CEOG COMBUSTION ENGINEERING OWNERS GROUP

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June 6, 2000
CEOG-00-171

NRC CEOG Project Number 692

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

**Subject:** **Submittal of Revised Appendix A to CE NPSD-1167, Rev 02 for Staff Review (Non-proprietary)**

Reference: CEOG Letter, R. Phelps to U.S. NRC, "Transmittal of RTT Elimination Topical Report CE NPSD-1167, Rev 02," CEOG-00-144, 5/12/00.

The CE Owners Group submitted non-proprietary topical report CE NPSD-1167, Rev 02 for NRC review and approval (Reference). In response to subsequent discussion with the staff regarding Appendix A to subject report, the CEOG is providing herewith revisions to pages A-1 and A-2 of Appendix A. The word "measured" has been changed to "verified" in the definitions for ESF response time and RPS response time on page A-1.

The NRC is requested to complete your review and issue a Safety Evaluation for CE NPSD-1167 Rev 02. Pursuant to NUREG-0390, twelve (12) copies of revised pages A-1 and A-2 of Appendix A to CE NPSD-1167, Revision 2, are submitted herewith for staff review.

If you have any questions, please contact me.

Very truly yours,

R J Phelps

Ralph Phelps, Chairman
CE Owners Group

Attachment:

cc: J. S. Cushing (NRC) w/ 2 copies
G. C. Bischoff (W)

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## REVISIONS TO TECHNICAL SPECIFICATIONS

This Appendix provides typical changes to Technical Specifications to remove the requirement to perform response time testing of RPS and ESFAS pressure and differential pressure sensors. Each plant's current Tech Specs should be compared with the sections given below to confirm whether or not a License Amendment will be required. The generic Tech Specs statements given below are based on a review of C-E Standard Tech Specs contained in NUREG-1432. Recommended Tech Spec deletions are marked with a double strike-through; *text additions are shown in italics.*

## RECOMMENDED TECH SPEC DEFINITIONS

Engineered Safety Feature (ESF) Response Time

The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.) Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be ~~measured~~ *verified* by any sequence of sequential, overlapping, or total steps such that the entire response time is ~~measured~~ *verified, or by the summation of allocated sensor response times with the results of actual measured response times for the remainder of the channel.*

Reactor Protection System (RPS) Response Time

The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until electrical power to the CEA drive mechanisms is interrupted. The response time may be ~~measured~~ *verified* by any sequence of sequential, overlapping, or total steps such that the entire response time is ~~measured~~ *verified, or by the summation of allocated sensor response times with the results of actual measured response times for the remainder of the channel.*

## RECOMMENDED TECH SPEC SURVEILLANCE REQUIREMENTS

SR 3.3.1.14 RPS Instrumentation- Operating (Digital)

Verify RPS RESPONSE TIME is within limits.

[NOTE: Neutron detectors are excluded *(from RPS RESPONSE TIME testing).*]

Frequency: [18] months on a STAGGERED TEST BASIS.

SR 3.3.5.4 ESFAS Instrumentation (Digital)

Verify ESF RESPONSE TIME is within limits.

Frequency: [18] months on a STAGGERED TEST BASIS.

## RECOMMENDED TECH SPEC BASES

**Bases for SR 3.3.1.14: RPS Instrumentation – Operating (Digital):**

This SR ensures that the RPS RESPONSE TIMES are verified to be less than or equal to the maximum values assumed in the safety analysis. Individual component response times are not modeled in the analyses. The analyses model the overall or total elapsed time from the point at which the parameter exceeds the trip setpoint value at the sensor to the point at which the RTCBs open. Response times are *verified* ~~conducted~~ on a [18]-month STAGGERED TEST BASIS. This results in the interval between successive surveillances of a given channel of n x [18] months, where n is the number of channels in the function. The Frequency of [18] months is based on operating experience, which has shown that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences. Also, response times cannot be determined at power since equipment operation is required. ~~Testing may be performed in one measurement or in overlapping segments, with verification that all components are tested.~~

*Response time may be verified by any sequence of sequential, overlapping, or total steps, including allocated sensor response time, such that the entire response time is verified. Allocations for sensor response time may be determined from records of test results, vendor test data, or vendor engineering specifications. Topical Report CE NPSD-1167 (Ref A), "Elimination of Pressure Sensor Response Time Testing Requirements," provides a basis for using allocated response times for specific pressure sensors. The allocation for sensor response times must be verified prior to placing a new component in operation and re-verified following maintenance that may adversely affect the sensor response time.*

*Response time testing acceptance criteria are included in Reference [B].*

A Note is added to indicate that the neutron detectors are excluded from RPS RESPONSE TIME testing because they are passive devices with minimal drift and because of the difficulty of simulating a meaningful signal. Slow changes in detector sensitivity are compensated for by performing the daily calorimetric calibration (SR 3.3.1.4).

**Bases for SR 3.3.5.4: ESFAS Instrumentation (Digital)**

This Surveillance ensures that the train actuation response times are within the maximum values assumed in the safety analyses. *Response time may be verified by any sequence of sequential, overlapping, or total steps, including allocated sensor response time, such that the entire response time is verified. Allocations for sensor response time may be determined from records of test results, vendor test data, or vendor engineering specifications. CE NPSD-1167 (Ref A), "Elimination of Pressure Sensor Response Time Testing Requirements," provides a basis for using allocated response times for specific pressure sensors. The allocation for sensor response times must be verified prior to placing a new component in operation and re-verified following maintenance that may adversely affect the sensor response time.*

Response time testing acceptance criteria are included in Reference [B].

ESF RESPONSE TIME tests are conducted on a STAGGERED TEST BASIS of once every [18] months. The [18] month Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.