

6114
Filed: April 21, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
'88 APR 21 P3:54

before the
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

TEXAS UTILITIES ELECTRIC)
COMPANY et al.)

(Comanche Peak Steam Electric)
Station, Units 1 and 2))

Docket Nos. 50-445-OL
50-446-OL

(Application for an
Operating License)

ANSWERS TO BOARD'S 14 QUESTIONS
(Memo; Proposed Memo of April 14, 1986)
Regarding Action Plan Results Report I.d.1

In accordance with the Board's Memorandum; Proposed Memo-
randum and Order of April 14, 1986, the Applicants submit the
answers of the Comanche Peak Response Team ("CPRT") to the 14
questions posed by the Board, with respect to the Results Report
published by the CPRT in respect of CPRT Action Plan I.d.1, "QC
Inspector Qualifications."

Opening Request:

Produce copies of any CPRT-generated checklists that were
used during the conduct of the action plan.

Response:

All checklists used during the implementation of ISAP I.d.1
are attached, as follows:

BB04260140 BB0421
PDR ADOCK 05000445
G PDR

D503

1. Attachments 1, 2, and 3 included in the Results Report were used as aids in conducting the reviews and evaluations and documenting the results.
2. Checklist for the review of Brown & Root procedures CP-QAP-2.1, Rev. 13, and QI-QP-2.1-1, Rev. 7, to the requirements of ASNT-SNT-TC-1A, 1980
3. Checklist for the review of Brown & Root procedures CP-QAP-2.1, Rev. 13, and QI-QAP-2.1-5, Rev. 9, to the requirements of ANSI N45.2.6, 1978, and Regulatory Guide 1.58, Rev. 1
4. The ERC reinspection matrix, as defined in QI-005, was used to document reinspection results and the comparison of results.

Question No. 1:

1. Describe the problem areas addressed in the report. Prior to undertaking to address those areas through sampling, what did Applicants do to define the problem areas further? How did it believe the problems arose? What did it discover about the QA/QC documentation for those areas? How extensive did it believe the problems were?

Response:

This Action Plan was prepared to address the concerns raised by the NRC's Technical Review Team (TRT), which found in the training and certification files a lack of the supportive documentation required by procedures and Regulatory Requirements for personnel qualifications.

The NRC TRT concerns focused on TU Electric electrical QC inspectors. Based on the following considerations, a decision was made to evaluate, as part of the ISAP I.d.1 evaluation, all

TU Electric and Brown & Root QC inspectors employed on site as of March 1985.

1. A review of documentation for all TU Electric electrical QC inspectors, including those who had left the job site prior to March 1985, would develop a significant amount of historical information regarding the adequacy of the overall Comanche Peak QC inspector certification program.
2. A review of documentation for all current QC inspectors would determine if the current TU Electric and Brown & Root QC inspector certification programs were adequately implemented or, if required, would permit appropriate corrective action to be identified.

In addition, a decision was later made to conduct a I.d.1-type evaluation of inspectors identified during implementation of ISAPs VII.a.8, VII.b.1, VII.b.3, and VII.c. Subsequently, the scope of ISAP I.d.1 was broadened to include these additional evaluations in the final conclusion on the overall adequacy of the CPSES site QC inspector certification program. The evaluations confirmed the validity of NRC issues identified in NUREG-0797, Supplement 7, Page J-110.

Problem areas and objectives are described in section 3.0 of the Results Report, "Background."

Section 4.1 defines the methodology used to evaluate the NRC TRT concerns and to accomplish the major objectives of this Action Plan. No further action was taken to define problem

areas, other than to review inspector certifications as required by the Action Plan and described in the Results Report. Section 6.0 summarizes the conclusion reached as a result of the implementation of this Action Plan.

Question No. 2:

2. Provide any procedures or other internal documents that are necessary to understand how the checklists should be interpreted or applied.

Response:

Quality Instruction QI-005 details the use of the reinspection matrix (checklist). Other checklists extracted specific requirements from applicable standards, Regulatory Guides, and procedures and were prepared and used by experienced personnel, knowledgeable about the specific requirements, as an aid in conducting the reviews and evaluations and documenting the results.

Question No. 3:

3. Explain any deviation of checklists from the inspection report documents initially used in inspecting the same attributes.

Response:

When reinspections were required in accordance with ISAP I.d.1 methodology, they were performed by qualified TU Electric or Brown & Root inspectors (overviewed 100% by qualified QA/QC Review Team inspectors) using the same revisions of the inspection procedure and criteria as were used in the original inspection. As explained in Section 4.1.3 of the Results Report, "Care was taken to assure that the item was reinspected to the same criteria as that used for the initial inspection." The completed ERC reinspection matrix, as defined in QI-005,

listed the inspection attributes "expressed or implied" from the initial Project procedures.

Question No. 4:

4. Explain the extent to which the checklists contain fewer attributes than are required for conformance to codes to which Applicants are committed to conform.

Response:

Checklists used for evaluation or reviews were based upon the requirements of ANSI N45.2.6-1978, Regulatory Guide 1.58, Rev. 1, and/or procedures and did not contain fewer attributes than required for conformance to codes. To determine if the original inspector was capable of performing the required inspections, the revisions of inspection procedures and criteria used during reinspections were the same as those employed in the original inspections. However, attributes were not included in the sample if, for example, they had been disturbed or changed and subsequently reinspected by another inspector or if they were inaccessible or not recreatable to the initial inspection requirements. The reinspection matrix forms identified all inspection attributes even if the attributes were inaccessible or not recreatable.

"Inaccessible" and "not recreatable" are defined as follows:

"Inaccessible" means that extensive dismantling would be required to gain access for direct reinspection, such as in the case of piping, reinforcing steel, or conduit that is embedded in concrete.

"Not recreatable" means that a process or event cannot be recreated. Examples are measurement of pull force during cable pulling, measurement of interpass weld temperature, or performance of receiving inspection.

Question No. 5:

5. (Answer Question 5 only if the answer to Question 4 is that the checklists do contain fewer attributes.) Explain the engineering basis, if any, for believing that the safety margin for components (and the plant) has not been degraded by using checklists that contain fewer attributes than are required for conformance to codes.

Response:

This question is not applicable because the objective of ISAP I.d.1 was to assess the qualifications of QC inspectors.

Question No. 6:

6. Set forth any changes in checklists while they were in use, including the dates of the changes.

Response:

No substantive changes were made to the checklists during implementation.

Question No. 7:

7. Set forth the duration of training in the use of checklists and a summary of the content of that training, including field training or other practical training. If the training has changed or retraining occurred, explain the reason for the changes or retraining and set forth changes in duration or content.

Response:

No training was conducted in the use of checklists, nor was any required. Personnel familiar with codes, standards, and procedures prepared the checklists, which were used by experienced personnel and certified inspectors familiar with the

requirements. In some cases, the person who used the checklist also prepared it.

QA/QC Review Team personnel who used the reinspection matrix (checklist) were required to read Quality Instruction QI-005 and attest by their signatures that they had read and understood the instruction. TU Electric/Brown & Root QC inspection personnel had current certifications to conduct the required inspections.

Question No. 8:

8. Provide any information in Applicants' possession concerning the accuracy of use of the checklists (or the inter-observer reliability in using the checklists). Were there any time periods in which checklists were used with questionable training or QA/QC supervision? If applicable, are problems of inter-observer reliability addressed statistically?

