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Ref. # 10CFR2.201

**TU ELECTRIC**

February 15, 1993

William J. Cahill, Jr.  
Group Vice President

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

SUBJECT: COMBINE PEAK STEAM ELECTRIC STATION (CPSES)  
DOCKET NOS. 50-445 AND 50-446  
NRC INSPECTION REPORT NO. 50-445/9251; 50-446/9251  
RESPONSE TO NOTICE OF VIOLATION

Gentlemen:

TU Electric has reviewed the NRC's letter dated December 31, 1992, concerning the inspection period of October 25 through December 5, 1992. This inspection covered activities authorized by the NRC operating license NPF-87 and construction permit CPI-127. Attached to the December 31, 1992 letter was a Notice of Violation (NOV).

On January 28, 1993, per conversation with Mr. L. A. Yandell, we requested and received an extension for submitting the response to this NOV until February 15, 1993.

TU Electric hereby responds to the Notice of Violation (445/9251-01) in the attachment to this letter. This response addresses the impact of the subject testing on the operability of the equipment involved and discusses other systems identified in the Westinghouse Technical Bulletin NSD-TB-89-06.

Sincerely,

*William J. Cahill, Jr.*

William J. Cahill, Jr.

By: *Roger D. Walker*  
Roger D. Walker  
Manager of Regulatory Affairs  
for NEO

190051

OB/tg  
Attachment

c - Mr. J. L. Milhoan, Region IV  
Mr. L. A. Yandell, Region IV  
Mr. B. E. Holian, NRR  
Mr. T. A. Bergman, NRR  
Resident Inspectors, CPSES (2)

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**NOTICE OF VIOLATION**  
**(445/9251-01)**

Criterion XVI of Appendix B to 10CFR Part 50, as implemented by Section 16 of the TU Electric Quality Assurance Manual, requires that conditions adverse to quality are promptly identified and corrected. Furthermore, for significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and that adequate corrective actions to preclude repetition are taken.

Contrary to the above, the corrective measures implemented in response to Westinghouse Technical Bulletin NSD-TB-89-06 were inadequate in that multiple deficiencies of TERMI-POINT connection clips were subsequently identified on both trains of the Unit 1 Solid State Protection System.

**RESPONSE TO NOTICE OF VIOLATION**  
**(445/9251-01)**

TU Electric accepts the violation and the requested information as follows:

1. **Reason for the Violation**

The Solid State Logic Protection System (SSPS) takes binary inputs (voltage/no voltage) from the process and nuclear instrument channels corresponding to conditions (normal/abnormal) of plant parameters. The SSPS combines these signals in the required logic combination and generates a trip signal (no voltage) to the undervoltage coils of the reactor trip circuit breakers. The system also provides annunciator, status light and computer input signals. The protection system is designed to provide two, three, or four instrument channels for each protective function and two logic train circuits. Loss of input power to a logic train will result in a signal calling for a trip within 1 channel or train will not prevent protection.

Westinghouse Technical Bulletin NSD-TB-89-06, dated 1989. The issue was added to the Industrial Review (IDER) tracking list. The recommendation was to test in a work order. However, due to the test results, the pull test results were not immediately. Nevertheless, the SSP TERMI-POINT clips and the first refueling outage was

terminated pursuant to 10 CFR 50.103(b)(1) included that this

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(445/9251-01)

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RESPONSE TO NOTICE OF VIOLATION  
(445/9251-01)

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1. Reason for the Violation

The Solid State Logic Protection System (SSPS) takes binary inputs (voltage/no voltage) from the process and nuclear instrument channels corresponding to conditions (normal/abnormal) of plant parameters. The SSPS combines these signals in the required logic combination and generates a trip signal (no voltage) to the undervoltage coils of the reactor trip circuit breakers. The system also provides annunciator, status light and computer input signals. The protection system is designed to provide two, three, or four instrument channels for each protective function and two logic train circuits. Loss of input power to a channel or logic train will result in a signal calling for a trip. Any single failure within a channel or train will not prevent protective action.

TU Electric received Westinghouse Technical Bulletin NSD-TB-89-06 (WTB) on or about November 17, 1989. The issue was added to the Industry Operating Experience Review (IOER) tracking list. The recommendations of the WTB were incorporated in a work order. However, due the unavailability of the pull tester at CPSES, the pull test recommended by the WTB could not be performed immediately. Nevertheless, a 100% visual inspection was completed, of SSP TERMI-POINT clips and concurrence to delay the pull test until the first refueling outage was obtained from Westinghouse.

Moreover, a reportability evaluation pursuant to 10CFR50.55(e) was performed. This evaluation concluded that this issue was non-reportable.



Subsequently, in evaluating the work that was scheduled to be performed during the refueling outage, the system engineer assigned to the SSPS concluded that the WTB recommendations were not required. This conclusion was based on verbal discussions with other utilities, his immediate supervisor and Westinghouse, and the following:

- o In March of 1988, a 100% visual inspection of SSPS TERMI-POINTS was conducted. The inspection found 23 incorrectly installed clips. These clips were reworked to correct the problems.
- o The pull test is a quality control check recommended by the vendor when TERMI-POINTS are installed. The pull test was intended for new equipment. Pull testing equipment that has been in service (with no known failures at CPSES) for a number of years can shift the clip and wire of an acceptable connection such that dust or oxidation is introduced to the area between the wire and connector post.
- o Because of the point to point wiring method used, the TERMI-POINT connections in SSPS cabinets are in most cases difficult to access. Pull testing would require that a majority of the wires be disturbed to gain access. This could put undue stress on the wires and connections.
- o SSPS TERMI-POINT connections continuity is verified every two months via performance of Technical Specification required actuation logic tests.

Additionally, the issue was closed in the Industry Operating Experience Review (IOER) program based on the conclusions provided by the system engineer.

## 2. Corrective Steps Taken and Results Achieved

Operations Notification and Evaluation (ONE) form was generated to document this issue, facilitate corrective actions and address concerns of operability during the first and second fuel cycles. The TERMI-POINTS in the safety related systems have been tested per the Westinghouse Technical Bulletin requirements. Those items that did not pass the pull test have been replaced.

The surveillance testing demonstrated that the system would initiate any required Engineering Safety Function actuation or Reactor Trip as designed. This is further substantiated by visual inspections that confirmed that the wires were in contact with the circuit terminal post before pull testing. The clips at CPSES were installed per the recommended procedure with the proper tools. Additionally, a 100%

visual inspection was performed prior to initial core load to verify that the clips were correctly crimped onto the post. Thus, the clips were securely installed to the post, and the SSPS was operable prior to pull testing.

The pull testing of both trains was performed while the core was unloaded for refueling. SSPS was not required to be operational during this time. After testing and rework was completed, SSPS was restored to an operable status before returning to service.

The pull test is an extremely conservative test recommended by the Westinghouse bulletin to assure continuity and is not an accurate representation of the forces that would be experienced during a seismic event. A calculation was performed as part of the technical evaluation to determine the actual forces on the clips in the event of a seismic event. The calculation showed that the actual forces on the clips from a seismic event were minimal. Failure of the pull test does not demonstrate that the connection would fail during a seismic event. A clip installed with a proper tool and proper procedure which has been visually inspected and continuity tested is operable and will perform it's safety function during a seismic event.

Therefore, the pull test failures are not a seismic concern and did not affect system operability.

Additionally, TU Electric will perform visual inspections of the non-safety related systems which were identified in the Westinghouse Technical Bulletin, and will correct deficiencies as required.

A voluntary Licensee Event Report (LER) will be sent to the NRC evaluating the results of the TERMI-POINTS which were unable to meet the pull tests.

3. Corrective Steps Taken to Avoid Recurrence

Future Westinghouse Technical Bulletins will be processed and tracked through the Vendor Equipment Technical Information program (VETIP), with correspondence forwarded to the responsible engineering manager for resolution. Deviations from the vendors recommendations will be documented with proper justifications.

4. Date When Full Compliance Will Be Achieved

TU Electric is in full compliance.

Visual inspect of the non-safety related TERMI-POINTS will be completed by the Unit 1 third refueling outage.