

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (HNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)
Browns Ferry Nuclear Plant (BFN) Unit 3

DOCKET NUMBER (2)
05000296

PAGE (3)
1 OF 5

TITLE (4) A Deficiency Regarding Raychem Tubing Used For Environmental Qualification Applications

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	31	94	94	002	00	02	07	95	N/A	
									N/A	

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)					
POWER LEVEL (10)	000	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)					
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER					
		20.405(a)(1)(iii)	50.73(a)(2)(i)(B)	50.73(a)(2)(viii)(A)	Voluntary Report					
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)						
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)						

LICENSEE CONTACT FOR THIS LER (12)

NAME
Clare S. Hsieh, Compliance Licensing Engineer

TELEPHONE NUMBER (Include Area Code)
(205) 729-2635

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
B	BJ	TBG	R098	N					

SUPPLEMENTAL REPORT EXPECTED (14)

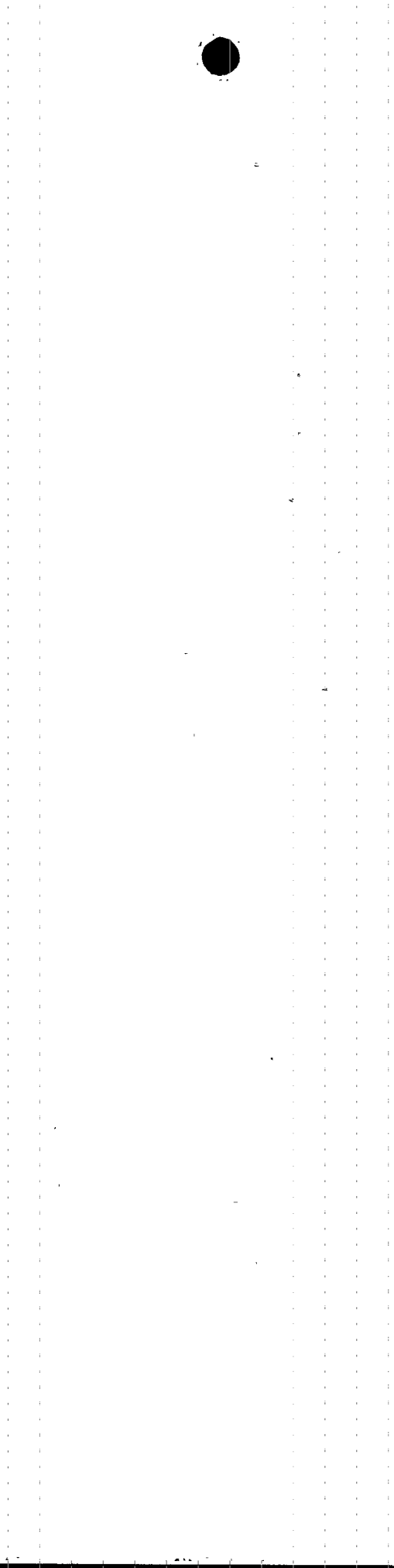
YES
(If yes, complete EXPECTED SUBMISSION DATE).

NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)
A deficiency regarding Raychem material was discovered on October 31, 1994, during the usage of the Raychem tubing for Environmental Qualification (EQ) applications. The Raychem tubing, type WCSF-070-N (Lot #N15057), used to insulate the splice connection of Conax ECSA conductors to their field cable conductors, could not be installed in a manner meeting the installation acceptance criteria. No immediate safety hazard exists since the equipment affected by the Raychem tubing is not required with Units 1 and 3 defueled and its failure does not impact the operating Unit 2. TVA shipped the Lot #N15057 tubing to the manufacturer for evaluation. The Unit 2 EQ applications are not affected by this problem since the tubing has not been used in any required Unit 2 EQ splices. TVA is evaluating the Unit 3 work issues to determine if the referenced Raychem material, Lot number, and contract were used on EQ components. The above condition is not reportable per 10 CFR 50.72, 50.73, or 10 CFR Part 21. However, TVA is submitting a voluntary report on this deficiency because other utilities may also have this particular type of tubing.



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

I. PLANT CONDITIONS

Unit 2 was in cold shutdown as part of the Unit 2 Cycle 7 refueling outage. Units 1 and 3 were defueled. Unit 1 was in lay-up status, and recovery activities were in progress on Unit 3.