Response:

Each attribute was reinspected by TU Electric or Brown & Root inspectors who were currently certified to conduct the required inspections (verified by the QA/QC Review Team), and independent third-party QA/QC Review Team inspectors performed a 100% overview by witnessing all reinspections. At no time were checklists used with persons with questionable training or supervision. The issue of inter-observer reliability was not applicable.

Question No. 9:

9. Summarize all audits or supervisory reviews (including reviews by employees or consultants) of training or of use of the checklists. Provide the factual basis for believing that the audit and review activity was adequate and that each concern of the audit and review teams has been resolved in a way that is consistent with the validity of conclusions.

Response:

Following is a list of five internal audits and two surveillances that were conducted on use of checklists by personnel implementing the ISAP:

ERC Audit 85-01, 9/23-26/85

ERC Audit 86-04, 7/21-31/86

ERC Audit 86-05, 8/18-22/86

ERC Audit 86-06, 9/15-19/86

ERC Audit 87-02, 2/23-27/87

ERC Surv. II8523, 12/17/85

ERC Surv. II8643, 10/17/86

No findings or discrepancies were identified except by the surveillance on December 17, 1985, which found discrepancies involving inadequate documentation of certain reviews conducted by the Special Evaluation Team. These were documented on Corrective Action Request (CAR) CP-014. Appropriate corrective action was taken by the QA/QC Review Team to resolve the concerns, and the CAR was closed on February 7, 1986.

Question No. 10:

10. Report any instances in which draft reports were modified in an important substantive way as the result of management action. Be sure to explain any change that was objected to (including by an employee, supervisor, or consultant) in writing or in a meeting in which at least one supervisory or management official or NRC employee was present. Explain what the earlier drafts said and why they were modified. Explain how dissenting views were resolved.

Response:

After the initial evaluation of inspection personnel for ISAP I.d.1 and the preparation of Rev. 0 of the Results Report,

the CPRT, with the concurrence of the SRT, decided to increase the scope of ISAP I.d.1 to include additional related data that was then becoming available and that would allow an overall conclusion to be reached on the adequacy of the CPSES site QC inspection certification. With the agreement of the QA/QC Review Team Leader, the Issue Coordinator, and the SRT, the scope was expanded so that the final conclusion on the overall adequacy of the CPSES site QC inspector certification program included evaluations from related ISAPs. The increase in scope resulted in a I.d.1-type evaluation on an additional 268 TU Electric, Brown & Root, and other site subcontractor personnel, in addition to the 319 inspectors evaluated in accordance with the original scope of ISAP I.d.1. Section 4.2, Revision 1, of the Results Report for ISAP I.d.1 describes the scope and methodology employed to evaluate inspectors for the related ISAPs.

Question No. 11:

11. Set forth any unexpected difficulties that were encountered in completing the work of each task force and that would be helpful to the Board in understanding the process by which conclusions were reached. How were each of these unexpected difficulties resolved?

Response:

No unexpected difficulties were encountered in implementing this Action Plan.

Question No. 12:

12. Explain any ambiguities or open items in the Results Report.

Response:

Two open items resulted from implementation of this Action Plan. These are discussed in Sections 5.8.6 and 5.8.7 of the Results Report and described below:

- QA/QC-PDR-80 and -81 document inadequate inspection procedures and inadequate acceptance criteria for inspection of cable tray welds and welds on electrical equipment supports. Because a number of inadequate inspection procedures were identified during implementation of other CPRT activities, the root cause/generic implications of these inadequate procedures were to be determined during the Collective Evaluation process. Collective Evaluation determined that the experience level of personnel responsible for preparation, review, and approval of inspection procedures had been upgraded and the review requirements properly defined, concluding that the current QA inspection programs were adequate under 10CFR50, Appendix B, Criterion X. However, a recommendation was made that TU Electric review historical inspection procedures to identify time periods in which safety-significant attributes were not subject to adequate inspection. For attributes that were identified but not scheduled for reinspection in the Post-construction Hardware Verification Program, an engineering evaluation was to be performed, including consideration of available inspection data, to bound the potential safety consequences of deviations that might

exist over the estimated range of as-built conditions. In cases in which acceptable bounds could not be established, additional data was to be obtained through re-inspections or other means as necessary to demonstrate the adequacy of installed hardware.

- QA/QC-PDR-45 revealed that a number of Bahnson inspectors were not properly certified and identified problems in the Bahnson inspector certification program. This PDR was classified as a program deficiency because of the extensive evaluation required to determine the effect of the deficiency on the quality of construction.

The potential generic implication of this QA/QC program deficiency was referred to collective evaluation for resolution.

During Collective Evaluation, the historical QA programs for control of site subcontractors were determined generally to be adequate, with the exception of TU Electric's program covering work by Bahnson.

Hardware discrepancies revealed during Phase III re-inspections were separately documented as required by the TU Electric/Brown & Root nonconformance system. Any of these discrepancies determined to be reportable by TU Electric to the NRC, in accordance with the requirements of 10CFR50.55(e), were to be considered by the QA/QC Review Team during Collective Evaluation for impact on the overall conclusions about the adequacy of construction and the QA/QC program. TU Electric

completed this task before the Results Report was issued, and none of the items were considered reportable. This item was considered closed.

Question No. 13:

13. Explain the extent to which there are actual or apparent conflicts of interest, including whether a worker or supervisor was reviewing or evaluating his own work or supervising any aspect of the review or evaluation of his own work or the work of those he previously supervised.

Response:

To the best of our knowledge, no conflicts of interest exist.

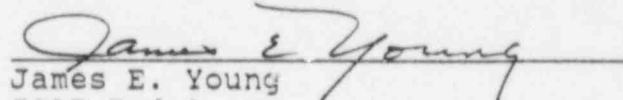
Question No. 14:

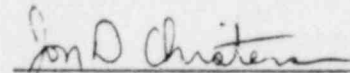
14. Examine the report to see that it adequately discloses the thinking and analysis used. If the language is ambiguous or the discussion gives rise to obvious questions, resolve the ambiguities and anticipate and resolve the questions.

Response:

Mr. J. E. Young, the Issue Coordinator, has reexamined the Results Report and sees no ambiguities or obvious unanswered questions other than those addressed in question 12. We believe that the extensive review process has eliminated any ambiguities.

Respectfully submitted,


James E. Young
ISAP I.d.1
Issue Coordinator



Jon D. Christensen
Deputy Review Team Leader

The CPRT Senior Review Team has reviewed the foregoing responses and concurs in them.

