

Part 21 (PAR)

Event # 51944

Rep Org: NUCLEAR LOGISTICS INC		Notification Date / Time: 05/19/2016 19:17 (EDT)	
Supplier: NUCLEAR LOGISTICS INC		Event Date / Time: 05/18/2016 (CDT)	
Last Modification: 05/19/2016			
Region: 4		Docket #:	
City: FORT WORTH		Agreement State: Yes	
County: TARRANT		License #:	
State: TX			
NRC Notified by: TRACY BOLT		Notifications: GEOFFREY MILLER R4DO	
HQ Ops Officer: RICHARD SMITH		GEORGE HOPPER R2DO	
Emergency Class: NON EMERGENCY		PART 21/50.55 REACTORS EMAIL	
10 CFR Section:			
21.21(a)(2) INTERIM EVAL OF DEVIATION			

PART 21 INTERIM EVALUATION OF A DEVIATION - CONTACTOR FAILURE

The following was received via FAX:

On May 18, 2016, Nuclear Logistics INC. (NLI) determined that a contactor failure that occurred at the Shearon Harris plant had failed due to an auxiliary contact chatter present on the seal-in circuit for the coil voltage. The auxiliary contact chatter was caused by the loss of the shading coils. NLI will be submitting a full report on the issue to the NRC within 60 days.

The contactor that failed was a Size 4 Eaton Freedom Series with a special coil for degraded voltage condition.

Reference Number: P21-05192016

NLI reported that the following plants have these types of contactor's:

Region 2: Oconee, Turkey Point, Shearon Harris and North Anna

Region 4: Columbia and Waterford

IE19
NRR



5/19/2016

To: NRC Operations Center
Fax: (301) 816 - 5151

From: Tracy Bolt
Director of Quality Assurance

Ref. P21-05192016

Subject: Initial notification of a potential 10CFR Part 21 condition.

Pursuant to the rules of 10CFR 21.21 this initial notification is being submitted to the NRC to identify a potential reportable condition that is currently under evaluation.

An issue has previously been identified of a Freedom Series contactor that was making a considerable amount of noise. The unit was continuing to operate, however the source of the noise was cause for investigation. This issue was determined to be caused by the shading coils coming loose from the iron core within the contactor. This issue was originally retracted after testing performed in the provided configuration demonstrated that the safety function was not impacted (the coil continued to provide sufficient magnetic force to keep the main contacts closed). NLI has continued the investigation into the root cause and long term operability of the contactor.

After the investigation was underway, Harris reported a loss of operation with one of their contactors. NLI requested that the unit be returned for additional testing and evaluation. NLI was able to repeat the failure identified. The contactor failed to remain closed due to the aux contact chatter present on the seal-in circuit for the coil voltage. The auxiliary contact chatter was caused by the loss of the shading coils. The date of discovery is 5/18/2016. The report will be submitted within 60 days.

The parameters where the Harris loss of operation occurred:

- The Contactor is a Size 4 Eaton Freedom Series with a special coil for degraded voltage condition.
- The Shading coils after an unknown time of operation became loose and were no longer in the proper position on the contactor core. Without the shading coil in place, the contactor will produce a considerable amount of buzzing noise > 85db. The noise is from the armature impacting the iron core at 120 cycles per second.
- After the shading coils were no longer in place, the contactor after an unknown amount of time opened when the power through the auxiliary contact seal-in circuit was interrupted.

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- The contactor utilized one of the N/O aux contacts for seal in of the coil voltage when energized. This contact opened during operation, which in turn dropped out the coil voltage, which opened the circuit to the fan.

These components were first supplied in September 2002 to Duke Oconee with currently no reported issues identified. The units reported by FPL Turkey point were supplied in May and December 2011. They have been installed into other facilities including the DUKE Shearon Harris plant in December 2013. Other plants where the Size 4 or 5 contactors with special coils have been supplied are Columbia Generating Station, North Anna, and Waterford.

NLI plans to have the completed report submitted by July 15th, 2016

Sincerely,

A handwritten signature in black ink, appearing to read "Tracy Bolt", with a stylized, cursive script.

Tracy Bolt
Director of Quality Assurance