Florida Power
CORPORATION

INTEROFFICE CORRESPONDENCE

Design Engineering - Electrical (OFFICE) | NA1E (MAC) | 240-3848 (TELEPHONE)

Subject: Final Reportability Determination for Precursor Card PC99-2868

To: Shift Technical Advisor

DATE: October 4, 1999
DE99-0609

The purpose of this correspondence is to inform the Shift Technical Advisor of the final reportability determination for Precursor Card PC99-2868.

PC99-2868 was initiated on August 31, 1999, to document identified damage to a new power cable being installed in a non-safety-related application under Modification Approval Record MAR 98-04-06-01 (Instrument Air Compressor Upgrade). One conductor of a three conductor 2/0 (FIMIS #1270009, Reel #1) cable was found to be damaged when the outer jacket was removed for termination. This was the first issuance of the Brand-Rex cable (4 Reels containing approximately 4,000 feet total), which had been procured as safety grade. A total of six samples of the pulled cable that was routed from RXMCC 3B to MTSW-5 was inspected with Construction electricians. The cable appeared to have been damaged during fabrication rather than by cable pulling techniques. A second sample was also taken from the cable reel and inspected for damage. Damaged insulation was also found on the cable reel.

On September 9, 1999, PC-99-2868 was upgraded to potentially reportable status. Since the subject cable had never been permanently installed or used in the plant, the reporting requirements of 10CFR50.72 and 10CFR50.73 were not applicable. However, the identified condition did warrant an evaluation for reportability pursuant to 10CFR21. In accordance with 10CFR21, 60 days is allowed to perform a reportabilty evaluation. The reportability determination was assigned to the Manager, Procurement Quality & Inspections with a due date of October 30, 1999. A Request for Corrective Action RCA #497 was forwarded to the BICC Brand Rex Company with a requested reply date of October 9, 1999.

> 10CFR21.21 states, in part, that entities subject to 10CFR21 shall adopt appropriate procedures to: "...evaluate deviations and failure to comply to identify defects and failures to comply associated with substantial safety hazards.....in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected."

On September 27, 1999, BICC General provided a written response to RCA #497. The vendor determined that the damage was created during the cabling process while combining the three conductors just prior to closing. The one damaged conductor fell off the pulley due to loss of tension, causing the insulation to be scraped. This problem was unique to this one product alone, which was designed specifically for FPC.

The vendor determined that any cable previously installed with the condition as noted on the RCA should function with its intended purpose with no failure. This was based on their conclusion that because only one of the three conductors had insulation damage, there is nothing for that conductor to

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short against. All conductors are protected by an outer jacket. Additionally, the cable had been tested by the vendor for Dielectric Strength between all conductors, Insulation Resistance of each conductor against all other conductors, and the Conductor Resistance test of each conductor. All tests were performed in accordance with Specification SP-5147, Revision 2, with no failures.

FPC does not agree with the vendor's conclusion that this defect could not create a substantial safety hazard. A substantial hazard exists if there is a loss of safety function to the extent that there is a major reduction in the degree of protection provided to ensure public health and safety. This 3/C 2/0 cable, having been procured as safety-related, EQ qualified, could have been used in a safety-related application in a "harsh" environment such as in the Reactor Building or in the Intermediate Building. In a harsh environment created under accident conditions, the damaged cable insulation could allow the cable conductor to "leak" through moisture to nearby grounds, thus tripping and rendering inoperable the equipment downstream of the fault. Normally, conductor insulation is the primary barrier to leaks in LOCA tests when jacket material sometimes cracks. Also, if the cable was installed in a metal cabinet so that the cable outer jacket had been stripped near the defect to allow terminating the cable, the damaged cable insulation on the one conductor could potentially allow contact with the cabinet or a nearby ground during a seismic event and cause the circuit to malfunction. In either case, safety-related loads required to mitigate the effects of an accident or to perform a safety-related function could be impacted to the extent that a substantial safety hazard exists.

Based on the above information, FPC has determined that the identified condition does represent a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected.

If you have any questions, please advise.

Magdy M. Bishara 10-4-99

Magdy M. Bishara
Manager, Design Engineering – Electrical and I&C

Concurrence: Larry R. McDougal 10/5/99
Larry R. McDougal
Manager, Nuclear Regulatory Compliance

MMB/

cc: George Oberndorfer
Sid Powell
Dennis W. Herrin
C. J. Kish
MAR file ((MAR 98-04-06-01)
File

BICCGeneral

September 27, 1999

Richard W. Metz
Quality Assurance Engineer

Florida Power Corp.
Crystal River Unit #3
Nuclear Operations
15760 West Powerling St
Crystal River, FL 34428

Attention: Debbie Borland

Subject: Request for Corrective Action No. 497

Reference: Florida Power P.O. F830409D (BICCGeneral #00373)

Attached is the completed RCA. In addition to the cause and corrective action taken, it has been determined that any cable previously installed with the condition as noted on the RCA should function with its intended purpose with no failure. This determination was made based upon the fact that because only one of the three legs had insulation damage, there is nothing for that conductor to short against.

All cables had been tested for Dielectric Strength between all conductors, Insulation Resistance of each conductor against all other conductors, and the Conductor Resistance test of each conductor. All tests were performed in accordance with specification SP-5147 Rev. 2 with no failures.

Needless to say, if this condition is noted on any cable prior to installation, the cable in question should not be used. In this instance, the BICCGeneral sales office in Willimantic, CT should be notified to obtain authorization for return of the cable

Sincerely,

Richard W. Metz
Quality Assurance Engineer

Lou Gaudreau
Product Engineer

cc: N. Kitchen
S. Sandberg

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Florida Power

REQUEST FOR CORRECTIVE ACTION

PART I

RCA NUMBER	REQUESTED REPLY DATE	P.O. -CONTRACT
497	10/9/1999	PO F830409D

VENDOR: BICC Brand Rex Company | ADDRESS: Willimantic, CT

5. DESCRIPTION OF DEFICIENCY

BICC Power Cable, #1 08582, 1KV, 3/C #2/0, Class B, 90C, XLPE Insulated, Black Jacket, FPC item BK-14P (FPC FIMIS #1270009, ref: Precursor Card 99-2868) was found to be damaged when the outer jacket was removed for terminations during FPC construction project MAR 98-04-06-01. The Quality Material Problem Report (QMPR) is attached with the details. Based on this finding, all cable (4 reels) received under PO FS30409D are suspect

6. REQUIREMENT

Purchase order technical and quality requirements.

7. ORIGINATOR	DATE	8. MANAGER, PROCUREMENT QUALITY	DATE
Deborah K. Borland	9.9.1999		9/9/99

PART II

CORRECTIVE ACTION REPLY

9. CAUSE AND EXTENT OF PROBLEM

Damage was created during the cabling process while combining the three coductors just prior to closing. The 1 damagad component fell off the pulley due to loss of tension, causing the insulation to be scraped. This problem was unique to this one product alone, which was designed specifically for Florida Power Corp. Since this order was produced, the cabler in question has been removed from service. Because this was isolated to this one product on this one piece of equipment, it is our opinion that this is not a reportable deficiency under 10CFR Part 21.

10. CORRECTION ACTION TO PREVENT RECURRENCE

The cabling unit replacing the one taken out of service eliminates the pulleys, as it now is a straight line process, thereby eliminating any possibility of any recurrance of this deficiency. In addition, an additional electrical test is being added to the manufacturing process after cabling (Prior to jacketing) which would locate this type deficiency.

11. DATE CORRECTIVE ACTION WILL BE COMPLETED	12. RESPONSIBLE MANAGER	TITLE	DATE
September 30, 1999		Manager, Quality Assurance	

PART III

REVIEW OF CORRECTIVE ACTION

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14. PROCUREMENT QUALITY ACCEPTANCE & CLOSEOUT DATE

normal certified vendor rule

(no prior problems – April '97 – "group"-industry looked at vendor audit – FPC – rules)

NUPIC

("Nuclear procurement issues committee")