II. DESCRIPTION OF EVENT

A. Event:

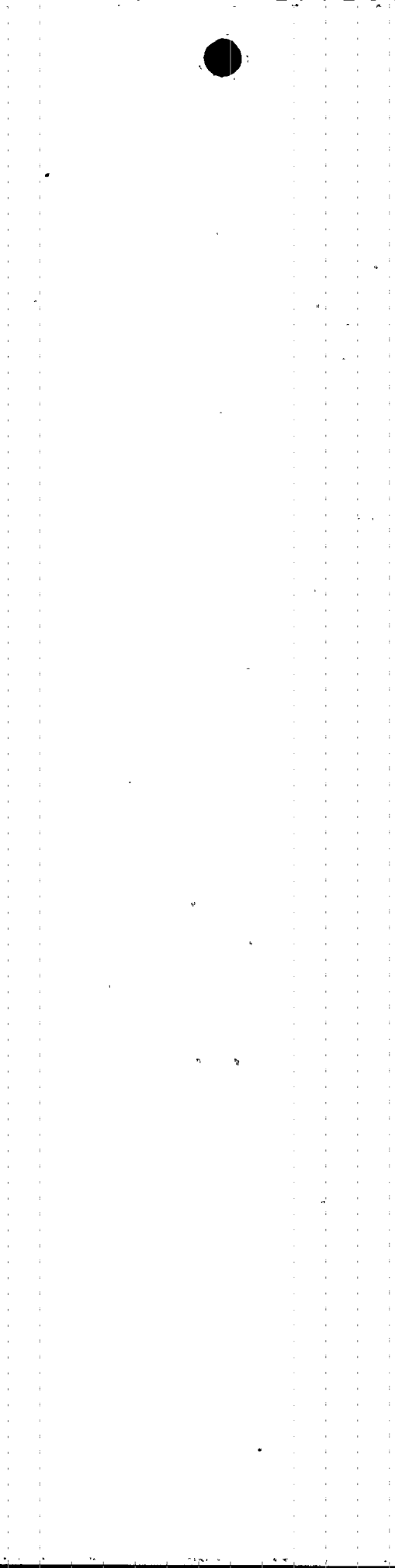
This voluntary report describes a deficiency regarding Raychem material that was identified during the performance of the Unit 3 recovery activities. The Raychem tubing [TBG], type WCSF-070-N (Lot #N15057), used to insulate the splice connection of Conax ECSA conductors to their field cable conductors, could not be installed in a manner meeting the installation acceptance criteria.

On October 31, 1994, TVA discovered that the tubing could not be shrunk (i.e., recovered) down enough in order to provide the required indicators signifying a proper seal on the Kapton insulated ECSA pigtail. The pigtail, which measured at 0.067 inches (rounded to 0.07 inches per vendor instructions), is near the lower limit of the usage range (0.07 - 0.14 inches) of the Raychem WCSF-070-N tubing.

On November 1, 1994, TVA sent samples of the Lot #N15057 tubing to the manufacturer for evaluation. On November 4, 1994, Raychem indicated in a written response to TVA that the WCSF-070-N tubing from Lot #N15057 is only acceptable for those installed single conductor in-line splices where the wire diameter is greater than 0.081 inches but not larger than 0.14 inches.

Although the component involves the tubing used in Environmental Qualification (EQ) applications such as splices or terminations for Units 1 and 3, no immediate safety hazard exists. The equipment affected by the Raychem tubing is not required with Units 1 and 3 defueled and its failure does not impact the operating Unit 2. Additionally, the Unit 2 EQ applications are not affected by this problem since the tubing from Lot #N15057 has not been used in any required Unit 2 EQ splices. Therefore, this condition is not reportable per 10 CFR 50.72 or 50.73.

The above condition is also not reportable per 10 CFR Part 21. The manufacturer requirements are part of the installation and inspection criteria. Thus, this deficiency would have been detected, and the material rejected, during TVA visual



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inspections, as part of the Unit 3 recovery effort. Nevertheless, TVA is submitting a voluntary report because other utilities may also have this particular type of tubing.

B. Inoperable Structures, Components, or Systems that Contributed to the Event:

None.

C. Dates and Approximate Times of Major Occurrences:

The Raychem material was originally received in 1992. The above deficiency was discovered on October 31, 1994 during the usage of the Raychem tubing for EQ applications. On November 1, 1994, samples of the Lot #N15057 tubing were sent to Raychem for evaluation.

D. Other Systems or Secondary Functions Affected:

None.

E. Method of Discovery:

As part of the Unit 3 recovery activities, the Raychem tubing was used to insulate the splice connection of cables in EQ applications. It was during the insulation of the splice connection of Conax ECSA conductors to the conductors of their respective field cables that the Raychem tubing was found not to be acceptable.

F. Operator Actions:

None.

