a determination that the proposed Technical Specifications change poses no significant hazard as delineated by 10 CFR 50.92.

Environmental Assessment

This proposed Technical Specification change has been evaluated against criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed change meets the criteria for categorical exclusion as provided for under 10 CFR 51.22(c)(9). The following is a discussion of how the proposed Technical Specification change meets the criteria for categorical exclusion.

10 CFR 51.22(c)(9): Although the proposed change involves change to requirements with respect to inspection, surveillance, or design requirements:

(i) the proposed change involves No Significance Hazards Consideration (refer to the No Significant Hazards Consideration Determination section of this Technical Specification Change Request);

(ii) there are no significant changes in the types or significant increase in the amounts of any effluents that may be released offsite since the proposed change does not affect the generation of any radioactive effluents nor does it affect any of the permitted release paths; and

(iii) there is no significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Based on the aforementioned and pursuant to 10 CFR 51.22(b), no environmental assessment or environmental impact statement need be prepared in connection with issuance of an amendment to the Technical Specifications incorporating the proposed change.

COMMITMENTS TO ENSURE EQUIPMENT OPERABILITY RELATED TO REVISING RESPONSE TIME TESTING IN THE VIRGIL C. SUMMER NUCLEAR STATION TECHNICAL SPECIFICATIONS

Description of Amendment Request

The Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS), were revised by Amendment 146 to change the definitions for 1.12 "Engineered Safety Feature (ESF) Response Time" and 1.26 "Reactor Trip System (RTS) Response Time". These changes allow the verification of response time, whereas, the previous definitions implied the response time must be measured. This permits the use of a "bounding value" for the component or instrument loop response time instead of having to perform the measurement of the response time.

Additionally, Surveillance Requirements 4.3.1.2 and 4.3.2.2 were revised to incorporate the philosophy approved in WCAPs 13632-P-A, Revision 2 and 14036-P-A, Revision 1. This change replaced the words "demonstrated" and "tested" with the words "verified" and "verification". Associated Bases changes were made to Section B 3/4.3.1 and B 3/4.3.2.

These changes are applicable for selected components provided both the components and the methodology for verification have previously been reviewed and approved by the NRC.

This amendment request provides for the review of two 7300 Process Protection System cards (NLP and NSA) that were part of the original Failure Modes and Effects Analysis (FMEA) but have been redesigned since the publication of the WCAPs. The intention of this review is to demonstrate that the differences in the cards are insignificant with respect to the FMEA and that these additional circuit cards (Group 05 cards) belong in the population of cards that no longer require periodic response time to be measured.

Background

Instrument response time is, generally, the time span from when a monitored variable exceeds a predetermined setpoint, at the channel sensor, until the actuated device is capable of performing its safety function. Response time testing (RTT) has been an integral part of Technical Specifications (TS) surveillance program to assure the proper functioning of the sensors and instrumentation loops for the ESFAS and the RTS.

The Westinghouse Owners Group performed two analyses to assess the impact of elimination of RTT for instruments and instrument loops. These analyses also discussed alternate test methodologies that would show that the instrumentation was functioning properly. The concept is that a component will not degrade to the point that it will not perform its designed function without being detected by periodic calibration or channel checks. The first of these analyses was Westinghouse Owners Group licensing Topical Report WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," which was approved by the NRC on September 5, 1995. The second analysis, WCAP-14036-P-A, Revision 1,

"Elimination of Periodic Protection Channel Response Time Tests," was approved by the NRC on October 6, 1998. Both of these documents contain proprietary Westinghouse information. The Safety Evaluations approving these documents stipulated certain conditions that a licensee must meet when implementing the guidelines presented in these documents. These conditions will be satisfied upon implementation of this change.

Westinghouse completed an additional evaluation for the Loop Power Supply (NLP) and Summing Amplifier (NSA) cards that have been revised since the WCAP-14036, Revision 1 was submitted. The newer version of these cards is identified as Group 05. These cards were reviewed; the conclusion is that there were only minor changes that had insignificant impact on the response time, and the bounding values approved in the WCAP are still applicable.

Commitments to Assure Equipment Operability

There are no commitments proposed in this amendment request. All commitments provided in the amendment request for Amendment 146 (TAC No MA8632) remain valid for this request.

This change request is to provide information that demonstrates the Group 05 cards are essentially the same as the cards evaluated in WCAP-14036-P-A, Revision 1. Once this demonstration is accepted, the Group 05 cards will be included in the population of process cards that no longer require periodic response time testing.