

Part 21 (PAR)

Event # 50539

Rep Org: WATERFORD STEAM ELECTRIC STATION	Notification Date / Time: 10/15/2014 18:10 (EDT)
Supplier: ALLEN BRADLEY	Event Date / Time: 08/12/2014 15:08 (CDT)
	Last Modification: 10/15/2014
Region: 4	Docket #:
City: KILLONA	Agreement State: Yes
County:	License #:
State: LA	
NRC Notified by: CARL RICH	Notifications: MARK HAIRE R4DO
HQ Ops Officer: DANIEL MILLS	PART 21 GROUP EMAIL
Emergency Class: NON EMERGENCY	
10 CFR Section:	
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	

PART 21 - DEFECTIVE ALLEN BRADLEY RELAY

"This is a non-emergency notification from Waterford 3 required under 10 CFR PART 21 concerning the deviation of a dedicated basic component from manufacturing specifications, which could have possibly caused a substantial safety hazard.

"On 04/23/2014, Control Room Emergency Filtration Unit A automatically started unexpectedly. It was determined that the equipment inadvertent actuation occurred due to an Allen Bradley Type 700RTC relay failure. The failure mode resulted in the associated equipment actuating as it would to perform its safety function, not adversely impacting steady state plant operations. The failed relay was replaced on 4/25/2014.

"Independent failure analysis performed by Southwest Research Institute (SwRI) on an Allen Bradley model 700RTC000020U1 relay that failed in service at Waterford 3 Nuclear Station (WF3) identified that the relay's L22 coil was electrically open. Detailed destructive analysis of the L22 coil revealed corrosion of the winding in multiple locations. Corrosion products removed from various locations near the failure site on the L22 coil contained significant concentrations of chlorine. The independent failure analysis concluded the in-plant failure observed at Waterford 3 was caused by corrosion near the start end of the relay's L22 coil winding. The source of the corrosive material that damaged the winding was not apparent; however, based on review of storage practices at Waterford 3, it is likely that it was introduced during manufacture of the coil. On 8/12/2014, Waterford 3 engineering determined this relay condition was a PART 21 deviation. The qualifying vendor (Qual Tech NP) has been contacted and they have provided the completed failure analysis to the manufacturer (Allen Bradley).

"Entergy concluded that for the application of this relay where a malfunction occurred, it did not result in a substantial safety hazard. However, on 10/10/2014, at approximately 1233 CDT, Entergy completed an evaluation concluding that had this relay type been installed, with the same deviation, in other safety related normally

