



**Nebraska Public Power District**

"Always there when you need us"

NLS2009078  
October 5, 2009

21.21(d)(3)

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

Subject: 10 CFR 21 Notification - Identification of Defect  
Cooper Nuclear Station, Docket No. 50-298, DPR-46

Reference: Letter from Stewart B. Minahan, Nebraska Public Power District, to the U.S.  
Nuclear Regulatory Commission, dated December 2, 2008, "10 CFR 21  
Notification – Identification of Defect"

Dear Sir or Madam:

The purpose of this letter is for Nebraska Public Power District (NPPD) to provide written notification to the Nuclear Regulatory Commission (NRC) regarding the identification of a defect found in a basic component at Cooper Nuclear Station. This notification is being submitted pursuant to 10 CFR 21.21(d)(3). The attachment to this letter provides the information required by 10 CFR 21.21 (d)(4).

This written notification is similar to the written notification submitted by NPPD to the NRC on December 2, 2008 (Reference) in that the basic component failure is considered to be a continuation of quality problems associated with the manufacturer's product.

Should you have any questions concerning this matter, please contact David Van Der Kamp, Licensing Manager, at (402) 825-2904.

Sincerely,

Stewart B. Minahan  
Vice President - Nuclear and  
Chief Nuclear Officer

/dm

Attachment

IE19  
NRK

NLS2009078

Page 2 of 2

cc: Regional Administrator, w/attachment  
USNRC - Region IV

Cooper Project Manager, w/attachment  
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector, w/attachment  
USNRC – CNS

NPG Distribution, w/attachment

CNS Records, w/attachment

**Notification per 10 CFR 21.21 (d)(3)(ii)**

This notification follows the format of and addresses the considerations contained in 10 CFR 21.21 (d)(4)(i) – (viii).

- (i) Name and address of the individual or individuals informing the Commission.

Stewart B. Minahan  
Vice President - Nuclear and Chief Nuclear Officer  
Cooper Nuclear Station  
P.O. Box 98  
Brownville, NE 68321-0098

- (ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Facility:

Cooper Nuclear Station  
P.O. Box 98  
Brownville, NE 68321-0098

Basic component which fails to comply or contains a defect:

Bussmann general purpose fuse rated at 10 amps, 250 volts alternating current.  
Manufacturer Part Number NON-10 ; Date Code R18. "R" indicates the year of manufacture which is 2008. "18" indicates the week of manufacture was the 18<sup>th</sup> week of the year.

- (iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

These fuses were procured as commercial grade items and dedicated by Nebraska Public Power District (NPPD).

Manufactured by: Cooper Industries, Inc.  
Bussmann Division  
114 Old State Road  
Ellisville, MO 63021

- (iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply:

Bussmann fuse NON-10 with a date code of R18 contained an underlying fabrication vulnerability consisting of a missing fuse link internal to the fuse. The missing fuse link was discovered via destructive testing at Cooper Nuclear Station (CNS). The destructive test was prompted when the fuse failed a field continuity test prior to installation. The fuse had passed CNS dedication, which included a resistance test of 100% of the batch by the manufacturer.

After discovery of the condition, the non-installed fuses in unrestricted inventory from this batch (18 in total) were resistance tested by CNS personnel. Although, none of the other fuses in this batch exhibited missing links via resistance testing, the fuse with the missing link is considered to be a continuation of quality problems previously reported to the Nuclear Regulatory Commission (NRC) in a written notification from NPPD to the NRC dated December 2, 2008 (Reference 1). In that written notification, NPPD had identified that several Bussmann fuses, Manufacturer Part Number NON-10, date code J47, contained poor solder joints internal to the fuse assembly.

Bussmann NON-10 fuses are authorized by NPPD for use in both safety-related and non safety-related applications. The applicable dedication package identifies one of the safety functions as "fuses are required to conduct the design basis load current without interruption." If the fuses were installed without the condition being detected and failed upon valid demand of the associated circuit, the mission of the associated safety-related equipment may not have been accomplished. Since the condition was found prior to installation of the defective fuse, the safety function of the supported equipment remains unaffected. Other locations where the batch R18 fuses are installed have been determined to be operable through actual circuit operation or measurements across the fuses. Therefore, this condition is not reportable under 10 CFR 50.72 or 50.73.

Vendor testing and current dedication practices should have precluded the possibility of placing a fuse with a similar condition into unrestricted spares. However, these barriers failed. This provided a potential for a Substantial Safety Hazard. 10 CFR 21 does not credit pre-installation or post-maintenance testing for the detection of a defect. The dedication does not require CNS to perform a continuity check as credit is given to the vendor, per Nuclear Issues Procurement Committee survey, for performing the continuity check at the manufacturer's facility.

Since the fuses were stocked in unrestricted spares for essential applications, 10 CFR 21 applies, and the condition is reportable under 10 CFR 21.21.

- (v) The date on which the information of such defect or failure to comply was obtained.

On September 8, 2009, NPPD completed its internal evaluation. NPPD made initial notification (Event No. 45334, Reference 2) to the Nuclear Regulatory Commission of this condition per 10 CFR 21.21(d)(3)(i) on September 9, 2009.

- (vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

These specific fuses were purchased as commercial grade items and were dedicated by NPPD for its own use at CNS. The fuses are shipped directly from an authorized Bussmann facility to CNS. There were a total of 50 fuses in the batch coded R18. 27 are installed at CNS as of September 24, 2009. Of the 27 installed fuses, 19 are installed in safety-related applications. Operability evaluations have been performed. These evaluations have concluded that the subject fuses are operable based on the conclusion that the condition would be self revealing in the current specific applications. None have been removed and discarded.

Of the 23 fuses not installed in the plant, four have been destructively examined in order to validate that this batch did not contain the defect reported to the NRC in Reference 1. One spare fuse has been destructively examined in order to determine that the fuse link was missing. The remaining 18 spare fuses have undergone resistance testing in order to ensure the fuse link is present and have been returned to unrestricted spares. None of the subject fuses have been provided by NPPD to other utilities.

- (vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

Corrective actions taken or planned:

The specific actions and due dates are governed by the CNS Corrective Action Program.

- 1) Bussmann fuses, dedicated by the specific Commercial Grade Dedication plan, will not be released for use without resistance and dimension verification.
- 2) The NPPD Procurement Engineering Department at CNS will revise the Commercial Grade Dedication plans for the Bussmann NON-10 and similarly constructed fuses to take less credit for the manufacturer's certificate of compliance (C of C) and, instead perform resistance testing and dimensional inspections, in-house.

- (viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

Utilities should review their dedication practices regarding the dedication of Bussmann fuses. Utilities should determine the appropriateness of relying on the manufacturer's C of C versus performing tests and dimensional inspections themselves. The advice regarding dimensional inspections would help detect the condition that was reported in Reference 1.

#### **References**

- 1) Letter from Stewart B. Minahan, NPPD, to the U.S. Nuclear Regulatory Commission, dated December 2, 2008, "10 CFR 21 Notification – Identification of Defect"
- 2) Emergency Notification No. 45334, from NPPD to the U.S. Nuclear Regulatory Commission, September 9, 2009, Reported under 10 CFR 21(d)(3)(i)

