

773

DOCUMENT CHANGE NOTICE (DCN)

DCN NO. 1

Page 1 of 2

Effective Date 10/26/89

I. Procedure Number NQA 3.09-11.03 Rev. 1 Change Proposed By Greg Bennetzen
Title: Receiving Inspection

II. The following change/revision is recommended.

a. Description of proposed change(s) See page 2 of 2 for proposed changes.

b. Justification for change(s) Clarification

c. List other documents/commitments affected by change(s) None

III. Training Requirements and Methodology:

Yes No
Manager QA

Yes No
Manager QC

Receiving Insp. LIII-1
Receiving Insp. LII-3

1. Self Study 2. Classroom Study 3. Other

Time Required for Training 2 Days

Quality Services Manager Jack Gallagher for JMG Date 9/20/89

IV. Remarks: Not applicable to QA. *3 TRAINING accomplished via signature of
Document Receipt TRANSMITTAL Form.

V. Approval:

Discipline Level III: [Signature] Date 9-20-89

CPE ASME Section XI Coordinator: N/A Date _____

(Concurrence)

Affected Section Manager: N/A Date _____

(Concurrence)

Responsible Section Manager: [Signature] Date 9.26.89

Director, Quality Assurance: [Signature] Date 10/6/89

A1.03/02 10/9/88

A-3

ATTACHMENT 8.B

Major Changes from Previous Revision

(Rev. 0 Updated to Rev. 1)

<u>Change No.</u>	<u>Section No.</u>	<u>Description of Change</u>
1	6.14.1	Added additional requirements for inspections pertaining to Stock Action Request(s).

NQA 3.09-11.03

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Date: AUG 25 1989
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ATTACHMENT 8.A

NCR TAG AND CONDITIONAL RELEASE TAGS

O
CPSES
NCR
DO NOT USE

NCR. NO. _____
ITEM _____
ID _____
COMMENTS _____

INSPECTOR _____ DATE _____
EST. NO _____

NCR NO. _____
ITEM NO. _____
COMMENTS _____
INSP/DATE _____

**DO NOT
REMOVE
WITHOUT
QC
AUTHORITY**

HEO 1.03-1.2

O
CPSES
NCR
DO NOT USE

NCR NO. _____
ITEM _____
ID _____
COMMENTS _____

INSPECTOR _____ DATE _____
EST. NO _____

NCR NO. _____
ITEM NO. _____
COMMENTS _____
INSP/DATE _____

O
CPSES

**CONDITIONAL
RELEASE**

**DO NOT REMOVE
WITHOUT QC
AUTHORITY**

00200 HEO 1.03

CONDITIONAL RELEASE
00200

NQA 3.09-11.03

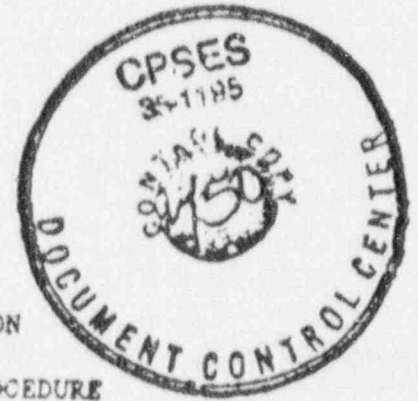
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DCN # 1

II. a. Description of proposed change(s):

- 1) Revise References 3.1 and 3.3 to read as follows:
 - 3.1 STA 608 "Control of Measuring and Test Equipment"
 - 3.3 NQA 3.09-9.02 "Inspection Reports/Inspection Plans"
- 2) Delete Note after paragraph 6.2.1.
- 3) Add new subparagraph 6.2.1.5 to read as follows:
 - 6.2.1.5 Q.C. Receiving shall transmit a copy of all unsatisfactory and satisfactory Quality Assurance required RIR/RR to the Procurement Quality Assurance Manager.
- 4) Add new subparagraph 6.2.1.6 to read as follows:
 - 6.2.1.6 Q.C. Receiving Level II/III shall complete a final review of Inspection Reports associated with Verification Plans in accordance with Reference 3.3.
- 5) Add Note to paragraph 6.8.2 to read as follows:

Note: Prior to releasing the item(s) Q.C. shall verify that the item(s) match the item description on the RIR copy in the Q.C. Receiving files.
- 6) Delete paragraph 6.12.2.1.L and renumber paragraph 6.12.2.1.M to 6.12.2.1.L.
- 7) Revise Figure 7.7 "Receiving Guidelines for Diesel Fuel Oil", as follows:
 - a) Delete paragraph D.
 - b) Revise alphabetical order of remaining paragraphs.
 - c) Revise Unit 1 to Unit 2 for Tank Spin numbers designated as CP2 in new paragraph F.
 - d) Revise new paragraph G to read as follows:
 - G. Attach test results furnished by the site Chemistry Department to the RIR/RR.

