



444 South 16th Street Mall  
Omaha NE 68102-2247

December 20, 2002  
LIC-02-0134

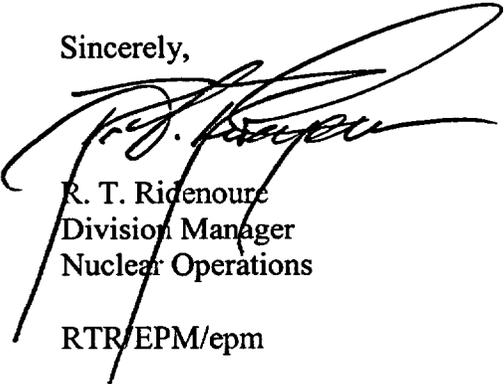
U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Reference: Docket No. 50-285

**Subject: Licensee Event Report 2002-003 Revision 0 for the Fort Calhoun Station**

Please find attached Licensee Event Report 2002-003, Revision 0, dated December 20, 2002. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(ii)(B). If you should have any questions, please contact me.

Sincerely,



R. T. Ridenoure  
Division Manager  
Nuclear Operations

RTR/EPM/epm

Attachment

c: E. W. Merschoff, NRC Regional Administrator, Region IV  
Alan Wang, NRC Project Manager  
J. G. Kramer, NRC Senior Resident Inspector  
INPO Records Center  
Winston and Strawn

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<b>NRC FORM 366</b> (7-2001)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>			<b>APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004</b> Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.							
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)					<b>2. DOCKET NUMBER</b> 05000285		<b>3. PAGE</b> 1 OF 4					
<b>1. FACILITY NAME</b> Fort Calhoun Nuclear Station Unit Number 1												
<b>4. TITLE</b> Inadequate Cable Separation Resulting in Noncompliance with 10 CFR 50 Appendix R												
<b>5. EVENT DATE</b>			<b>6. LER NUMBER</b>			<b>7. REPORT DATE</b>			<b>8. OTHER FACILITIES INVOLVED</b>			
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER		
11	1	2002	2002 - 003 - 0			12	20	2002	FACILITY NAME	DOCKET NUMBER		
<b>9. OPERATING MODE</b>			<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>									
1			<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(ii)			<input checked="" type="checkbox"/> X	<input type="checkbox"/> 50.73(a)(2)(ii)(B)		<input type="checkbox"/> 50.73(a)(2)(ix)(A)		
<b>10. POWER LEVEL</b>			<input type="checkbox"/> 20.2201(d)			<input type="checkbox"/> 20.2203(a)(4)			<input type="checkbox"/> 50.73(a)(2)(iii)		<input type="checkbox"/> 50.73(a)(2)(x)	
100			<input type="checkbox"/> 20.2203(a)(1)			<input type="checkbox"/> 50.36(c)(1)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(iv)(A)		<input type="checkbox"/> 73.71(a)(4)	
			<input type="checkbox"/> 20.2203(a)(2)(i)			<input type="checkbox"/> 50.36(c)(1)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(A)		<input type="checkbox"/> 73.71(a)(5)	
			<input type="checkbox"/> 20.2203(a)(2)(ii)			<input type="checkbox"/> 50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(v)(B)		<input type="checkbox"/> OTHER	
			<input type="checkbox"/> 20.2203(a)(2)(iii)			<input type="checkbox"/> 50.46(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(v)(C)		Specify in Abstract below or in NRC Form 366A	
			<input type="checkbox"/> 20.2203(a)(2)(iv)			<input type="checkbox"/> 50.73(a)(2)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(D)			
			<input type="checkbox"/> 20.2203(a)(2)(v)			<input type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(vii)			
			<input type="checkbox"/> 20.2203(a)(2)(vi)			<input type="checkbox"/> 50.73(a)(2)(i)(C)			<input type="checkbox"/> 50.73(a)(2)(viii)(A)			
			<input type="checkbox"/> 20.2203(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(viii)(B)			

**12. LICENSEE CONTACT FOR THIS LER**

<b>NAME</b> David J. Buell, Mechanical Design Engineer	<b>TELEPHONE NUMBER (Include Area Code)</b> 402-533-7316
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

**14. SUPPLEMENTAL REPORT EXPECTED**

<b>YES (If yes, complete EXPECTED SUBMISSION DATE).</b>	<input checked="" type="checkbox"/> X	<input type="checkbox"/> NO			
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**15. EXPECTED SUBMISSION DATE**

MONTH	DAY	YEAR

**16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)**

During a self assessment Fort Calhoun Station completed a review of cable separation for components in Fire Area 30 (Containment), an issue was identified with the configuration of the pressurizer level transmitter signal cables. After an exhaustive review of documentation, a containment entry was made to confirm actual cable configuration. During the containment entry, pressurizer level transmitter cable separation was determined not to comply with Appendix R separation requirements.

The root cause of this condition is a failure to recognize and fully apply the separation requirements for cables in conduits as required by 10 CFR 50 Appendix R.

The problem of cable separation will be corrected by a modification in accordance with Appendix R as directed by the corrective action system.