CERTIFICATION LEVELS & OPTIONS

QUALIFICATION REQUIREMENTS

TUGCO		LEVEL I			LEVEL II				LEVEL III							
	ALT.	1	2	3	1	2	3	4	1	2	3	4	5	6	7	8
HIGH SCHOOL GRADUATE		X				X				X	X	X				
ASSOCIATE DEGREE, RELATED			X				X						X	X		
4 YEARS COLLEGE DEGREE				X				X							X	X
0 RELATED INSP. EXPER.				X												
3 MONTHS RELATED INSP. EXPERIENCE			X													
6 MONTHS RELATED INSP. EXPERIENCE		X						X								
1 YEAR RELATED INSP. EXPERIENCE							X									
3 YEARS RELATED INSP. EXPERIENCE						X										
5 YEARS RELATED INSP. EXPERIENCE																X
7 YEARS RELATED INSP. EXPERIENCE														X		
10 YEARS RELATED INSP. EXPERIENCE										X						
SUFFICIENT NUCLEAR QA TRAINING												X		X		X
5 YEARS RELATED INCL. 2 YEARS NUCLEAR															X	
7 YEARS RELATED INCL. 2 YEARS NUCLEAR													X			
6 YEARS RELATED INCL. 2 YEARS QC INSP. & 2 YEARS ON NUCLEAR (NOTE 2)											X					
1 YEAR SATISFACTORY PERFORMANCE IN CORRESPONDING AS A QC TECHNICIAN (NOTE 8)					X											
6 YEARS SATISFACTORY PERFORMANCE IN CORRESPONDING AS A QC INSPECTOR (NOTE 1)									X							
8 YEARS RELATED EXPERIENCE INCL. 2 YEARS QC INSPECTION (NOTE 2)													X			
PHYSICAL EXAMINATION (NOTE 7)																
EYE TEST (VISION) (NOTE 3)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
COLOR VISION TEST (NOTE 4)																
INDOCTRINATION - QA PROGRAMMATIC TRAINING		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PERFORMANCE DEMONSTRATION (NOTE 5)																

HOW TO USE THE MATRIX

EACH COLUMN REPRESENTS A SET OF QUALIFICATION REQUIREMENTS WHICH, IF MET, WOULD MAKE THE CANDIDATE CERTIFIABLE.

ALL OF THE X'S IN A COLUMN MUST BE MET, THUS THERE ARE THREE (3) ALTERNATIVES OR SETS FOR LEVEL I CERTIFICATION, ANY ONE OF WHICH MIGHT APPLY ETC. FOR LEVEL II & III.

LEVEL II ALT. I REQUIRES THAT THE INSPECTOR HAS HAD PRIOR CERTIFICATION MEETING ONE OF THE ALTERNATIVES UNDER LEVEL I.

"RELATED" EXPERIENCE IS INSPECTION EXPERIENCE PER THE PROCEDURE.

NOTES: ANSI STANDARD N45.2.6, 1978
REQUIRES:

1. 6 YEARS AS A CORRESPONDING LEVEL II QC INSPECTOR.
2. 2 YEARS AS CORRESPONDING LEVEL II QC INSPECTOR.
3. USE OF CORRECTIVE GLASSES NOT ADDRESSED.
4. COLOR VISION TEST NOT ALWAYS REQUIRED.
5. PERFORMANCE CAPABILITY NOT MANDATORY AND MAY NOT BE PART OF CERTIFICATION EXAM PROCESS.
6. OJT DEPENDS ON PRIOR EXPERIENCE AND CONTENT NOT DEFINITIVE.
7. NO SPECIFIC REQUIREMENT FOR A PHYSICAL EXAM EXCEPT THE EYE TEST.
8. IF "QC TECHNICIAN" & "QC INSPECTOR" MEANS CERTIFIED AS LEVEL I & II RESPECTIVELY THEN THIS COMPLIES WITH ANSI.

ISAP I.d.1
(Cont'd)
ATTACHMENT 1

CERTIFICATION LEVELS & OPTIONS

B&R TRAINING & CERT.,
MECH. INSP.

QI-QAP-2.1-5 Rev. 7	I		II				III							
	1	2	1	2	3	4	1	2	3	4	5	6	7	8
HIGH SCHOOL GRAD. OR GED	X			X				X	X	X				
ASSOCIATE DEGREE, RELATED		X			X						X	X		
4 YEARS COLLEGE GRAD.						X							X	X
3 MONTHS RELATED INSP. EXPER.		X												
6 MONTHS RELATED INSP. EXPER.	X					X								
1 YEAR RELATED INSP. EXPER.					X									
3 YEARS RELATED INSP. EXPER.				X										
5 YEARS RELATED INSP. EXPER.														X
7 YEARS RELATED INSP. EXPER.												X		
10 YEARS RELATED INSP. EXPER.								X						
1 YEAR AS LEVEL I			X											
6 YEARS AS LEVEL II							X							
5 YEARS RELATED INSP. EXPER. INCLUDING 2 NUCL.													X	
7 YEARS RELATED INSP. EXPER. INCLUDING 2 NUCL.											X			
NUCL. QA TRAINING									X			X		X
8 YEARS RELATED INSP. EXPER. INCLUDING 2 NUCL. & 2 LEVEL II OR EQUIVALENT									X					
8 YEARS RELATED INSP. EXPER. INCLUDING 2 AS LEVEL II OR EQUIVALENT										X				
EXAM, CLOSED BOOK, GEN'L	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EXAM, OPEN BOOK, SPECIFIC	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EXAM, PRACTICAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EXAM, EYE, ACUITY & COLOR	X	X	X	X	X	X	X	X	X	X	X	X	X	X
READING ASSIGNMENT	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FORMAL CLASSROOM TRNG OR OUT	X	X	X	X	X	X								

"OR GED" WAS ADDED IN
REV. 1 JAN. '84 IN
REV. 5 "QA TECHNICIAN
WITH HIGH SCHOOL & ZERO
EXPERIENCE" WAS ADDED;
IN REV. 6 JUNE '84 IT
WAS DELETED. OTHERWISE
THIS MATRIX WAS APPLICABLE
FROM JAN. 14, 1982 TO DATE.

QI-QAP-2.1-5 REV. 7
11/15/84 REFERS TO ANSI
N45.2.6 1978 BUT NOT
REG. GUIDE 1.58,
REV. 1, HOWEVER IT
APPEARS TO MEET THE REG.
GUIDE REQUIREMENTS AT
LEAST FOR HIGH SCHOOL
DIPLOMA, IF NOT FOR
SPECIFYING ALTERNATES
TO THE RECOMMENDED EDUCATION
AND EXPERIENCE GUIDELINE:
SEE PAR. 3.2.1 "OTHER
FACTORS".

PRIOR TO JAN. 1982,
QI-QAP-2.1-1 REV. 1
2/13/81 APPLIED TO BOTH
MECH. INSPECTORS & NDE
PERSONNEL. ITS SCOPE
WAS TO MEET THE INTENT OF
ASNT-TC-1-A, ASME CODE SEC
III DIV 1, AWS D1.1, ANSI
B31.1, AND ANSI N45.2.6.

ANST-TC-1A 1975 WAS REFERENCED,
AND "1974 JUNE EDITION" WAS
COMMITTED TO (APPARENTLY
MEANT 1975). ASME CODE OF 1974
WAS COMMITTED TO, AS WAS ANSI
N45.2.6 (NO DATE).