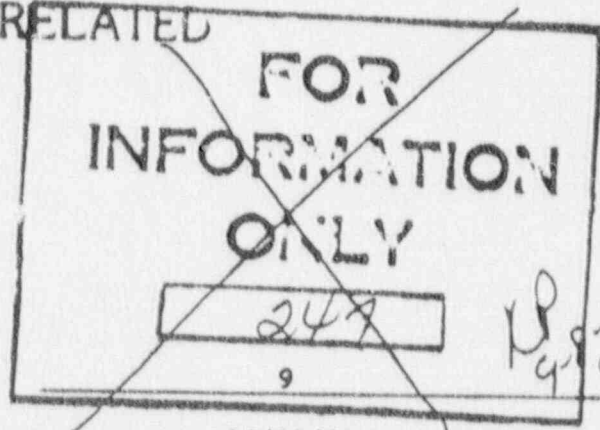


TU ELECTRIC - GENERATING DIVISION
NUCLEAR ENGINEERING AND OPERATIONS PROCEDURE

NEO 3.05

REPORTING AND CONTROL OF NONCONFORMANCES

QUALITY-RELATED



REVISION:

ISSUE DATE:

EFFECTIVE
DATE:

CONCURRENCE:

APPROVED:

06/23/89

06/26/89

[Signature]
Director, Quality Assurance

[Signature]
Executive Vice President,
Nuclear Engineering and
Operations

NUCLEAR ENGINEERING AND OPERATIONS PROCEDURE

NEO 3.05

REPORTING AND CONTROL OF NONCONFORMANCES

1.0 PURPOSE

The purpose of this procedure is to establish the responsibilities and requirements for the reporting and control of nonconformances at Comanche Peak Steam Electric Station (CPSES). Lower level procedures will be required to implement this procedure.

2.0 APPLICABILITY

- 2.1 This procedure applies to Texas Utilities - Generating Division Nuclear Engineering and Operations (NEO) Group and organizations providing support to the NEO Group.
- 2.2 This procedure is applicable to nonconformances on quality-related items.
- 2.3 Nonconformances identified by contractors shall be controlled in accordance with this procedure unless otherwise approved by TU Electric.
- 2.4 Affected organizations will assure that documents affected by this procedure (i.e., lower-level implementing procedures, plans, and policies) are developed/revised appropriately.
- 2.5 Nonconformance Reports (NCRs) shall not be processed as a design change document upon receipt of an Operating License for the unit affected by the NCR.
- 2.6 NCRs shall address hardware problems. Programmatic or procedural (paperwork) problems will be documented in accordance with Reference 3.4.

3.0 REFERENCES

- 3.1 NEO 2.09 - Consolidated Open Items Tracking Program.
- 3.2 NEO 3.01 - Corrective Action.
- 3.3 NEO 3.02 - Conditional Release.
- 3.4 NEO 3.06 - Reporting and Control of Deficiencies.
- 3.5 NEO 9.01 - Evaluation and Reporting of Adverse Conditions Under 10CFR21 and 10CFR50.55(e).

4.10 Originating Organization

The organization to which the person initiating the NCR is assigned (e.g., Construction Management, Quality Assurance, Engineering, Construction Contractor, Engineering Contractor, Nuclear Operations, etc.).

4.11 NCR Approval Authority

Those organizations assigned the responsibility of approving or invalidating Nonconformance Reports (NCRs).

4.11.1 ASME Section III Group (ASME III). NCRs that affect ASME Section III items as indicated in Block 10 of the NCR form shall be approved by Brown & Root ASME Quality Engineering except as specified by 6.2.1.1.

