



September 14, 2004  
MFN 04-100

Document Control Desk  
United States Nuclear Regulatory Commission  
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11555 Rockville Pike  
Rockville, Maryland 20852-2738

**Subject: GENE Part 21 Transfer of Information: Loose Terminal Strip,  
Barksdale Pressure Switch**

This letter is written in response to a NRC staff informal request for information regarding a GE Nuclear Energy (GENE) 10CFR21 Transfer of Information, SC04-05, "Loose Internal Terminal Strip, Barksdale Pressure Switch," May 7, 2004. One of the utilities that received the Transfer of Information from GENE recently submitted a 10CFR21 60-Day Interim Report Notification to the NRC, which referenced SC04-05, and prompted the NRC staff request.

The plants that received the GENE Transfer of Information (TI) are identified in Attachment 1. Attachment 2 provides the TI information in accordance with 10CFR21.21(d)(4). The information in Attachment 2 section (vii) has been updated from that provided with SC04-05 to reflect corrective actions that have been completed.

The GENE Part 21 evaluation was initiated when a BWR plant experienced a number of spurious Reactor Protection System (RPS) half-scrum events. The Apparent Cause Evaluation determined that the cause of the open circuit condition was a terminal strip screw coming loose inside the Barksdale pressure switch housing. During the investigation, it was also discovered that the adhesive bonding of the terminal strip to the switch housing had failed and the terminal strip was no longer physically attached to the switch housing. It is not known if the failed adhesive led to a condition that caused the screw to come loose, leading to the open circuit condition.

GENE provided this pressure switch to plants as dedicated safety-related replacements for various specified and unspecified applications. The GENE evaluation concluded that the condition was not reportable for the specified applications. However, GENE did not have sufficient information to complete the evaluation for plants that had purchased the switches as unspecified components, and therefore, provided the Part 21 Transfer of Information as described above.

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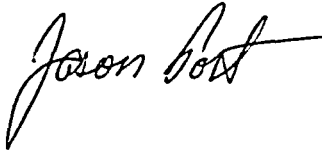
### Safety Basis

The specified application is to use the switch in the RPS to provide a scram during a load rejection based on energizing the fast-acting solenoids. For this application, the potential failure modes associated with a loose terminal screw result in a spurious RPS trip. A credible failure mode that could result in a failure of the switch to cause a RPS trip when required has not been identified. Therefore, for specified applications the identified concern does not create a substantial safety hazard nor could this condition contribute to exceeding a Technical Specification Safety Limit. Therefore, this is not a Reportable Condition under 10CFR21 for specified applications.

Based on the specified applications and BWR design practices, this issue is expected to have a low potential to produce a significant safety concern for unspecified applications. However, GENE does not have sufficient information to perform an evaluation for the unspecified applications, which resulted in issuance of the Part 21 Transfer of Information.

If you have any questions on this condition or the GENE evaluation, please call me at (910) 675-6608.

Sincerely,



Jason. S. Post, Manager  
Engineering Quality & Safety Evaluations

cc: S. D. Alexander (NRC-NRR/DIPM/IPSB) Mail Stop 6 F2  
M. B. Fields (NRC-NRR/DLPM/LPD4) Mail Stopm 7 E1  
C. V. Hodge (NRC-NRR/DIPM/IROB) Mail Stop 12 H2  
J. F. Klapproth (GENE)  
H. J. Neems (GENE)  
L. M. Quintana (GENE)  
T. Rumsey (GENE)  
Plants Listed in Attachment 1  
PRC File

