TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

REPORT NUMBER: C019101-SQN

REPORT TYPE: Sequoyah Element - Final Report

REVISION NUMBER: 2

TITLE: Electrical Equipment

REASON FOR REVISION:

Revision 1 - Incorporate TAS and SRP Comments
Revision 2 - Incorporate TAS and SRP Comments and Finalize Report.

PREPARATION

PREPARED BY:

James E. Blackburn for H.W. Loftis — SIGNATURE — 10/10/86 DATE

REVIEWS

PEER:

Donald E. Nelson — SIGNATURE — 10/15/86 DATE

TAS:

REM/KBH D.W. Stewart — SIGNATURE — 10/27/86 DATE

CONCURRENCES

SIGNATURE	DATE		SIGNATURE*	DATE
		CEG-H:	Jack T. Howard	10/15/86
		SRP:	James R. Russell	10-30-86

APPROVED BY:

ECSP MANAGER	DATE	MANAGER OF NUCLEAR POWER CONCURRENCE (FINAL REPORT ONLY)	DATE
M.U. Ruloff	10-31-86	N/A	

*SRP Secretary's signature denotes SRP concurrences are in files.

1305T

8611120084 861105
PDR ADOCK 05000259
P PDR

I. Introduction

Employee Concern IN-85-913-001 was determined to be generically applicable to Sequoyah Nuclear Plant (SQN) resulting from the evaluation performed by the Watts Bar Nuclear Plant (WBN) Employee Concerns Task Group (ECTG) as described in the element report: Junction boxes (CO19101) within the Construction category.

No related site-specific concerns were identified.

II. Summary of Perceived Problems

Galvanized steel junction boxes were thought to be unacceptable since upper-tier procedures did not specifically allow their use. These galvanized junction boxes could be found throughout the plant.

III. Methodology

a. Reviewed Quality Technology Company (QTC) expurgated files to determine whether additional relevant information was available.

b. WBN ECTG Element Report CO19101, "Junction Boxes" was reviewed to determine the procedure deficiencies at WBN.

c. A cognizant Modification and Addition Engineering Section individual was contacted to determine whether clarification was required in regard to material requirements for junction box construction.

d. Modification and Addition Instruction (M&AI)-6, "Installation of Conduit and Junction Boxes" Revision 6, was reviewed to determine whether clarification was required pertaining to a definition of corrosive resistant material.

IV. Summary of Findings

a. Review of QTC expurgated files revealed no additional information.

b. Review of WBN ECTG Element Report CO19101 revealed that site implementing procedure WBN-QCP-3.03, revision 18, did not specifically list galvanized steel with other materials as an acceptable material for junction boxes; therefore, interpreted by the concerned individual (CI) as an intent to exclude galvanized steel for use. The WBN site procedure is being revised to specifically list galvanized steel as an acceptable material for junction boxes as allowed by the National Electric Code, Article 370-20 and General Construction Specification G-40, in order to clarify the acceptability of galvanized steel. |R2 |R2

IV. Summary of Findings (Continued)

c. The Modification and Addition Engineer interviewed indicated junction boxes were either specified and procured by Division of Nuclear Engineering (DNE) with mark number assignments, or fabricated onsite utilizing standard drawing SD-E13.6.3-1, revision 5, dated August 20, 1984. Note Nos. 2 and 15 specify the material type as sheet steel and corrosive protection is accomplished by painting. This corrosion protection method is consistent with the requirements of the National Electric Code. Additionally, no problems or confusion had been identified for the material requirements related to junction box construction and substitutions had not been made.

d. M&AI-6, "Installation of Conduit and Junction Boxes," revision 6, revealed that materials used in the installation of electrical conduit systems and conduit boxes shall meet the requirements of an approved recognized standard. No specific material requirements were extracted or given as examples to introduce error or confusion related to the material requirements for junction box construction.

Conclusion

Site implementing procedures M&AI-6, revision 6, is adequate as written and is consistent with the National Electric Code, Article 370-20 and GCS G-40 with regard to material requirements of junction box construction.

Since galvanized junction boxes are constructed of a reactive metal similar to aluminum and react with borated water to form hydrogen, the design basis calculations for hydrogen build-up inside containment should include these and other similar items in the inventory process. The control of such reactive metals within the confines of the containment is discussed in WBN-ECTG Element Report CO19203-SQN entitled, "Conduit and Cable Tray" within the Construction category and provides the methods which will ensure that these materials are included in the design basis calculation for hydrogen build-up and that future updates to the calculation package will include these and other similar materials. |R2

V. Root Cause

None

VI. Corrective Actions

None

VII. Generic Application

Site implementing procedures related to junction box installation at BLN and BFN should be reviewed for clarity with regard to the material requirements of junction box construction-consistent with WBN ECTG Element Report CO19101.

VIII. Attachments

Attachment A	Listing of concerns indicating Safety Relationship and Generic Applicability	R2

C019101-SQN-R2

ATTACHMENT - A

IN -85-913-001 T50092	CO	19100 N WBN	Y Y Y Y REPORT	I-85-524-WBN	NS	ELECTRICAL JUNCTION BOXES ARE NOT PER G-40 AND ELECTRICAL STANDARD DRAWINGS, IN THAT THEY ARE MANUFACTURED OF GALVANIZED STEEL INSTEAD OF SHEET STEEL WITH PAINT ON BOTH SIDES. THESE JUNCTION BOXES MAY BE FOUND THROUGHOUT THE PLANT, ESPECIALLY IN THE ADGB (AUXILLIARY DIESEL GENERATOR BUILDING C/I HAD NO FURTHER INFORMATION. NO FOLLOW UP REQUIRED.