4.11.2 Operations Work Control Center (WCC). NCRs that affect items under the jurisdiction of Operations shall be approved by WCC.

4.11.3 Quality Assurance. Approval authority for NCRs not under the jurisdiction of ASME III or WCC.

4.12 Responsible Organization

The TU Electric organization (e.g., Construction Management or Nuclear Operations) or contractor who has been assigned the authority and responsibility to disposition Nonconformance Reports as "Rework" or "Scrap" followed by a replacement action for the affected items.

4.13 Invalid

The determination that no engineering requirement has been violated.

5.0 RESPONSIBILITIES

5.1 Senior Vice President

The Senior Vice President is responsible to ensure that policies, programs, or procedures, as required, are issued to implement the following responsibilities and requirements of this procedure:

5.1.1 Initiate NCRs for nonconformances identified by Engineering & Construction personnel.

5.1.2 Provide dispositions for NCRs, as required.

5.1.3 Provide engineering basis for technical acceptability of NCRs dispositioned as "Use-As-Is" or "Repair".

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- ↑
- 5.3.1 Initiate NCRs for nonconformances identified by Nuclear Engineering personnel.
 - 5.3.2 Review NCRs initiated on items that are not under the custody of Nuclear Operations for validity.
 - 5.3.3 Review NCRs to determine if a Corrective Action Request (CAR) is required in accordance with NEC 3.01, "Corrective Action" (Reference 3.2).
 - 5.3.4 Verify and inspect the implementation of NCR dispositions, as required.
 - 5.3.5 Conduct post review on NCRs for completeness and accuracy of documentation.
 - 5.3.6 Perform periodic NCR trend analyses.
 - 5.3.7 Implement assigned NCR dispositions.
 - 5.3.8 Review and approve dispositions provided for invalidating NCRs.
 - 5.3.9 Maintain this procedure current.




6.0 INSTRUCTIONS

Refer to Figure 7.1 which provides instructions for completing blocks on the NCR form, provided as Figure 7.2, referenced throughout this procedure.

6.1 General Requirements

- 6.1.1 An NCR shall be initiated in accordance with Section 6.2 when the following conditions are met:
 - a. A potentially nonconforming condition is identified and an approved method is not provided in the work, inspection or test procedures or program to document the condition; or
 - b. A potentially nonconforming condition has been identified and documented in accordance with approved procedures or programs (e.g., Inspection Reports, Work Orders or Test Deficiency Reports) and the identified condition cannot be corrected (reworked, scrapped or have subsequently become acceptable in accordance with generic Engineering documents, e.g., specifications, general drawing notes and typical details) to comply with existing engineering requirements in accordance with approved procedures.

can be repaired with NCR

- 6.1.9.1 A written justification for invalidating the NCR shall be provided in the space for disposition details (Block 15). This disposition shall be signed by the NCR Approval Authority in the "disposition submitted by" block (Block 17), and the original NCR forwarded via PC to QA. 
- 6.1.9.2 QA shall review the justification for invalidating an NCR. QA concurrence with the justification shall be signified in the disposition approval block (Block 18). If QA does not concur, additional justification shall be obtained from the NCR Approval Authority or the NCR revised to reinstate the NCR. 
- 6.1.9.3 NCRs having adequate justification for invalidation and approved by QA shall be closed in accordance with 6.6.1 and a copy forwarded to the originator. This includes NCRs dispositioned "Use-As-Is" this is not a nonconforming condition.
- 6.1.10 When a reported nonconforming condition is determined to be in conformance with engineering requirements after approval of the condition, as indicated by Block 13, the NCR shall be dispositioned "Use-As-Is" by Engineering and processed in accordance with 6.3.3. In this case, an engineering basis for technical acceptability need not be provided; however, a complete explanation regarding why the condition is conforming shall be provided.
- 6.1.11 Technical corrections (6.1.13 for administrative corrections) to an NCR shall be lined through once, dated and initialed by the individual making the correction. Entries shall not be erased, obliterated, or covered by "white out" or other means. Approval of these corrections shall be as follows:
- 6.1.11.1 Corrections made to information contained in Blocks 1 through 11 after approval, as indicated in Block 13, but prior to approval of the disposition, shall be initialed and dated by the appropriate NCR Approval Authority or an NCR revision shall be prepared in accordance with 6.1.12. 