ISAP I.D.1
(Cont'd)
ATTACHMENT 2

Revision: 2
Page 16 of 18

ISAP I.d.1
(Cont'd)

ATTACHMENT 3

INSPECTOR CERTIFICATION EVALUATION SUMMARY

Name: _____

SS#: _____

Applicable Education: _____

Manner of Verification: _____

Applicable Verified Prior Experience: _____

Initial and Discrepant Certifications: _____

Level

Certification

Date Certified

Discrepancies Noted: _____

Signature: _____

Date: _____

ISAP I.d.1
(Cont'd)

ATTACHMENT 3
(Cont'd)

INSPECTOR CERTIFICATION EVALUATION SUMMARY (CONTINUED)

Name: _____

SS#: _____

Recommended Corrective Action: _____

Signature: _____

Date: _____

Corrective Action Taken: _____

Signature: _____

Date: _____

☐ Acceptable

☐ Unacceptable

Signature: _____
Date: _____

Signature: _____
Date: _____

000001

ISAP I.d.1
QC INSPECTOR QUALIFICATIONS

Title: Review of Specific Brown & Root Procedures to the Requirements of ASNT-SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing"

Prepared by:

John D. Christ

Date

1/6/87 ^{25th}

Approved by:

J. L. Hanel

Date

1/6/87

This instruction/checklist provides specific direction to aid in the review/evaluation of the following Brown & Root written procedures to the requirements of ANST-SNT-TC-1A, 1980:

1. CP-QAP-2.1, Rev. 13, "Personnel Training and Qualification" dated February 18, 1986.
2. QI-QAP-2.1-1, Rev. 7, "Nondestructive Examination Personnel Certification" dated November 20, 1985 including Document Change Notice Number 1.

Each question is directly related by section or paragraph to SNT-TC-1A and will be evaluated and answered on an individual basis. An overall evaluation/conclusion statement is provided in Attribute 34 of this instruction/checklist.

- Completion of items 1 through 33 are self-explanatory.
- Complete item 34 by entering an overall evaluation/conclusion statement.

- 1) Are the definitions used in the procedures consistent with the definitions for qualification, certification, certifying agency, recommended practice, employer, and training given in SNT-TC-1A (paragraph 2.1 of SNT-TC-1A)?

 yes no

Answer:

000002

- 2) Do the procedures address qualification and certification of NDE personnel for the following methods (paragraph 3.1, SNT-TC-1A)?

- Radiographic Testing (RT)
- Magnetic Particle Testing (MT)
- Ultrasonic Testing (UT)
- Liquid Penetrant Testing (PT)
- Eddy Current Testing (ET)
- Neutron Radiographic Testing (NRT)
- Leak Testing (LT)
- Acoustic Emission (AE)

_____ yes _____ no

Answer:

- 3) Do the procedures require that while in the process of being qualified and certified as NDT Level I, personnel should be considered as trainees, that they should work with a certified individual and shall not independently conduct any tests, interpret or evaluate the results of tests, or report test results (paragraph 4.2, SNT-TC-1A)?

_____ yes _____ no

Answer:

000003

4) Do the procedures define three levels of qualification as follows (paragraph 4.3, SNT-TC-1A)?

- NDT Level I - An NDT Level I individual should be qualified to properly perform specific calibrations, specific tests, and specific evaluations for acceptance or rejection determinations according to written instructions and to record results. The NDT Level I shall receive the necessary instruction or supervision from a certified NDT Level II or III individual.
- NDT Level II - An NDT Level II individual should be qualified to set up and calibrate equipment and to interpret and evaluate results with respect to applicable codes, standards, and specifications. The NDT Level II should be thoroughly familiar with the scope and limitations of the methods for which the individual is qualified and should exercise assigned responsibility for on-the-job training and guidance of trainees and NDT Level I personnel. The NDT Level II should be able to prepare written instructions, and to organize and report the results of nondestructive tests.
- NDT Level III - An NDT Level III individual should be capable of establishing techniques and procedures; interpreting codes, standards, specifications, and procedures; and designating the particular test methods, techniques, and procedures to be used. The NDT Level III should be responsible for the NDT operations for which qualified and to which assigned, and should be capable of interpreting and evaluating results in terms of existing codes, standards, and specifications. The NDT Level III should have sufficient practical background in applicable materials, fabrication, and product technology to establish techniques and to assist in establishing acceptance criteria where none are otherwise available. The NDT Level III should have general familiarity with other appropriate NDT methods, and should be qualified to train and examine NDT Level I and Level II personnel for certification.

000004

4) (Cont'd)

_____ yes

_____ no

Answer:

- 5) Do the procedures describe the responsibility of each level of certification for determining the acceptability of materials or components in accordance with the applicable codes, standards, specifications, and procedures (paragraph 5.2, SNT-TC-1A)?

_____ yes

_____ no

Answer:

000005

- 6) Do the procedures address the recommended training and experience factors contained in Table 6.3.1 of SNT-TC-1A for NDT Levels I and II (Section 6.3, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 7) Do the procedures state the following criteria should be addressed for NDT Level III (Section 6.3, SNT-TC-1A)?

- Have graduated from a minimum four-year college or university curriculum with a degree in engineering or science plus one years experience in nondestructive testing in an assignment comparable to that of an NDT Level II in the applicable test method(s).

or:

- Have completed with passing grades at least two years of engineering or science study at a university, college, or technical school plus two years experience in assignments at least comparable to that of NDT Level II in the applicable test method(s).

or:

- Have four years experience in an assignment at least comparable to that of an NDT Level II in the applicable testing method(s).

When the individual is qualified by examination, the above requirements may be partially replaced by experience as a certified NDT Level II, or in assignments at least comparable to NDT Level II, in other methods listed in Par. 3 of this Recommended Practice as defined in the employer's written practice.

_____ yes _____ no

Answer:

8) Do the procedures address the following items regarding training (Section 7, SNT-TC-1A)?

- Personnel being considered for certification should complete sufficient organized training to become thoroughly familiar with the principles and practices of the specified test method related to the level of certification desired and applicable to the practices to be used and the products to be tested.
- The training program should include sufficient examinations to assure that the necessary information has been comprehended.
- Provide for training course outlines for Levels I and II personnel which may be based on technical source material referenced in paragraph 7.3 of SNT-TC-1A.

_____ yes _____ no

Answer:

000007

- 9) Do the procedures state that an NDT Level III or his designated representative should administer and grade examinations (paragraph 8.1, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 10) Do the procedures state examinations to verify physical and technical qualifications should consist of the following items (Section 8.1, SNT-TC-1A)?

- Physical

- (1) The examination should assure natural or corrected near-distance acuity in at least one eye such that the applicant is capable of reading a minimum of Jaeger Number 2 or equivalent type and size letters at a distance of not less than 12 inches (30.5 cm) on a standard Jaeger test chart. The ability to perceive an Ortho-Rater minimum of 8 or similar test pattern is also acceptable.
- (2) The examination should demonstrate the capability of distinguishing and differentiating contrast between colors used in the method.
- (3) The examination should demonstrate additional physical capabilities as required by the employer.
- (4) The examination should be administered on an annual basis.

- (5) Examination results are to be kept on file for the period of certification (see Par. 9.7).

- General (Written) (For NDT Levels I and II)

- (1) The general examinations should be addressed to the basic principles of the applicable method.
- (2) In preparing the examination, the employer should select or devise appropriate questions covering the applicable method to the degree required by the employer's written practice.
- (3) The questions and answers provided in the applicable separate Question Booklets (see 8.2) are suggested as guidelines for the development of the general examination.

- Specific (Written) (For NDT Levels I and II)

- (1) The specific examination should address the equipment, operating procedures, and test techniques that the applicant may encounter during specific assignments to the degree required by the employer's written practice.
- (2) The specific examination should also cover the specifications or codes and acceptance criteria used by the employer in his nondestructive testing procedures.

