

TENNESSEE VALLEY AUTHORITY
EMPLOYEE CONCERN PROGRAM
ECP INVESTIGATION REPORT

Concern No: ECP-86-BF-564-001 (RTI - 86-A-0198)

Subject: Qualifications of Employees to Perform Verification of Electrical Equipment

Dates of Investigation: July 7 - July 16, 1986

Investigator:

Stanley W. Solley
Stanley W. Solley

8/6/86
Date

Submitted:

Thomas F. Newton
T. F. Newton

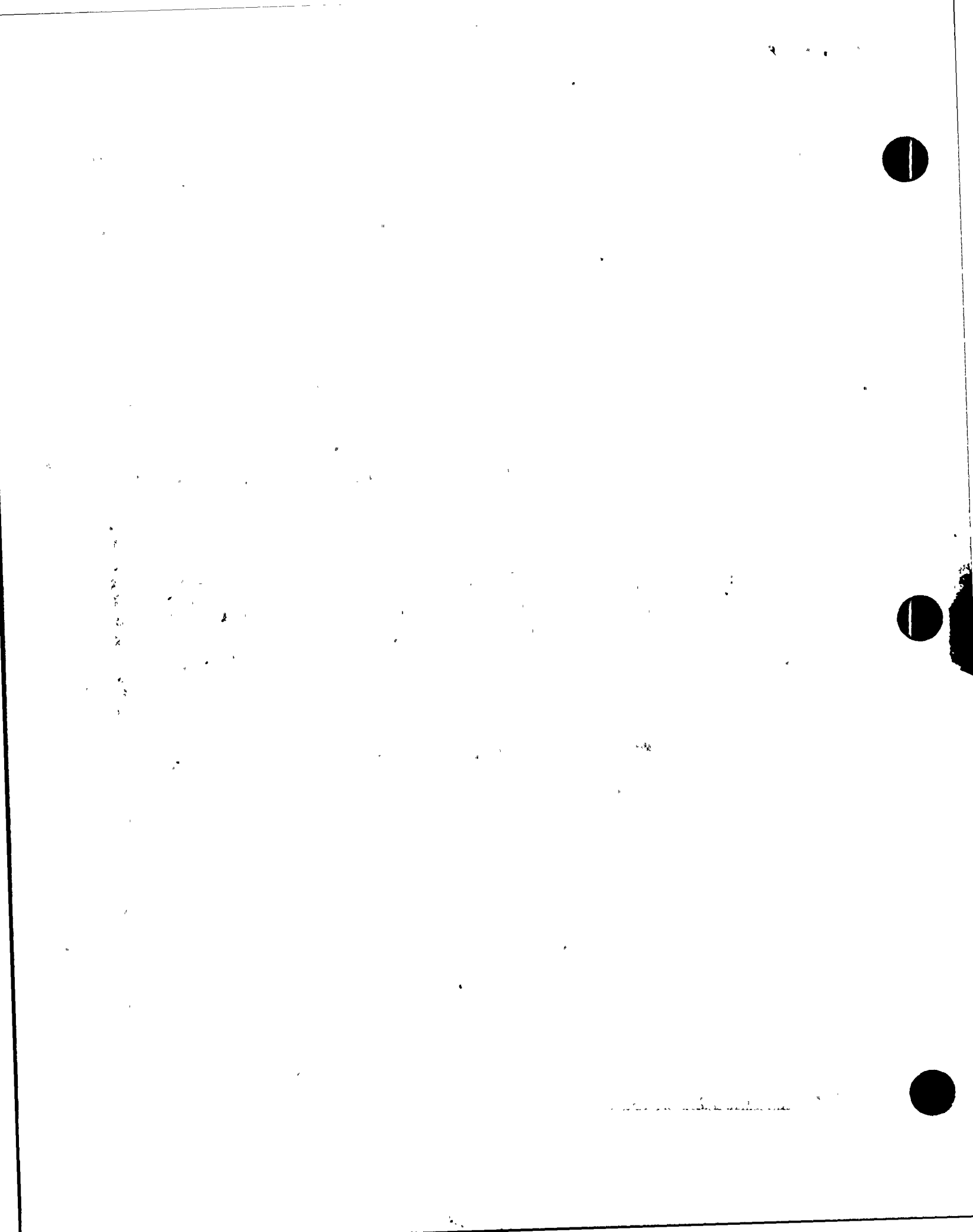
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Approved:

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8/12/86
Date

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I. BACKGROUND

The Browns Ferry Nuclear Plant (BFN) Employee Concern Site Representative received an employee concern as follows:

"Qualifications of engineering cooperative students to perform first and second person verification of electrical equipment as required by Browns Ferry Nuclear Plant Special Electrical Maintenance Instruction (SEMI)-55".

This concern was determined to be nuclear safety-related and was categorized as a management/personnel concern.

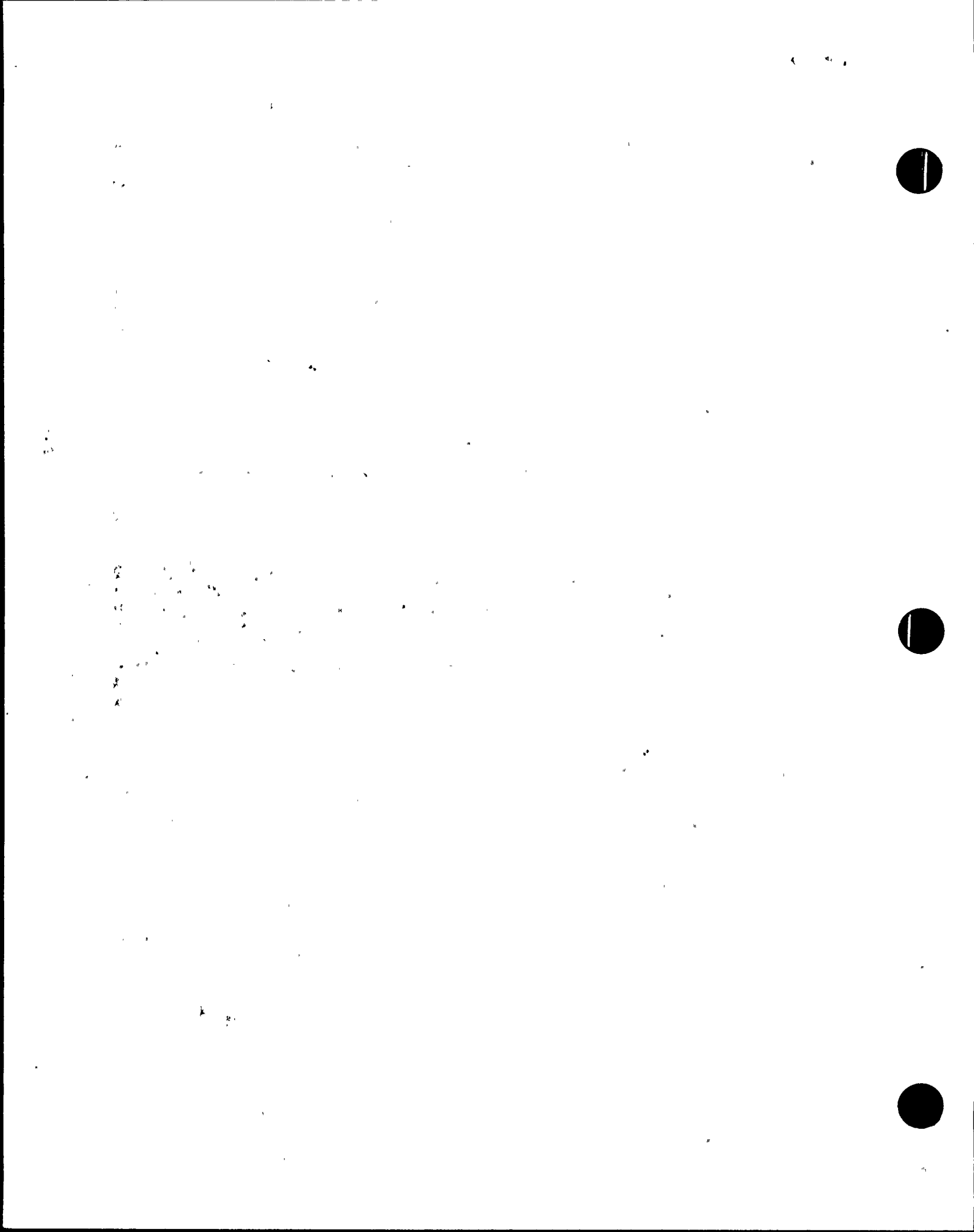
II. SCOPE

The concern was deemed to affect only BFN and the investigation included procedure and document review, personnel interviews, and data obtained by modification personnel.

III. FINDINGS

- A. The subject work was controlled by Special Electrical Maintenance Instruction SEMI-55, "Electrical Equipment Field Verification". This procedure provides instructions for the field verification necessary to provide information to Office of Engineering (OE) in response to OE calculation, "Electrical Equipment required to support unit 2 restart". Under Section 3.0, "Prerequisites", SEMI-55 states that "Individuals performing verification to this instruction must have the background and demonstrated capability to perform the type of verifications required and who have additional training and certification to this instruction." The procedure also specifies under Section 12, "Responsibilities" that the craft would be responsible for "Obtaining the required data and entering the data on the correct data sheets in a legible manner and attesting to the accuracy of the data by signature on the data sheet."
- B. Upon initiation of the procedure, the initial first and second person verification was performed by teams of journeymen electricians. After a layoff of Modification electricians occurred, teams of two engineers, one Modification engineer and one electrician, one Modification engineer and one engineering cooperative student (coop student), and one electrician and one coop student also began performing this function.
- C. Browns Ferry Standard Practice BF 3.11, "Second-Person Verification" provides criteria that states:

"Second-person verification shall be performed by qualified personnel. Each plant section shall establish a minimum qualification level for individuals performing second-person



FINDINGS (continued)

verification. Personnel should be trained and qualified for the job requirements. The intent of this requirement is to ensure that employees with little or no plant experience are not allowed to perform a second-person verification function.

Second-person verification is the verification by qualified, independent parties that a function has been accomplished as required. It is acceptable that these two individuals may verify the action at the same time, that is, may travel about the plant together or at different times. It shall be stressed that when traveling together each individual must verify the action...."

- D. On June 16, 1986, a QA survey (Surveillance No. EQ-2-QAS-0108) was performed and observed field personnel performing this activity. The inspection team consisted of an electrician and a coop student conducting a field verification of an electrical board. Only the electrician had previous training on the procedure. Another walkdown verification team working in the same area was observed not using second party verification as stated in BF SP 3.11. The verification practice in this case was that one party examined the components, called out information, and the other party wrote down the information.
- E. During the investigation, it was determined that the walkdown verification effort defined by SEMI-55 has now been assumed totally by the EQ Project where the previous efforts had utilized Modifications personnel for the physical walkdown work.
- F. In Section 4.0, "Precautions", Procedure SEMI-55 recognizes the dangers of performing the verification due to working in the close proximity of energized equipment, but the procedure places no particular requirement in that regard upon the qualifications of individuals performing the work.

IV. CONCLUSIONS

The concern is substantiated. The procedure for the subject verification effort was not being followed and qualified personnel were not being used in all instances.

V. RECOMMENDATIONS

- A. The procedure should be revised to clearly specify the qualifications of the individuals who are to be part of the verification effort.
- B. Personnel performing the verification should be trained and certified to perform the work and should also be trained and knowledgeable of how to safely work around energized electrical equipment.
- C. Confirm that previously performed verifications are acceptable or perform reverification.



VI. DOCUMENTS REVIEWED

- A. SEMI-55, "Electrical Equipment Field Verification"
- B. Quality Assurance Surveillance No. EQ-2-QAS-0108
- C. Completed SEMI-55 data sheets
- D. Browns Ferry Standard Practice 3.11, "Second-Person Verification"