2. Submittal of the original NCR to the appropriate organization for disposition
3. Submittal of a copy of the NCR to QA for trending and CAR review
4. Submittal of a copy of the NCR to the Licensing Compliance Manager for initial potential safety significance review.

NOTE

To facilitate post review of revised NCRs, information addressing cause of the revision should be annotated in Block 20 of the NCR Form.

6.1.12.2 If the revision alters the disposition block (Block 15) after approval of the disposition as indicated in Block 18, the individual initiating the revision shall:

- a) Complete Blocks 1 through 10 verbatim to the previous revision, and enter current revision number in Block 11. If Blocks 1 through 10 require correction(s), make necessary corrections in accordance with 6.1.12.1.
- b) Enter the previous NCR number and revision as a "Related Document" in Block 5.
- c) Print or sign name (legibly), and date Block 12.
- d) Complete approved block (Block 13) by entering a statement similar to: see previous revision for approval.
- e) Submit the original of the revised NCR to PC to obtain a revision number and to initiate the following:
 1. NCR Log update
 2. Submittal of the original NCR to the appropriate organization for disposition

6.1.14 IF it is determined that a nonconforming condition, documented on a valid NCR (except ASME III) can be reworked/scrapped in accordance with an existing program (i.e., Work Order, Room Area Punchlist (RAP)), the NCR may be closed by initiating the appropriate document.

6.1.14.1 Enter the following statement in the remarks/comment section of the NCR (Block 20) "This condition is being documented and reworked in accordance with ..." and provide the work document number.

6.1.14.2 Documents generated to allow the closure of the NCR shall reference the NCR number.

6.1.14.3 The NCR shall then be forwarded to QA for post-review.

6.2 NCR Initiation

6.2.1 When an NCR is required to be initiated, as described by 6.1.1, the originator and/or Originating Organization shall complete blocks 1 through 12, obtaining the NCR number from PC and forward the NCR to the appropriate NCR Approval Authority.

6.2.1.1 NCRs that affect ASME Section III items as indicated by block 10, except NCRs issued by Engineering for Design Deficiencies, shall be forwarded to Brown & Root ASME Quality Engineering for approval.

6.2.1.2 NCRs that affect items under Nuclear Operations jurisdiction shall be forwarded to the Work Control Center for approval.

6.2.1.3 Other NCRs shall be forwarded to Quality Assurance for approval.

NOTE

Assistance with determining the appropriate NCR Approval Authority may be obtained from the Work Control Center.

6.2.2 The NCR Approval Authority shall:

6.2.2.1 Review the NCR for accuracy completeness and validity, approve the NCR, if valid, and sign/date block 13. If NCR is invalid, process in accordance with 6.1.9.

6.3.2 Upon receipt of an NCR copy which has been dispositioned as "Rework" or "Scrap" by the Responsible Organization, Engineering shall:

6.3.2.1 Determine if the condition has adverse effects on safe operations, as defined by NEO 9.01, "Evaluation and Reporting of Adverse Conditions Under 10CFR21 and 10CFR50.55(e)" (Reference 3.5), and the conclusion in block 21 of the NCR, sign, and date in the space provided.

6.3.2.2 Forward the NCR copy to Quality Assurance for reconciliation with the original NCR upon closure as described by 6.6.1.

6.3.3 Upon origination or receipt of an NCR requiring disposition, Engineering shall review the nonconforming condition to determine the appropriate disposition.

6.3.3.1 Provide the appropriate disposition and complete blocks 15 through 18:

- a) If the NCR is dispositioned "Repair" or "Use-as-Is", ensure that the engineering basis for technical acceptability is provided.
- b) If the NCR is dispositioned as "Repair", ensure that additional Quality Assurance requirements, if any, are specified.

NOTE

The above requirements may be provided on the NCR or reference applicable design change documents.

6.3.3.2 Determine if the condition has adverse effects on safe operations, as defined by NEO 9.01, "Evaluation and Reporting of Adverse Conditions Under 10CFR21 and 10CFR50.55(e)" (Reference 3.5), record the conclusion in block 21, sign, and date in the space provided.