- Practical (For NDT Levels I and II)

- (1) The candidate should demonstrate familiarity with and the ability to operate the necessary test equipment, record, and analyze the resultant information to the degree required.
- (2) At least one selected specimen should be tested and the results of the test analyzed by the candidate.
- (3) The description of the specimen, the test procedure, including check points, and the results of the examination should be documented.

NDT Level III examinations should be in accordance with Par. 8.3.3 of SNT-TC-1A.

_____ yes _____ no

000009

Answer:

- 11) Do the procedures state written examinations should be administered without access to reference material (closed book) except that necessary data, such as graphs, tables, specifications, procedures, and codes, may be provided (paragraph 8.3, SNT-TC-1A)?

_____ yes _____ no

Answer:

000010

- 12) Do the procedures require all questions used for Level I and Level II examinations to be approved by the responsible Level III (paragraph 8.3, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 13) For NDT Level I, do the procedures address the following recommendations (Section 8.3.1, SNT-TC-1A)?

- General Examination - The recommended minimum number of Level I questions which should be given are:

Test Method	Number of Questions
Radiographic Testing	40
Magnetic Particle Testing	30
Ultrasonic Testing	40
Liquid Penetrant Testing	30
Eddy Current Testing	30
Neutron Radiographic Testing	40
Leak Testing	20
Acoustic Emission	40

- Specific Examination - The recommended minimum number of questions which should be given are:

Test Method	Number of Questions
Radiographic Testing	20
Magnetic Particle Testing	20
Ultrasonic Testing	20
Liquid Penetrant Testing	20
Eddy Current Testing	15
Neutron Radiographic Testing	15

000011

Leak Testing

1. Bubble Test	15
2. Absolute Pressure Leak Test (Pressure Change)	15
3. Halogen Diode Leak Test	15
4. Mass Spectrometer Leak Test	20
Acoustic Emission	20

- Practical Examination - Proficiency shall be demonstrated in performing the applicable nondestructive tests on one or more samples approved by the NDT Level III. At least ten different checkpoints requiring an understanding of test variables and the employer's procedural requirements shall be included in this practical examination.

_____ yes _____ no

Answer:

- 14) For NDT Level II, do the procedures address the following recommendations (Section 8.3.2, SNT-TC-1A)?

- General Examination - The recommended minimum number of Level II questions which should be given are:

Test Method	Number of Questions
Radiographic Testing	40
Magnetic Particle Testing	30
Ultrasonic Testing	40
Liquid Penetrant Testing	30
Eddy Current Testing	30
Neutron Radiographic Testing	40
Leak Testing	20
Acoustic Emission	40

000012

- Specific Examination - The recommended minimum number of questions which should be given are:

Test Method	Number of Questions
Radiographic Testing	20
Magnetic Particle Testing	15
Ultrasonic Testing	20
Liquid Penetrant Testing	15
Eddy Current Testing	15
Neutron Radiographic Testing	15
Leak Testing	
1. Bubble Test	15
2. Absolute Pressure Leak Test (Pressure Change)	15
3. Halogen Diode Leak Test	15
4. Mass Spectrometer Leak Test	40
Acoustic Emission	20

- Practical Examination - Proficiency should be demonstrated in selecting and performing the applicable nondestructive tests on one or more samples approved by the NDT Level III. At least ten different checkpoints requiring an understanding of test variables and the employer's procedural requirements should be included in this practical examination.

_____ yes _____ no

Answer:

15) For NDT Level III, do the procedures address the following examination requirements (Section 8.3.3, SNT-TC-1A)?

- Basic Examination (Required only once when more than one method of examination is taken).
 - (a) Twenty (20) questions relating to understanding the SNT-TC-1A document.
 - (b) Fifteen (15) questions relative to applicable materials, fabrication, and product technology.
 - (c) Fifteen (15) questions which are selected from or are similar to published Level II questions for other appropriate NDT methods.
- Method Examination (For each method).
 - (a) Thirty (30) questions relating to fundamentals and principles, which are selected from or are similar to published ASNT Level III questions for each method, and
 - (b) Fifteen (15) questions relating to application and establishment of techniques and procedures which are selected from or are similar to the published ASNT Level III questions for each method, and
 - (c) Twenty (20) questions relating to capability for interpreting codes, standards, and specifications relating to the method.
- Specific Examination (For each method).
 - (a) Twenty (20) questions relating to specifications, equipment, techniques, and procedures applicable to the employer's product(s) and methods employed, and to the administration of the employer's written practice.

_____ yes

_____ no

Answer:

000014

- 16) Do the procedures allow waiver of Level III examinations only on the basis of demonstrated ability, achievement, experience, and education, as defined in Par. 4.3.(3) of SNT-TC-1A and, if so, do they state that written certification should be provided and evidence supporting the certification should be on file (paragraph 8.3.4, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 17) Do the procedures require that an NDT Level III or his designated representative be responsible for the administration and grading of examinations for NDT Level I and Level II personnel (paragraph 8.4.1, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 18) Do the procedures require Brown & Root to be responsible for the administration and grading of examinations for Level III personnel even though the actual administration and grading may be performed by a designated representative of Brown & Root (paragraph 8.4.1, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 19) Do the procedures define how a composite grade based upon the general, specific, and practical or upon the basic, method, and specific examinations should be determined (paragraph 8.4.2, SNT-TC-1A)?

_____ yes _____ no

Answer:

000016

20) If weighting factors are used, do the procedures require the total of the weighting factors to equal 1.0 and do the procedures state the weighting factors should be within the following ranges (Section 8.4.3, SNT-TC-1A)?

- NDT Level I Weighting Factors

- (a) General - 0.2 to 0.6
- (b) Specific - 0.2 to 0.5
- (c) Practical - 0.3 to 0.7

- NDT Level II Weighting Factors

- (a) General - 0.3 to 0.7
- (b) Specific - 0.2 to 0.6
- (c) Practical - 0.2 to 0.5

- NDT Level III Weighting Factors

- (a) General - 0.2 to 0.5
- (b) Specific - 0.3 to 0.6
- (c) Practical - 0.2 to 0.4

- The composite grade (Gc) is determined as follows:

Levels I & II; $G_c = (G_g \times W_g) + (G_s \times W_s) + (G_p \times W_p)$

Level III; $G_c = (G_b \times W_b) + (G_m \times W_m) + (G_x \times W_s)$

Where Gc = Composite grade

Gg = Actual grade from general examination in percent

Wg = Weighting factors of general examination

Gs = Actual grade from specific examination in percent

Ws = Weighting factor of specific examination

Gp = Actual grade from practical examination in percent

Wp = Weighting factor of practical examination

Gb = Actual grade from basic examination in percent

Wb = Weighting factor of basic examination

Gm = Actual grade from method examination in percent

Wm = Weighting factor of method examination

_____ yes

_____ no

Answer:

000017

- 21) For examinations do the procedures specify or recommend that a composite grade of 80% is passing and that a grade of 70% is passing for each general, specific, and practical or the basic, method, and specific examination (paragraph 8.4.4, SNT-TC-1A)?

___ yes ___ no

Answer:

- 22) If examinations are administered and graded for Brown & Root by an outside agency, and the outside agency issues grades of Pass or Fail only, do the procedures require documentation to be in the form of a certified report and indicate the Pass grade may be accepted as 80% for that particular examination (paragraph 8.4.5, SNT-TC-1A)?

___ yes ___ no

Answer:

- 23) Do the procedures require those failing to attain the required grades to wait at least 30 days or show evidence of having received suitable additional training before re-examination (section 8.5, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 24) Do the procedures specify that certification of all levels of NDT personnel is the responsibility of Brown & Root (paragraph 9.1, SNT-TC-1A)?

_____ yes _____ no

Answer:

000019

- 25) Do the procedures require certification of NDT personnel to be based on satisfactory qualification, i.e. education, training, and experience; training programs; and examination as defined in sections 6, 7, and 8 of SNT-TC-1A (paragraph 9.3, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 26) If an outside agency is used to provide Level III services, do the procedures require Brown & Root to retain responsibility for certification (paragraph 9.4, SNT-TC-1A)?

_____ yes _____ no

Answer:

000020

- 27) If outside services for training and examination are utilized, do the procedures require that these services be conducted in accordance with Brown & Root written practices (paragraph 9.5, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 28) Do the procedures require the following records of certified individuals to be maintained (section 9.6.1, SNT-TC-1A)?

- Name of certified individual.
- Level of certification and test method.
- Education background and experience of certified individuals.
- Statement indicating satisfactory completion of training in accordance with the employer's written procedure.
- Results of the physical examination prescribed in Par. 8.1.1 of SNT-TC-1A.
- Current examination copy(s) or evidence of successful completion of the examinations.
- Other suitable evidence of satisfactory qualifications when such qualifications are used in lieu of examinations.
- Composite grade(s) or suitable evidence of grades.
- Dates of certification and/or recertification and the dates of assignment to NDT.
- Signature of employer's designated representative.

000021

28) (Cont'd)

_____ yes

_____ no

Answer:

29) Do the procedures require NDT personnel to be recertified at least once every 3 years based on evidence of continuing satisfactory performance or re-examination in those portions of the examinations deemed necessary by the NDT Level III (Section 9.7.1, SNT-TC-1A)?

_____ yes

_____ no

Answer:

000022

- 30) Do the procedures state NDT personnel may be re-examined any time at the discretion of Brown & Root and have their certifications extended or revoked (paragraph 9.7.2, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 31) Do the procedures address rules which should be invoked which cover the duration of interrupted service which will require re-examination and recertification (paragraph 9.7.3, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 32) Do the procedures specify that an individuals certification is revoked when employment is terminated (paragraph 10.1, SNT-TC-1A)?

_____ yes _____ no

Answer:

- 33) Do the procedures specify that NDT personnel whose certifications have been terminated may be recertified to their former NDT levels based on examination provided all of the following conditions are met (section 10.2, SNT-TC-1A)?

- The employee has proof of prior certification.
- The employee was working in the capacity to which he certified within 6 months of termination.
- The employee is being recertified within 6 months of his termination.

_____ yes _____ no

Answer:

34) Evaluation/Conclusion Statement

Signature of Reviewer

Date

Revision: 0
December 2, 1986
I.d.1 N45.2.6 Checklist
Page 1 of 11

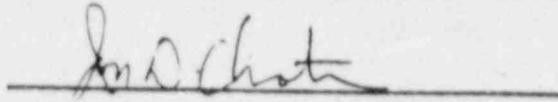
000001

ISAP I.d.1

QC Inspector Qualifications

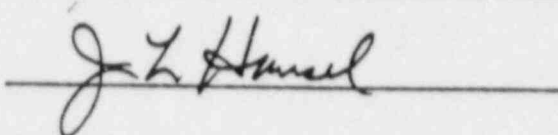
Title: Review of Specific Brown & Root procedures to the Requirements
of ANSI N45.2.6-1978 and Regulatory Guide 1.58, Rev. 1.

Prepared by:



Date: 12/2/86

Approved by:



Date: 12/2/86

This instruction/checklist provides specific direction to aid in the review/evaluation of the following Brown & Root written procedures to the requirements of ANSI N45.2.6 - 1978 and Regulatory Guide 1.58 Rev. 1:

1. CP-QAP-2.1, Rev. 13, "Personnel Training and Qualification" dated February 18, 1986.
2. QI-QAP-2.1-5, Rev. 9, "Training and Certification of Mechanical Inspection Personnel" dated November 20, 1985 including Document Change Notice Numbers 2, 3, and 4.

Each question is directly related by paragraph to N45.2.6 and applicable section of Regulatory Guide 1.58. Each question will be evaluated and answered on an individual basis, with an overall evaluation/conclusion statement provided in Attribute 21 of this instruction/checklist.

- Completion of items 1 through 20 are self-explanatory.
- Complete item 21 by entering an overall evaluation/conclusion statement.

- 1) Does/Do the procedure(s) clearly define personnel to which the requirements are applicable. (N45.2.6 Para. 1.2)

YES ☐

NO ☐

answer:

- 2) Is/are the procedure(s) reasonably clear, in not being applicable to (Reg. Guide 1.58) for the following.

- NDE personnel under SNT-TL-1a conducting, RT, MT, PT, UT, ET and LT?
- Pre-operations, start-up, or operations Test personnel?

YES ☐

NO ☐

answer:

- 3) Does/Do the procedure(s) assure that only personnel who meet the requirements of N45.2.6 are permitted to perform inspection, examination and testing activities (N45.2.6 para 1.3)?

YES ☐

NO ☐

answer:

000003

- 4) Does/Do the procedure(s) clearly identify, who is responsible for establishing and implementing the requirements for selection, training, qualification and resources necessary, to comply with the requirements of (N45.2.6 para 1.3)?

YES ☐

NO ☐

answer:

- 5) Does/Do the procedure(s) define inspection, examination and testing, in a manner consistent with (N45.2.6 para 1.4)?

YES ☐

NO ☐

answer:

- 6) Does/Do the procedure(s) define or assign responsibility for planning for staffing, indoctrination and training of personnel in adequate numbers to perform required inspections, examinations and test. To allow adequate time for assignment/selection/training of required personnel (N45.2.6 para 2.1)?

YES ☐

NO ☐

answer:

000004

- 7) Does/Do the procedure(s) adequately address indoctrination of personnel, as to the technical objectives of the project, codes and standards to be used; QA elements to be employed (N45.2.6 para 2.1.1)?

YES ☐

NO ☐

answer:

- 8) A: Is the need for formal training programs addressed?

YES ☐

NO ☐

- B: Does/Do the procedure(s) adequately specify how they are to be addressed?

YES ☐

NO ☐

- C: Is on-the-job training (OJT) included in the program with emphasis on, actual performance of inspections?

YES ☐

NO ☐

- D: If training is the basis for certification, are records required to be maintained? (requirement for A thru D N45.2.6 para 2.1.2)

YES ☐

NO ☐

answer:

000005

- 9) Are the capabilities of a candidate for certification, initially determined by suitable evaluation of the candidates education, experience, training, test results or capability determination. (N45.2.6 para 2.2)?

YES ☐

NO ☐

answer:

- 10) Is job performance of personnel, re-evaluated at least every three (3) years, and are re-evaluations done by evidence of continued satisfactory performance or by redetermination of capability per para 2.2 - N45.2.6 (N45.2.6 para 2.3)?

YES ☐

NO ☐

answer:

- 11) Does/Do the procedure(s) provide for the removal of persons from an activity, if during the periodic evaluation or at any other time, it is determined by the responsible organization that their capabilities are not in accordance with the job qualifications (N45.2.6 para 2.3)?