**LICENSEE EVENT REPORT (LER)**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE		
Fort Calhoun Nuclear Station Unit Number 1	05000285	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2	OF	4
		2002	- 003	- 0			

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

**BACKGROUND**

There are three separate transmitters for pressurizer level (LT-101X, LT-101Y and LT-106) at Fort Calhoun Station (FCS). Two of the transmitters, LT-101X (X channel pressurizer level transmitter) and LT-101Y (Y channel pressurizer level transmitter), are associated with level control functions for the pressurizer and automatically adjust reactor coolant system letdown and charging flow to maintain pressurizer level at a programmed setpoint. LT-106 (pressurizer wide range level transmitter) is an alternate means of pressurizer level indication and is typically calibrated for use during cold shutdown conditions.

Cables in conduits can be damaged by fire, and are not exempt from the 10 CFR 50 Appendix R separation requirements. When cables are run in rigid steel conduit they are still considered susceptible to damage from the fire, but, they do not contribute as a combustible load. Cables in rigid steel conduit meet the definition of "no intervening combustibles" as used in Appendix R.

FCS was constructed prior to the issuance of 10 CFR 50 Appendix R. The station has a fire protection program to maintain compliance with Appendix R.

**EVENT DESCRIPTION**

A fire protection program safety evaluation report (SER) review was made as part of a fire protection self assessment for 2001. This review was focused on ensuring compliance with the fire protection license condition. The review identified a number of issues that required additional review and/or clarification in program documentation. During completion of the review of cable separation for components in Fire Area 30 (Containment) an issue was identified with the configuration of the pressurizer level transmitter signal cables.

After exhaustive review of documentation, a containment entry was performed to confirm actual cable configuration. During the containment entry, pressurizer level transmitter cable separation was determined not to comply with Appendix R separation requirements. At about 1704 Central Standard Time (CST) on November 1, 2002, it was determined that one of the design parameters in the safe shutdown analysis was not being maintained and that the condition was reportable. An eight (8) hour non-emergency report was made to the NRC Operations Center at 1726 CST on November 1, 2002, pursuant to 10 CFR 50.72(B)(3)(ii)(B). This report is being made pursuant to 10 CFR 50.73(a)(2)(ii)(B).

**LICENSEE EVENT REPORT (LER)**

1. FACILITY NAME (1)	2. DOCKET	6. LER NUMBER			3. PAGE		
Fort Calhoun Nuclear Station Unit Number 1	05000285	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3	OF	4
		2002	- 003	- 0			

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

**SAFETY SIGNIFICANCE**

LT-101X and LT-101Y are used to provide pressurizer level indication to operators during normal and off-normal plant conditions. LT-106 is an alternate means of pressurizer level indication. However, LT-106 is typically calibrated for use during cold shutdown conditions and indicates differently from the 101 loops. LT-101X and LT-101Y are associated with level control instrumentation for pressurizer level which automatically adjusts RCS letdown and charging flow in order to maintain RCS inventory at a programmed level. Pressurizer level indications are used in Emergency Operating Procedures (EOPs) for verifying the RCS inventory control safety function and are used as part of safety injection stop and throttle criteria. Pressurizer level provides no safety related function, and is not an input to the plant protection system.

Signal cables for redundant pressurizer level transmitters (LT-101X, LT-101Y and LT-106) are not separated in accordance with 10 CFR 50 Appendix R and the Safety Evaluation Report (SER) granted to FCS for that area and are required to be analyzed as failing from a single fire in containment. FCS is required to maintain separation of cables and equipment of redundant trains important to safe shutdown by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. The subject cables and transmitters are within 2 feet at the described location. However, an alternate means of indication for RCS inventory is available to the plant operators (Reactor Vessel Level Monitoring System (RVLMS)), if LT-101X, LT-101Y and LT-106 are lost to a single fire in containment. The use of these systems in place of LT-101X, LT-101Y or LT-106 is proceduralized in plant procedures. Therefore, this event has little, if any, impact on the health and safety of the public.

**CONCLUSION**

The root cause of this condition is a failure to recognize and fully apply the separation requirements for cables in conduits as required by 10 CFR 50 Appendix R. The current cable configuration was part of the initial construction of the plant. The problem had been identified in 1984 and a modification package was prepared to correct the problem. The cables for transmitters LT-101X and LT-101Y in the open cable tray were rerouted, by exchanging cables as described in the modification, but the cable routing (in conduit) for LT-101Y near the transmitter racks remain unchanged following the completion of the modification. The modification did not eliminate the cable separation issue for cable 3473A (LT-101Y) as it still passed within 2 feet of the redundant transmitters.

The modification process in place at that time did not provide for an independent review of a plant configuration change affecting fire protection issues nor for compliance with 10 CFR Appendix R. In addition, the modification process in place at that time did not provide a method for the design engineer to perform an organized and documented review of all impacts and interactions associated with the plant modification. Significant enhancements to the configuration control and engineering change processes at FCS have been implemented since 1985. These enhancements are deemed adequate to address the problems identified.

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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

**CORRECTIVE ACTIONS**

The problem of cable separation will be corrected by a modification to restore Appendix R requirements as directed by the corrective action system. Other corrective actions related to this issue are being completed in accordance with the FCS corrective action program.

**SAFETY SYSTEM FUNCTIONAL FAILURE**

This event did not result in a safety system functional failure in accordance with NEI 99-02.

**PREVIOUS SIMILAR EVENTS**

There have not been any previous similar LERs where a failure to install a plant modification resulted in a noncompliance with Appendix R.