6.3.3.3 If the disposition is "Rework" or "Scrap", process the original NCR as follows:

- a) NCRs that affect ASME Section III items, as indicated by block 10, shall be forwarded via PC to Brown & Root ASME Quality Engineering for further processing as described in 6.3.4.

6.3.4.1 Assure that ASME QA program requirements related to nonconforming conditions and/or reports are complied with prior to future processing.

6.3.4.2 If the NCR is dispositioned "Use-As-Is", retain the NCR for closure in accordance with 6.6.1.

6.3.4.3 If the NCR is dispositioned "Rework", "Scrap" or "Repair", process as described in 6.4.1.

6.4 NCR Implementation

6.4.1 Upon approval of a NCR dispositioned as "Rework", "Scrap", or "Repair", the responsible organization shall ensure the generation of work documents and proper implementation of the disposition.

6.5 NCR Verification Inspection

6.5.1 The NCR shall be presented to Quality Assurance for verification/inspection of the NCR disposition. Upon satisfactory verification/inspection, Quality Assurance shall remove NCR tags, and Conditional Release tags, if applied, and sign/date block 19. Inspection documents, as required, shall be attached or referenced on the NCR.

6.5.2 If the rework/repair is unacceptable, the reperformance of work within the scope of the NCR disposition is acceptable provided that neither the original work performed nor the reperformance of work will alter the item such that the "Conditions/Details" of the NCR are no longer accurate. This determination shall be made by Quality Assurance.

6.5.3 When weld repair is unacceptable, no performance of work shall be attempted unless allowed by the NCR disposition. If additional repair is not allowed by the disposition, a new or revised NCR shall be initiated and a disposition obtained from Engineering prior to performing the additional repair.

6.5.4 If additional unsatisfactory conditions beyond the scope of the original NCR are identified during the inspection/verification process, they shall be addressed in accordance with governing programs.

6.5.5 Quality Assurance shall ensure that all documentation generated as a result of the NCR is attached, or referenced in block 20.

6.5.6 Brown & Root Quality Assurance shall process ASME Section III NCRs per 6.5.1 through 6.5.5 of this procedure.

9.0 RECORDS

1017

When completed, the following forms, reports, or other documents generated in response to this procedure shall be dispositioned in accordance with the Records Management Program Manual as directed by NEO 2.13, "Management of Nuclear Power Plant Records", and NEO 2.23, "Turnover of Nuclear Power Plant Records":

Nonconformance Reports and Attachments
Nonconformance Report Log

FIGURE 7.1

GENERAL INSTRUCTIONS FOR INITIATING AND PROCESSING NCRs

BLOCK NUMBER	ENTRY INSTRUCTION	RESPONSIBLE INDIVIDUAL/ORGANIZATION
11.	Obtain a NCR Number and/or Revision Number from PC: <u>EXAMPLE</u> NCR - 89 - 0000X Rev Y year sequential number	ORIGINATOR OR ORIGINATING ORGANIZATION
12.	Print or sign name (legibly) and enter date of initiation.	ORIGINATOR
13.	Review information in blocks 1 through 12 for completeness and accuracy. Determine if NCR is valid. Sign and date for approval if valid.	NCR APPROVAL AUTHORITY
14.	Determine if an Engineering disposition is required.	RESPONSIBLE ORGANIZATION
15.	Enter the disposition and specific action needed to correct the nonconformance. Figure 7.3 may be used for continuation, if required.	RESPONSIBLE ORGANIZATION OR ENGINEERING (SEE NOTE 1)
16.a	Determine if the NCR will be issued as a design change document.	RESPONSIBLE ORGANIZATION
16.b	If "No" is checked in block 16a, determine if a DCA is required. If "Yes" is checked in block 16b, enter the DCA number.	OR ENGINEERING
NOTE: If a "Rework" or "Scrap", disposition is assigned by the Responsible Organization, "No" shall always be indicated in blocks 16a and 16b. If dispositioned by Engineering, they shall make the determination for blocks 16a and 16b.		
17.	Sign and date for submittal of disposition.	RESPONSIBLE ORGANIZATION OR ENGINEERING

FIGURE 7.1

NOTES:

1. Engineering shall disposition all NCRs when a "Repair" or "Use-As-Is" disposition is needed.

The Responsible Organization may disposition NCRs as "Rework" or "Scrap".