YES ☐

NO ☐

answer:

- 12) Does/Do the procedure(s) require re-evaluation of an individual who has not performed inspection, examination, or testing activities for a period of one (1) year (N45.2.6 para 2.3)?

YES ☐

NO ☐

answer:

- 13) Does the certification record form contain the following information (N45.2.6 para 2.4)?

YES ☐

NO ☐

- employer's name.
- identification of person certified.
- level of capability.
- activities certified to perform.
- basis used for certification, including
 - a. records of education, experience and training.
 - b. Test results, where appropriate.
 - c. results of capability demonstration.
- results of physical examinations, where required.
- signature of employer's designated representative.
- date of certification.
- date of certification expiration.

answer:

000007

- 14) Does/Do the procedure(s) identify any special physical characteristics need in the performance of activities? If so, is there a requirement for verification by examination at intervals, not to exceed one year (N45.2.6 para 2.5)?

YES ☐

NO ☐

answer:

- 15) Does/Do the procedure(s) define the minimum capabilities that qualify personnel to perform inspections, examinations and test, at the various levels in accordance with the following:

Level I (N45.2.6 para 3.2)

YES ☐

NO ☐

A Level I person shall be capable of performing the inspections, examinations, and tests that are required to be performed in accordance with documented procedures and/or industry practices. The individual shall be familiar with the tools and equipment to be employed and shall have demonstrated proficiency in their use. The individual shall also be capable of determining that the calibration status of inspection and measuring equipment is current, that the measuring and test equipment is in proper condition for use, and that the inspection, examination, and test procedures are approved.

Level II (N45.2.6 para 3.3)

YES ☐

NO ☐

A Level II person shall have all of the capabilities of a Level I person for the inspection, examination or test category or class in question. Additionally, a Level II person shall have demonstrated capabilities in planning inspections, examinations, and test; in setting up tests including preparation and set-up of related equipment, as appropriate; in supervising or maintaining surveillance over the inspections, examinations, and tests; in supervising and certifying lower level personnel; in reporting inspection, examination, and testing results; and in evaluating the validity and acceptability of inspection, examination, and test results.

000008

15) (Cont'd)

Level III (N45.2.6 para 3.4)

YES ☐

NO ☐

A Level III person shall have all of the capabilities of a Level II person for the inspection, examination or test category or class in question. In addition, the individual shall also be capable of evaluating the adequacy of specific programs used to train and test inspection, examination, and test personnel whose qualifications are covered by this Standard.

Level III (Reg Guide 1.58 section C.5)

YES ☐

NO ☐

Level III individuals should be capable of reviewing and approving inspection, examination and testing procedures and of evaluating the adequacy of such procedures to accomplish the inspection, examination and test objectives.

answer:

- 16) Does the commitment to Reg Guide 1.58, take exception to the recommendations for, education and experience described in Section 3.5 of N45.2.6. (Reg Guide 1.58 Section C.6)

YES ☐

NO ☐

answer:

- 17) If the answer to 18 above is No. Does/Do the procedure(s) require, education and experience for the various levels, in accordance with para 3.5.1, 3.5.2 and 3.5.3 of N45.2.6?

YES ☐

NO ☐

answer:

- 18) Does/do the procedure(s) require, that personnel who are assigned responsibility and authority to perform the functions listed below, have as a minimum, the level of capability shown. (N45.2.6 para 4)

YES ☐

NO ☐

000010

18 (Cont'd)

Project Function	Level		
	L-I	L-II	L-III
Recording inspection, examination, and testing data	X	X	X
Implementing inspection, examination, and testing procedures	X	X	X
Evaluating the validity and acceptability of inspection, examination, and testing results		X	X
Reporting inspection, examination, and testing results		X	X
Supervising equivalent or lower level personnel		X	X
Qualifying lower level personnel		X	X
Evaluating the adequacy of specific programs used to train and test inspection, examination and testing personnel			X
Qualifying same level personnel			X

answer:

000011

- 19) If the procedure(s) provide for a single inspection or test to be implemented by a team or group and personnel not meeting the certification requirements, are used for data taking or in-plant or equipment operation, is there a requirement that these personnel have sufficient training to ensure an acceptable level of competence and performance and that they are supervised or overseen by a qualified individual, participating in the inspection, examination or test. (N45.2.6, para 4; Reg Guide 1.58 Section C.7)

YES ☐

NO ☐

answer:

- 20) Is a file of records of personnel qualifications, established and maintained by the employer and is collection, storage and control, in accordance with, ANSI N45.29? (N45.2.6, para 5)

YES ☐

NO ☐

answer:

- 21) Evaluation/Conclusion Statement.

Signature of Reviewer

Date

FOR INFORMATION ONLY

EVALUATION RESEARCH CORPORATION

COMANCHE PEAK RESPONSE TEAM

QUALITY INSTRUCTION FOR ISSUE SPECIFIC ACTION PLAN I.d.1

INSTRUCTION NO: QI-005

REVISION: 3

ISSUE DATE: 04/23/86

EVALUATION OF INSPECTOR PERFORMANCE

Prepared by: *[Signature]*

Date: 4/22/86

Approved by:

[Signature]
Issue Coordinator

Date: 4/22/86

Approved by:

E. C. Baiada
On-Site QA Representative

Date: 4/23/86

Approved by:

[Signature] for
QA/QC Review Team Leader

Date: 4/23/86

1.0 PURPOSE

This instruction defines the reinspection, documentation, and reporting activities required of the ERC Inspection Group to support completion of the actions defined in Action Plan I.D.1.

2.0 APPLICABILITY

This instruction applies to all inspectors in I.d.1, whose qualifications were not satisfactorily substantiated by Phases I & II.

3.0 REFERENCES

3.1 CPRT Action Plan I.D.1 Phase III, Revision 2

4.0 GENERAL

4.1 Responsibilities

4.1.1 The ERC Inspection Group is responsible for:

1. Assuring that all reinspections, identified in Phase III, are properly performed and documented.
2. Assuring that tabulation of reinspection result comparisons are accurate.
3. Reporting final results, for each identified inspector, to the appropriate Review Team Leaders.

4.1.2 All inspectors will be certified in accordance with ANSI N45.2.6-1978 and Reg. Guide 1.58.

4.2 Policy

TUGCO and/or Brown & Root, as applicable, will provide the ERC inspection group with the information defined in paragraph 4.1.3.2 of the Action Plan. As a minimum ERC will validate the accuracy of those inspections designated "not recreatable" or "not accessible", by reviewing approximately 10% of the respective records/installation.

4.0 GENERAL (Cont'd)

4.3 Definitions

Since ISAP I.d.1 is intended to evaluate Inspector Performance to historical criteria, the term Inaccessible has been broadened to include "without invalidating previous tests/inspections". The meaning defined in the "CPRT App B" was intended to be used in selecting Hardware reinspection samples to be reinspected to current criteria regardless of previous inspection or test.

4.3.1 Reinspection

Reinspection, by a qualified TUGCO or Brown & Root inspector being overviewed 100% by a qualified ERC inspector, using the same revisions of the inspection procedures and criteria as the original inspection.

4.3.2 Inspection Attribute - Each individual activity within an inspection process which requires an accept/reject decision, i.e. weld length, weld profile, lug crimp location, anchor embedment length, etc.