**Attachment 1**  
**Plants Notified by GENE Transfer of Information in SC04-05**

<u>Affected</u>	<u>Utility</u>	<u>Plant</u>
	Carolina Power & Light Co.	Brunswick 1
	Carolina Power & Light Co.	Brunswick 2
	Constellation Nuclear	Nine Mile Point 1
	Constellation Nuclear.	Nine Mile Point 2
	Detroit Edison Co.	Fermi 2
	Dominion Generation	Millstone 1
	Energy Northwest	Columbia
X	Entergy Nuclear Northeast	FitzPatrick
	Entergy Nuclear Northeast	Pilgrim
	Entergy Operations, Inc.	Grand Gulf
X	Entergy Operations, Inc.	River Bend
	Entergy Nuclear Northeast	Vermont Yankee
	Exelon Generation Co.	CRIT Facility
X	Exelon Generation Co.	Clinton
	Exelon Generation Co.	Dresden 2
	Exelon Generation Co.	Dresden 3
	Exelon Generation Co.	LaSalle 1
	Exelon Generation Co.	LaSalle 2
X	Exelon Generation Co.	Limerick 1
X	Exelon Generation Co.	Limerick 2
X	Exelon Generation Co.	Oyster Creek
	Exelon Generation Co.	Peach Bottom 2
	Exelon Generation Co.	Peach Bottom 3
X	Exelon Generation Co.	Quad Cities 1
X	Exelon Generation Co.	Quad Cities 2
X	First Energy Nuclear Operating Co.	Perry 1
	Nebraska Public Power District	Cooper
X	Nuclear Management Co.	Duane Arnold
	Nuclear Management Co.	Monticello
	Pooled Equipment Inventory Co.	PIM
X	PPL Susquehanna LLC.	Susquehanna 1
X	PPL Susquehanna LLC	Susquehanna 2
X	Public Service Electric & Gas Co.	Hope Creek
	Southern Nuclear Operating Co.	Hatch 1
	Southern Nuclear Operating Co.	Hatch 2
X <sup>(*)</sup>	Tennessee Valley Authority	Browns Ferry 1
X	Tennessee Valley Authority	Browns Ferry 2
X	Tennessee Valley Authority	Browns Ferry 3

\* Plant is currently not operating

**Attachment 2**  
**Transfer of Information per §21.21(b)**

- (i) Name and address of the individual providing the information:  
J. S. Post, Manager, Engineering Quality & Safety Evaluations, GE Nuclear Energy, 3901 Castle Hayne Road, Wilmington, NC 28401.
- (ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity that contains a deviation or failure to comply:  
The basic component supplied is a Barksdale model TC9622-3-B pressure switch. GE Nuclear Energy (GENE) sold the safety-related pressure switch for specified and unspecified BWR applications. The plants for which GENE had insufficient information to complete the Part 21 evaluation are listed in Attachment 1.
- (iii) Identification of the firm constructing the facility or supplying the basic component that contains a deviation or failure to comply:  
IMO Industries, Barksdale Controls Division, 3211 Fruitland Avenue, P.O. Box 58843, Los Angeles, CA 90058-0843 currently manufacturers the model TC9622-3-B pressure switch. GENE dedicated the Barksdale TC9622-3-B pressure switch per the associated drawing part number. The dedicated Barksdale pressure switch is intended for safety-related applications in nuclear power plants.
- (iv) Nature of the defect or safety hazard that could be created by such a deviation or failure to comply:  
This deviation from technical requirements is failure of the adhesive that mounts the terminal strip to the internal surface of the housing. This issue is expected to have a low potential to produce a significant safety concern, however, GENE does not have sufficient information to determine if this could lead to a condition that causes a terminal screw to become loose, and for unspecified applications, GENE does not have sufficient information to determine if a loose terminal screw could lead to an unsafe condition.
- (v) The date on which the information of such a deviation or failure to comply was obtained:  
GENE made the determination of the existence of this condition on February 20, 2004.
- (vi) In the case of a basic component, which contains a deviation or failure to comply, the locations of all such components in use or being supplied:  
The plants, which purchased affected safety-related switches from GENE for unspecified applications are identified in Attachment 1.

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- (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 (note, these are actions specifically associated with the identified deviation or failure to comply):

Barksdale issued a return material authorization and performed an evaluation of the switches with the loose terminal strip. Barksdale issued a design change to replace the Loctite adhesive and accelerator with 3M Scotch-Weld DP-100 Epoxy.

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

Although it has not been determined that a loose terminal strip could lead to a loose terminal screw, it is good practice to secure the terminal strip. It is recommended that affected licensees inspect any identified Barksdale pressure switches that have been installed at the next convenient opportunity to ensure that the terminal strip adhesive has not failed and the terminal screws are tight. If a failed adhesive is found, please contact your GENE representative. If a loose terminal screw is found in a Barksdale pressure switch, it should be tightened and your GENE representative should be notified.