2. The appropriate Engineering manager, or designee, shall approve NCRs dispositioned by Engineering personnel.

The appropriate Responsible Organization Manager, or designee, shall approve NCRs dispositioned by their organizations.

ASME Section III NCRs, except NCRs issued by Engineering for Design Deficiencies, require approval by Brown & Root Quality Engineering.

3. Engineering will document conclusion of the potentially safety significant review on the original NCR for those NCRs dispositioned by Engineering and on a copy or original of the NCR for those NCRs dispositioned by others. The NCR copy will be reconciled with the original NCR by Quality Assurance prior to closure.

FIGURE 7.3

NCR CONTINUATION SHEET

PAGE OF _____
REV _____

CONDITIONS/DETAILS:

DISPOSITION/DETAILS:

SAMPLE

ATTACHMENT 8.A

MAJOR CHANGES FROM PREVIOUS REVISIONS

(Rev. 8 updated to Rev. 9)

<u>Change No.</u>	<u>Section No.</u>	<u>Comments</u>
1	4.11	Add definition of "NCR Approval Authority"
2	5.2.6	Added V.P. Nuclear Operations responsibility for validating NCRs.
3	5.3.2	Added V.P. Nuclear Engineering responsibility for validating NCRs.
4	6.1.9, 6.1.9.1, 6.1.9.2, 6.1.11.1, 6.1.11.2, 6.1.12.1(d) 6.2.1, 6.2.2, Figure 7.1 (Step 13)	Reassigned the responsibility for approving NCRs from the originator's manager to the NCR approval authority.
5	6.1.14	Added provision for the use of work orders and room area punchlists to document nonconforming condition previously identified on (non-ASME III) NCRs.

ATTACHMENT 8.B

7. Block 14:
 - a. If the NCR has been generated from a Construction Deficiency Report (CDR), check Block 14 "Yes."
 - b. If the NCR has been generated from a CDR:
 - o Check Block 14 "Yes" and proceed to Step 9 if the NCR is being converted by Engineering.
 - o Leave Block 14 blank and forward to the Paper Flow Group (PFG) if the NCR is being converted by other than Engineering.
8. Continue to process in accordance with NEO 3.05.

TU ELECTRIC
NEO QUALITY ASSURANCE DEPARTMENT PROCEDURE
NQA-3.09-11.03



RECEIVING INSPECTION

~~CONTROLLED COPY~~
CONTROL NO. NQA-027

REVISION: 1

ISSUE DATE: August 24, 1989

EFFECTIVE DATE: August 25, 1989

APPROVED: *[Signature]* 8-21-89
NDE DISCIPLINE LEVEL III

APPROVED: *[Signature]*
DIRECTOR, QUALITY ASSURANCE

NEO QUALITY ASSURANCE DEPARTMENT PROCEDURE

NQA-3.09-11.03

RECEIVING INSPECTION

1.0 PURPOSE

The purpose of this procedure is to establish the requirements necessary to ensure that material, parts and equipment is receipt inspected and controlled in accordance with the applicable codes, standards, specifications, and procurement documents requirements.

2.0 APPLICABILITY

- 2.1 This procedure is applicable to the Quality Control section of the TU Electric NEO Quality Assurance Department.
- 2.2 Verification plan(s) are required for purchase orders initiated on or after 12/16/88.

3.0 REFERENCES

- 3.1 STA 608 "Control of Measuring and Test Equipment"
- 3.2 NQA 3.05 "Reporting and Control of Nonconformances"
- 3.3 NQA 3.09-9.02 "Inspection Reports/Inspection Plans"
- 3.4 NQA 1.16-2.04 "Inspection Personnel Certification Program"
- 3.5 ECE 6.08-11 "Vendor Inspection Checklist"
- 3.6 NQA 3.14 "Control of Vendor Activities"
- 3.7 WHS-009 "Receipt, Storage and Issues of Construction Material, Parts and Components"
- 3.8 WHS-003 "Issues and Returns"
- 3.9 NQA 2.13 "Quality Assurance Records Program"
- 3.10 WHS-001 "Receiving and Inspection of Material, Parts and Components"
- 3.11 ANSI N45.2.2-1972 "Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants"
- 3.12 NPP-6.1 "Transfer of Material, Parts or Components from Construction to Operations Stock"

4.0 DEFINITIONS

4.1 Quality Assurance (QA) Required Items and/or Services

Those items and/or services classified as safety related or affecting safety-related structures, systems, materials or components.