4.3.3 Not recreatable Inspection - An inspection attribute(s) which cannot be reproduced, (i.e., weld fit-up, cable pull tension, etc.) or which has been altered from the originally inspected condition, (i.e., subsequently reworked, replaced, or further construction activity affected, such as a separation).

4.3.4 Objective Attribute - An inspection attribute that is not subject to interpretation and does not require any judgement. (i.e., conductor landed on correct terminal point).

4.3.5 Subjective Attribute - An inspection attribute that is subject to interpretation and the specific item being inspected may be viewed slightly different by various inspectors. (i.e., conduit marking visible from floor)*.

4.3.6 Inaccessible - A single attribute, or group of attributes which cannot be properly inspected without extensive dismantling or invalidating previous inspection/test results.

5.0 PROCEDURE

5.1 The appropriate ERC Inspection Discipline Level III is responsible for assuring that the appropriate Inspection Procedures and respective IR's are reviewed and the necessary reinspection matrixes developed to effect satisfactory reinspection and results comparison. The reinspection matrixes shall be reviewed and approved by the Level III prior to use.

5.1.1 The reinspection matrix, Attachment 6.1, will compile the following information:

- A. Identification of all inspection attributes either expressed or implied within the Inspection Procedures.
- B. Correlation of inspection attributes to procedure instructions and or accept/reject criteria.
- C. Objective/subjective designation of each inspection attribute.
- D. Recreatable (A) not recreatable (B) designation of each inspection attribute.
- E. Inspection results, of both the original inspection and the reinspection.
- F. Identification of all inspection criteria used during the ERC overview.

5.2 The ERC Inspection Group will assure that all required reinspections are performed and documented in accordance with the reinspection matrix instructions.

5.3 The ERC Discipline Level III will tabulate the reinspection results for each inspector and provide those results to the QA/QC RTL J. Hansel. As a minimum, the results reports will identify:

- A. Total number of attributes reinspected.
- B. Total number of disagreements per objective attributes.
- C. Total number of disagreements per subjective attributes.
- D. Results of review per 4.2 above.

5.4 Final reports will be provided to the I.d.1 Issue Coordinator.

6.0 ATTACHMENTS

6.1 ERC Reinspection Matrix

Inspection Criteria: Proc/Rev 5 DWG/Rev 6

Inspection dates: Original 7 ERC 8 Inspection: POST IN-PROCESS

C. D. indicates that the characteristic is either not accessible or not observable for other reasons. All C. D. entries will be explicitly explained in remarks attached to the Matrix.

ERC Level III Approval _____ Date _____

ERC Inspector _____
 (15) Date _____

ATTACHMENT
COMPLETION INSTRUCTIONS

1. Enter applicable A. I. number.
2. Enter Type of Inspection, Item identification, and appropriate additional information desired for case of tracking or tabulation.
3. Consecutively number each page of the matrix and attached remarks or other information.
4. Enter name of original TUGCO or B&R inspector.
5. Self explanatory.
6. Self explanatory.
7. Self explanatory.
8. Self explanatory.
9. Enter type of ORIGINAL inspection.
10. Complete in accordance with paragraph 5.1.1 A & B.
11. Complete in accordance with paragraph 5.1.1 D.
12. Complete in accordance with paragraph 5.1.1 C.
13. Enter the original inspection results by checking the SAT/UNSAT block where appropriate. In the case of N/A or NO the ERC entry in that column will be the same, not a checkmark.
14. Enter a checkmark in the SAT/UNSAT column as appropriate. In the C. D. column, enter a checkmark if reinspection cannot determine sat/unsat, or enter N/A if the item did not apply.

NOTE: When the attribute is designated as 'B' (not recreatable) the TUGCO, B&R and ERC portions of block 13 & 14 for that attribute will be xxx'd out to prevent comparative entries.

TUGCO/B&R are responsible for documenting all non-conforming conditions noted during these reinspections.

15. Sign & Date this block when the overview and matrix are complete.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
before the
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	Docket Nos. 50-445-OL
)	50-446-OL
TEXAS UTILITIES ELECTRIC)	
COMPANY et al.)	
)	(Application for an
(Comanche Peak Steam Electric)	Operating License)
Station, Units 1 and 2))	
)	

CERTIFICATE OF SERVICE

I, Thomas A. Schmutz, hereby certify that the foregoing Answers To Board's 14 Questions was served this 21st day of April 1988, by mailing copies thereof (unless otherwise indicated,, first class mail, postage prepaid to:

*Peter B. Bloch, Esquire
Chairman
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

*Alan S. Rosenthal, Esq.
Chairman
Atomic Safety and Licensing
Appeal Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

*B. Paul Cotter, Jr., Esq.
Chairman
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Assistant Director for
Inspection Programs
Comanche Peak Project Division
U.S. Nuclear Regulatory
Commission
P.O. Box 1029
Granbury, TX 76048

*/ Asterisk indicates service by hand or overnight courier.

*Juanita Ellis
President, CASE
1426 South Polk Street
Dallas, TX 75224

William R. Burchette, Esquire
Heron, Burchette, Ruckert,
& Rothwell
Suite 700
1025 Thomas Jefferson St., N.W.
Washington, D.C. 20007

*William L. Clements
Docketing & Service Branch
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

*Billie Pirner Garde
Government Accountability
Project
Midwest Office
104 E. Wisconsin Avenue - B
Appleton, WI 54911-4897

Susan M. Theisen, Esquire
Assistant Attorney General
Attorney General of Texas
Environmental Protection Division
P.O. Box 12548
Austin, Texas 78711-1548

Robert A. Jablon, Esquire
Spiegel & McDiarmid
1350 New York Avenue, N.W.
Washington, D.C. 20005-4798

*Elizabeth B. Johnson
Oak Ridge National Laboratory
P.O. Box X Building 3500
Oak Ridge, Tennessee 37830

*Dr. Walter H. Jordan
881 West Outer Drive
Oak Ridge, Tennessee 37830

Robert D. Martin
Regional Administrator,
Region IV
U.S. Nuclear Regulatory
Commission
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76011

Dr. Kenneth A. McCollom
Administrative Judge
1107 West Knapp
Stillwater, Oklahoma 74075

Joseph Gallo, Esquire
Hopkins & Sutter
Suite 1250
1050 Connecticut Avenue, N.W.
Washington, D.C. 20036

*Janice E. Moore, Esquire
Office of the General Counsel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

*Anthony Roisman, Esquire
1401 New York Avenue, N.W.
Suite 600
Washington, D.C. 20005


Lanny A. Sinkin
Christic Institute
1324 North Capitol Street
Washington, D.C. 20002

Nancy Williams
CYGNA Energy Services, Inc.
2121 N. California Blvd.
Suite 390
Walnut Creek, CA 94596

David R. Pigott
Orrick, Herrington & Sutcliffe
600 Montgomery Street
San Francisco, CA 94111

*Robert A. Wooldridge, Esquire
Worsham, Forsythe, Sampels
& Wooldridge
2001 Bryan Tower, Suite 3200
Dallas, Texas 75201

*W. G. Counsil
Executive Vice President
Texas Utilities Electric -
Generating Division
400 N. Olive, L.B. 81
Dallas, Texas 75201


Thomas A. Schmutz

Dated: April 21, 1988