



---

501 South 11th Street

Mount Vernon, IL 62864

Phone: 618-244-6000

Fax: 618-244-6641

August 30, 2017

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

Subject: Report of Potential 10CFR Part 21, Allen Bradley Relay Model 700DC

Pursuant to 10CFR 21.21 (d) (3) (ii), Nutherm International, Inc. is providing written notification of the identification of a potential failure to comply.

On the basis of our evaluation, it is determined that Nutherm International, Inc. does not have sufficient information to determine if the subject condition would, or has, created a Substantial Safety Hazard or would have created a Technical Specification Safety Limit violation as it relates to the subject plant applications.

The following information is required per 10CFR 21.21 (d) (4)

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

Thomas A. Sterbis, President  
Nutherm International, Inc.  
501 South 11th Street  
Mount Vernon, Illinois 62864

(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.

On 8/28/2017 Cooper notified the NRC of a reportable condition under 10CFR Part 21. An Allen Bradley relay base model 700DC exhibited early failure after 133 hours of service.

This relay, model 700DC, has been dedicated/qualified for multiple applications for various plants.

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

Nutherm International, Inc., 501 South 11th Street. Mount Vernon, Illinois 62864.

(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.

The Allen Bradley 700DC series relay coil failed after 133 hours of service. This failure was determined by Cooper Nuclear Station to have been a component infant mortality likely caused by a manufacturing flaw that likely occurred due to a tensioning issue at the start of the coil wire winding process. Failure of the coil will result in failure of the relay, which could result in a safety hazard.

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

August 29, 2017.

(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.

Nutherm International, Inc. has concluded its review of all procurements of the 700DC series relays that use the coil in question and have found forty-nine (49) units shipped to customers which could potentially have this defect. The following facility was determined to be impacted by this condition:

Utility	Plant	Purchase Order	Part Number	Nutherm Traceability Number
NPP	Cooper	4500191980	700DC-P220Z2	14194-01R0 1/01, 14194-01R0 1/02, 14194-01R0 1/03, 14194-01R0 1/04,
NPP	Cooper	4500178042	700DC-P220Z2	13695-01R0 1/01, 13695-01R0 1/02, 13695-01R0 1/03, 13695-01R0 1/04,
NPP	Cooper	4500163578	700DC-P220Z2	13163-01R0 1/01, 13163-01R0 1/02, 13163-01R0 1/03, 13163-01R0 1/04, 13163-01R0 1/05
NPP	Cooper	4500146142	700DC-P220Z2	12629-01R1 1/01, 12629-01R1 1/02, 12629-01R1 1/03, 12629-01R1 1/04, 12629-01R1 1/05, 12629-03R0 1/01, 12629-03R0 1/03
NPP	Cooper	4500133277	700DC-P220Z2	12186-01R0 1/01, 12186-01R0 1/02, 12186-01R0 1/03, 12186-01R0 1/04, 12186-01R0 1/05
IMP	DC Cook	01521808	700DC-P220Z2	10497-01R0 1/01, 10497-01R0 1/02, 10497-01R0 1/03
NPP	Cooper	4500066993	700DC-P220Z2	10320-01R0 1/01, 10320-01R0 1/02, 10320-01R0 1/03, 10320-01R0 1/04, 10320-01R0 1/05, 10320-01R0 1/06, 10320-01R0 1/07, 10320-01R0 1/08, 10320-01R0 1/09, 10320-01R0 1/10, 10320-01R0 1/11, 10320-01R0 1/12, 10320-01R0 1/13
NPP	Cooper	4500053578	700DC-P220Z2	9361-02R1 1/02, 9361-02R1 1/03, 9361-02R1 1/04, 9361-02R1 1/05, 9361-02R1 1/06, 9361-02R1 1/07, 9361-02R1 1/08, 9361-08R0 1/01

NPP = Nebraska Public Power  
 Cooper = Cooper Nuclear Station  
 IMP = Indiana Michigan Power Co  
 DC Cook = Donald C. Cook Nuclear Plant

Page 3

August 30, 2017

(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.

Initial actions of determining the units affected were completed 8/30/2017. The impacted customers were notified of this condition 8/30/2017. Nutherm International, Inc. does not have sufficient information to determine this condition would, or has, created a Substantial Safety Hazard or would have created a Technical Specification Safety Limit violation as it relates to the subject plant applications. Nutherm has no current orders for these units and has no units in stock. No further actions will be taken at this time.

(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.

This issue has been identified as a "component infant mortality" failure caused by a manufacturing flaw. The manufacturing flaw appears to be a random failure and was identified by Cooper Nuclear Station as likely to have occurred due to a tensioning issue at the start of the coil wire winding process. Failure of the coil would be expected to occur within a few days of operation. The Units that have been installed and in operation for more than two months could be considered to not contain this random manufacturing flaw.

(ix) In the case of an early site permit, the entities to whom an early site permit was transferred.  
Not applicable.

Sincerely,  
**NUTHERM INTERNATIONAL, Inc.**



Thomas A. Sterbis  
President

TAS/abs