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NRR

NRC FORM 361 (12-2000)		REACTOR PLANT EVENT NOTIFICATION WORKSHEET			U.S. NUCLEAR REGULATORY COMMISSION OPERATIONS CENTER	
NRC OPERATION TELEPHONE NUMBER: PRIMARY -- 301-816-5100 or 800-532-3469*, BACKUPS -- [1st] 301-951-0550 or 800-449-3694*, [2nd] 301-415-0550 and [3rd] 301-415-0553 *Licensees who maintain their own ETS are provided these telephone numbers.						
NOTIFICATION TIME 1710 CDT	FACILITY OR ORGANIZATION Waterford	UNIT 3	NAME OF CALLER Carl Rich		CALL BACK # 504-739-6496	
EVENT TIME & ZONE 1508 CDT	EVENT DATE 08/12/2014	POWER/MODE BEFORE 100% / MODE 1		POWER/MODE AFTER 100% / MODE 1		
EVENT CLASSIFICATIONS		1-Hr. Non-Emergency 10 CFR 50.72(b)(1)			<input type="checkbox"/> (v)(A) Safe S/D Capability	AINA
<input type="checkbox"/> GENERAL EMERGENCY	GEN/AAEC	<input type="checkbox"/> TS Deviation	ADEV		<input type="checkbox"/> (v)(B) RHR Capability	AINB
<input type="checkbox"/> SITE AREA EMERGENCY	SIT/AAEC	4-Hr. Non-Emergency 10 CFR 50.72(b)(2)			<input type="checkbox"/> (v)(C) Control of Rad Release	AINC
<input type="checkbox"/> ALERT	ALE/AAEC	<input type="checkbox"/> (i) TS Required S/D	ASHU		<input type="checkbox"/> (v)(D) Accident Mitigation	AIND
<input type="checkbox"/> UNUSUAL EVENT	UNU/AAEC	<input type="checkbox"/> (iv)(A) ECCS Discharge to RCS	ACCS		<input type="checkbox"/> (xi) Offsite Medical	AMED
<input type="checkbox"/> 50.72 NON-EMERGENCY	(see next columns)	<input type="checkbox"/> (iv)(B) RPS Actuation (scram)	ARPS		<input type="checkbox"/> (xii) Loss Comm/Asmt/Resp	ACOM
<input type="checkbox"/> PHYSICAL SECURITY (73.71)	DDDD	<input type="checkbox"/> (xi) Offsite Notification	APRE		60-Day Optional 10 CFR 50.73(a)(1)	
<input type="checkbox"/> MATERIAL/EXPOSURE	B???	8-Hr. Non-Emergency 10 CFR 50.72(b)(3)			<input type="checkbox"/> Invalid Specified System Actuation	AINV
<input type="checkbox"/> FITNESS FOR DUTY	HFIT	<input type="checkbox"/> (ii)(A) Degraded Condition	ADEG		Other Unspecified Requirement (Identify)	
<input checked="" type="checkbox"/> OTHER UNSPECIFIED REQMT.	(see last column)	<input type="checkbox"/> (ii)(B) Unanalyzed Condition	AUNA		<input checked="" type="checkbox"/> 10 CFR 21.21(d)(3)(i) Defect	NONR
<input type="checkbox"/> INFORMATION ONLY	NNF	<input type="checkbox"/> (iv)(A) Specified System Actuation	AESF		<input type="checkbox"/>	NONR
DESCRIPTION						
This is a <u>non-emergency</u> notification from Waterford 3 required under 10 CFR PART 21 concerning the deviation of a dedicated basic component from manufacturing specifications, which could have possibly caused a substantial safety hazard.						
On 04/23/2014, Control Room Emergency Filtration Unit A automatically started, unexpectedly. It was determined that the equipment inadvertent actuation occurred due to Allen Bradley type 700RTC relay failure. The failure mode resulted in the associated equipment to actuate as it would to perform its safety function, not adversely impacting steady state plant operations. The failed relay was replaced on 4/25/2014.						
Independent failure analysis performed by Southwest Research Institute (SwRI) on an Allen Bradley model 700RTC000020U1 relay that failed in service at Waterford 3 Nuclear Station (WF3) identified the relay's L22 coil was electrically open. Detailed destructive analysis of L22 coil revealed corrosion of the winding in multiple locations. Corrosion products removed from various locations near the failure site on L22 coil contained significant concentrations of chlorine. The independent failure analysis concluded the in-plant failure observed at Waterford 3 was caused by corrosion near the start end of the relay's L22 coil winding. The source of the corrosive material that damaged the winding was not apparent; however, based on review of storage practices at Waterford 3, it is likely that it was introduced during manufacture of the coil. On 8/12/2014, Waterford 3 engineering determined this relay condition was a PART 21 Deviation. The qualifying vendor (Qual Tech NP) has been contacted and they have provided the completed failure analysis to the manufacturer (Allen Bradley).						
Entergy concluded that for the application of this relay where a malfunction occurred, it did not result in a substantial safety hazard. However, on 10/10/2014, at approximately 12:33 CDT, Entergy completed an evaluation concluding that had this relay type been installed, with the same Deviation, in other safety related normally energized applications, it could possibly have resulted in a substantial safety hazard, and thus a PART 21 Defect. The Waterford 3 Site VP was informed 10/14/2014.						
[Note: This notification was made at 1810 EDT, received by officer Daniel Mills [Ref. WF3 CR-2014-2199].						
NOTIFICATIONS	YES	NO	WILL BE	ANYTHING UNUSUAL OR NOT UNDERSTOOD?	<input type="checkbox"/> YES (Explain above)	<input checked="" type="checkbox"/> NO
NRC RESIDENT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
STATE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DID ALL SYSTEMS FUNCTION AS REQUIRED?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO (Explain above)
LOCAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
OTHER GOV AGENCIES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	MODE OF OPERATION UNTIL CORRECTED: N/A	ESTIMATED RESTART DATE: N/A	ADDITIONAL INFO ON BACK
MEDIA/PRESS RELEASE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO