



August 26, 2005

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**ATTENTION:** Document Control Desk

**SUBJECT:** Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318  
Change a Surveillance Requirement for Reactor Trip Circuit Breakers –  
Supplemental Information

**REFERENCES:**

- (a) Letter from Mr. G. Vanderheyden (CCNPP) to Document Control Desk (NRC), dated August 3, 2004, License Amendment Request: Change a Surveillance Requirement for Reactor Trip Circuit Breakers
- (b) Letter from Mr. G. Vanderheyden (CCNPP) to Document Control Desk (NRC), dated July 8, 2005, Change a Surveillance Requirement for Reactor Trip Circuit Breakers – Supplemental Information

Reference (a) submitted a request to change the frequency of the surveillance test interval for the reactor trip circuit breakers (RTCB) from 31 days to 92 days. This requested change was based on topical report CE NPSD-951-A, Revision 01, "Reactor Trip Circuit Breakers Surveillance Frequency Extension." Supplemental information was provided in Reference (b). Subsequent discussion with the Nuclear Regulatory Commission (NRC) staff has resulted in the need to provide supplemental information for our original request. Changes to the marked up Technical Specification page are contained in Attachment (1) and supersede those provided in Reference (b).

In Reference (a), we proposed extending the RTCB testing (Surveillance Requirement [SR] 3.3.3.1) from monthly to quarterly and alternating the testing with the RTCB logic testing (SR 3.3.3.2). The alternating testing was proposed so the RTCB reliability to trip on demand would be verified approximately every six weeks instead of every three months. This testing schedule is supported by the approved topical report, CE NPSD-951-A, Revision 01, "Reactor Trip Circuit Breakers Surveillance Frequency Extension."

We proposed putting the requirements to alternate the testing in the Technical Specification Bases (Reference a), but did not submit the proposed Technical Specification Bases changes. Since the requirement to alternate surveillance testing is described in the topical report and demonstrates the vendor recommended interval for cycling of each RTCB, we are submitting the marked up Technical Specification Bases changes to the NRC Staff showing how we will capture the appropriate testing intervals. The marked up Technical Specification Bases changes are also contained in Attachment (1). Note that the Technical Specification Bases are controlled in accordance with Technical Specification 5.5.14, "Technical Specification Bases Control Program."

ADD1



**ATTACHMENT (1)**

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**MARKED-UP TECHNICAL SPECIFICATION PAGE**

**AND**

**MARKED-UP TECHNICAL SPECIFICATION BASES PAGES**

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**3.3.3-2**

**B 3.3.3-11**

**B 3.3.3-12**

RPS Logic and Trip Initiation  
3.3.3

ACTIONS (continued)

| CONDITION  | REQUIRED ACTION                       | COMPLETION TIME |
|--|---------------------------------------|-----------------|
| D. Two channels of RTCBs or Trip Path Logic affecting the same trip leg inoperable.  | D.1 Open the affected RTCBs.          | Immediately     |
| E. Required Action and associated Completion Time of Condition A, B, or D not met.<br><br><u>OR</u><br><br>One or more Functions with two or more Manual Trip, Matrix Logic, Trip Path Logic, or RTCB channels inoperable for reasons other than Condition A or D. | E.1 Be in MODE 3.                     | 6 hours         |
|  | <u>AND</u><br><br>E.2 Open all RTCBs. | 6 hours         |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE  | FREQUENCY   |
|---|---|
| SR 3.3.3.1 Perform a CHANNEL FUNCTIONAL TEST on each RTCB channel.      | <del>30</del> days <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">92</span> |
| SR 3.3.3.2 Perform a CHANNEL FUNCTIONAL TEST on each RPS Logic channel. | 92 days   |

BASES

one manual trip, matrix logic, trip path logic, or RTCB channel is inoperable for reasons other than Condition A or D.

If the RTCBs associated with the inoperable channel cannot be opened, the reactor must be shut down within 6 hours and all the RTCBs opened. A Completion Time of 6 hours is reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner, without challenging plant systems, and to open RTCBs. All RTCBs should then be opened, placing the plant in a MODE where the LCO does not apply and ensuring no CEA withdrawal occurs.

SURVEILLANCE  
REQUIREMENTS

SR 3.3.3.1

A CHANNEL FUNCTIONAL TEST is performed on each RTCB channel every ~~37~~ days. This verifies proper operation of each RTCB. The RTCB must then be closed prior to testing the other RTCBs, or a reactor trip may result. The frequency of ~~37~~ days is based on the reliability analysis presented in Reference 3. Scheduling SR 3.3.3.1 and SR 3.3.3.2 such that the RTCBs testing is performed at least every 6 weeks meets SR 3.3.3.2 vendor recommended intervals for cycling of each RTCB in accordance with Reference 3.

A CHANNEL FUNCTIONAL TEST on each RPS logic channel is performed every 92 days to ensure the entire channel will perform its intended function when needed.

In addition to reference voltage tests, the RPS CHANNEL FUNCTIONAL TEST consists of three overlapping tests as described in Reference 1, Section 7.2. These tests verify that the RPS is capable of performing its intended function, from bistable input through the RTCBs. The first test, the instrument channel test, is addressed by SR 3.3.1.4 in LCO 3.3.1.

This SR addresses the two tests associated with the RPS logic: matrix logic and trip path logic.

Matrix Logic Tests

These tests are performed one matrix at a time. They verify that a coincidence in the two instrument channels for each

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Scheduling SR 3.3.3.1 and SR 3.3.3.2 such that the RTCBs testing is performed at least every 6 weeks meets vendor recommended intervals for cycling of each RTCB in accordance with Reference 3.

BASES

Function removes power from the matrix relays. During testing, power is applied to the matrix relay test coils and prevents the matrix relay contacts from assuming their de-energized state. The matrix logic tests will detect any short circuits around the bistable contacts in the coincidence logic such as may be caused by faulty bistable relay or trip bypass contacts.

Trip Path Tests

These tests are similar to the matrix logic tests, except that test power is withheld from one matrix relay at a time, allowing the trip path circuit to de-energize, opening the affected set of RTCBs. The RTCBs must then be closed prior to testing the other three trip path circuits, or a reactor trip may result.

The Frequency of 92 days is based on the reliability analysis presented in Reference ~~8~~ 4

SR 3.3.3.3

A CHANNEL FUNCTIONAL TEST on the manual trip channels is performed prior to a reactor startup to ensure the entire channel will perform its intended function if required. The manual trip Function can be tested either at power or shut down. However, the simplicity of this circuitry and the absence of drift concern makes this Frequency adequate. Additionally, operating experience has shown that these components usually pass the SR when performed once within 7 days prior to each reactor startup.

REFERENCES

1. UFSAR
2. 10 CFR Part 100, "Reactor Site Criteria"
- ~~8~~ 4. Combustion Engineering Topical Report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" dated June 2, 1986, including Supplement 1, March 3, 1989

3. Combustion Engineering Topical Report CE NPSD-951-A, Revision 01, "Reactor Trip Circuit Breakers Surveillance Frequency Extension, September 1999.