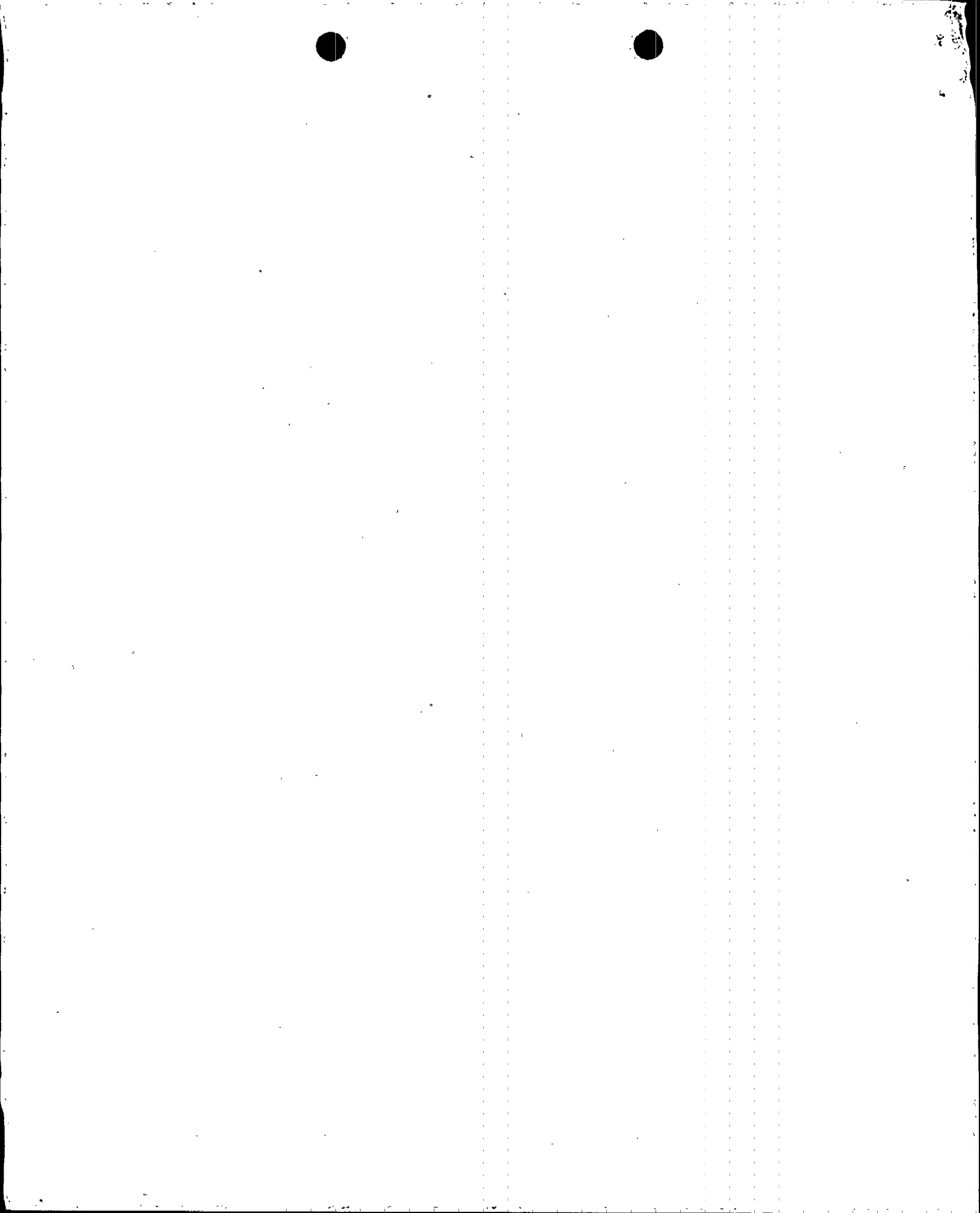
G. Safety System Responses:

None.

III. CAUSE OF THE EVENT

A. Immediate Cause:

The condition occurred when Raychem tubing could not be shrunk down enough in order to provide a proper seal on the Kapton insulated ECSA pigtail.



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B. Root Cause:

TVA has not been able to determine the root cause of this condition. TVA suspects that it must be rooted in the manufacturing process since other lots do not exhibit similar problem.

IV. ANALYSIS OF THE EVENT .

The Raychem splice was for Unit 3 work in progress for the design package on the analog trip units for Essential Core Cooling System (ECCS)/Reactor Protection System instrumentation. The splice was for a division II cable at the conduit seal for a level transmitter. The transmitter provides the reactor vessel level for the division II ECCS high vessel level trip to the High Pressure Coolant Injection turbine. The potential failure of the splice (since it was not shrunk down) was lack of an adequate moisture barrier seal.

Although the high humidity from a high energy line break could possibly force moisture into the conductor, this deficiency does not provide an immediate safety concern as Unit 3 is in a defueled mode. Additionally, the condition is discernable under inspection criteria required for each splice installation.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Actions:

TVA contacted the Raychem technical representative and sent samples of the Lot #N15057 tubing to Raychem for evaluation.

B. Corrective Actions to Prevent Recurrence:

TVA has completed an inventory of the affected material in the power stores, and the Lot #N15057 tubing found were returned to RayChem. TVA is evaluating Unit 3 work issues to determine if the referenced Raychem material, Lot number, and contract were used on EQ components. Additionally, TVA is reviewing material requisitions for the affected material and Lot number that has been issued from power stores for use but has not been installed and is also reviewing the completed work for EQ applications.



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VI. ADDITIONAL INFORMATION

A. Failed Components:

Raychem tubing (Type WCSF-070-N, Lot #N15057) constructed and supplied by the Raychem Corporation.

B. Previous LERs on Similar Events:

None.

VII. Commitments

There are no commitments in this report. The actions described in Section V.B of this report are actions being taken to determine the location of other similar type material.

Energy Industry Identification System (EIIS) system and component codes are identified in the text with brackets (e.g., [XX]).