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4.2 Procurement Documents

Any document used to requisition items and services (e.g., Purchase Order (or contract), Requisition on Purchasing Department, Stock Action Request, Quality Assurance Report, Change Order, Vendor Inspection Checklists, Inspection Reports (IR) and associated checklists initiated to identify requirements for purchase and verify acceptance of an item).

4.3 Non-Safety Related Quality Assurance Required Items and/or Services

Items and/or services which are required to meet TU Electric commitments to quality attributes outside the requirements of 10 CFR 50, Appendix B.

4.4 Safety Related

Those plant features necessary to assure the integrity of the reactor coolant pressure boundary; the capability of safe reactor shutdown and the ability to maintain a safe shutdown condition; the capability to prevent or mitigate the consequences of nuclear incidents which could result in the release of radioactivity exceeding the limits as specified in CPSES Safety Analysis Report (SAR).

5.0 RESPONSIBILITIES

5.1 Manager, Quality Control

The Manager Quality Control is responsible for the implementation and maintenance of this procedure.

6.0 INSTRUCTIONS

6.1 General

6.1.1 Personnel Qualification

6.1.1.1 Inspection personnel shall be certified in accordance with Reference 3.4.

6.1.1.2 Detailed discipline type inspection, (e.g., electrical, mechanical, etc.) when required by the procurement documents shall be performed by discipline certified inspection personnel.

6.1.1.3 Material transfer and issuance of material may be performed by any Inspector who is currently certified by the T. U. Quality Control Section to perform inspections.

Inspections shall be in accordance with Section 6.8 for issuance and Section 6.11 for Material Transfer.

6.1.2 Measuring and Test Equipment (M&TE)

6.1.2.1 Measuring and Test Equipment required during receipt inspection shall be maintained in accordance with Reference 3.1.

6.1.2.2 The use of calibrated M&TE shall be documented by entering the M&TE number and calibration due date on the Receiving Inspection Report (RIR), Figure 7.1, or Inspection Report.

6.1.3 Nonconformances

6.1.3.1 Items which do not conform to the specified requirements shall be documented in accordance with Reference 3.2 and noted by reference on the RIR and IR when applicable.

6.1.3.2 Items shall be tagged using an "NCR Tag", Attachment 8.A to indicate the items which have unsatisfactory or incomplete receiving inspection. In the case of radioactive materials, the NCR Tag shall be applied to the door of the radiation protection engineering cage.

NOTE: A NCR Tag may be applied to the bins, boxes or other bulk item containers in lieu of tagging each piece.

6.1.3.3 When practical, nonconforming items shall be placed in a designated hold area until final disposition of the document. If it is not practical to segregate the item(s) from ready to issue items, the item(s) shall be clearly identified as nonconforming by using ropes, ribbons, signs or other visible markings.

6.1.4 Contingencies

6.1.4.1 Material/items received with a contingency, shown on Quality Assurance Release form as a "C" (contingency) shall be inspected to the requirements in paragraph 6.2. Items which

cannot be satisfactorily resolved shall be documented in accordance with paragraph 6.1.3. Note the reporting document number on the RIR/IR as applicable.

6.2 Inspection Requirements

6.2.1 Item(s) on purchase orders shall have Verification Plan(s) generated in accordance with Reference 3.3, containing Inspection Report(s) which specify the general and critical characteristics, and acceptance criteria requirements for Source Verification and Receipt Inspection. Inspection results shall be documented on the inspection report(s) contained in the Verification Plan. When documenting partial receipts, QC Receiving shall make a copy of the original Verification Plan and document as a partial receipt of the items and their acceptability on an IR continuation sheet. A Receiving Report number shall be recorded on the Verification Plan as obtained from the Receiving Report number log.

Example: 00001

_____ Sequential Number

6.2.1.1 When required by the Purchase Order, Commercial grade item(s) shall be inspected utilizing the standard Receipt Inspection Verification Plan No. VP-89-Standard.

6.2.1.2 Item(s) on purchase orders initiated prior to 12/16/88 shall be inspected to the requirements of the procurement documents, general attributes in paragraph 6.2.4 and assure the required documentation is present and acceptable. Inspection results shall be documented on a RIR, Figure 7.1 in accordance with paragraph 6.12.

6.2.1.3 A QA Acceptance Tag shall be completed in accordance with paragraph 6.12.2 for Quality Assurance required item(s). When required by the Procurement document a Code C Tag (Figure 7.8) shall be completed in accordance with Paragraph 6.12.2.2. Code C Tag(s) will be used for non-safety related Quality Assurance required item(s).

*Send IR #s
to accepted and
given
signed*

6.2.1.3.2 Bulk items being issued to satellite warehouses in which no QA Acceptance Tag/"C" Code Tag exists, shall be tagged prior to issuance.

6.2.1.3.2 Prior to tagging, Materials Engineering shall be contacted for all items that require additional research for material Q Code. Engineering shall issue a letter stating the material Q code, QC shall reference the letter number in the remarks block of tag and cross reference tag serial number on the letter and file the letter in the QC P.O. file.

6.2.1.3.3 QC Receiving shall attach a copy of all Tag(s) to the Receiving Inspection package.

NOTE: Subtier vendor shipments are acceptable for Westinghouse procured items providing documentation complies with the procurement documents.

6.2.1.4 Additionally, when receiving Limitorque Actuators, Battery Hydrometers and Diesel Fuel Oil the receiving inspector shall use the guidelines stated below:

Figure 7.5 Receiving Guidelines for
Limitorque Actuators
Figure 7.6 Receiving Guidelines for
Battery Hydrometers
Figure 7.7 Receiving Guidelines for
Diesel Fuel Oil

6.2.1.5 Q.C. Receiving shall transmit a copy of all unsatisfactory and satisfactory Quality Assurance required RIR/RR to the Procurement Quality Assurance Manager.

6.2.1.6 Q.C. Receiving Level II/III shall complete a final review of Inspection Reports associated with Verification Plans in accordance with Reference 3.3.

6.2.2 The Supplier/Vendor documentation review and acceptance is performed when source inspection is required. A Quality Assurance Release form (QAR) (Figure 7.2, Reference 3.6) accompanying the shipment is evidence of this review and acceptance. An Authorization for Shipment (QAA) (Figure 7.3, Reference 3.6) shall accompany shipment to indicate source inspection was waived, or unless otherwise stated in the procurement document as not required. The QAR or QAA shall be attached to the Receiving Inspection package.

6.2.3 Assure Westinghouse purchased items when required by the purchase order are accompanied by a Quality Release

(QR) form. If any attribute was waived on the QR, perform inspection and document results on a RIR/IR as applicable in accordance with paragraph 6.12.

6.2.4 As a minimum the following general attributes, as applicable shall be verified during receipt inspection for item(s) on purchase orders initiated prior to 12/16/88. Care shall be taken to avoid contamination of the item(s) during inspection. The inspection shall be performed in an area equivalent to level of storage required for the item.

NOTE: Visual inspection without unpacking is acceptable when items are packaged in separate transparent moisture-proof bags or envelopes.

6.2.4.1 Identification and Marking

- a. Verify identification and markings are in accordance with the procurement document requirements. Confirm the item type and model is as required by procurement documents.
- b. Identification marking may be either physically on the item, on a tag attached to the item or on a package containing the item. When the tag or package marking method is used, the item shall be inspected for conflicting marking.
- c. Identification is by part number or catalog number; however when the procurement documents specify an item by description only, the marking may be by description or purchase order line item number.

6.2.4.2 Corrosion Protection - Unless the package markings prohibit unpacking, inspect to verify specified packaging and shipping requirements have been maintained.

NOTE: Visual inspection without unpacking is acceptable when items are packaged in separate transparent moisture-proof bags or envelopes.

- a. Protective covers and seals: Visually inspect covers and seals to insure they meet their intended function (i.e., prevent contamination).
- b. Desiccant: Verify the presence of desiccant and that it is not saturated as indicated through the use of humidity indicators.
- c. Assure stainless steel items are not in direct contact with carbon steel, i.e., steel bandings, carbon steel tiedown bolts, etc.
- d. Coatings and Preservatives: Verify coatings and preservatives are applied when required by the procurement documents.

6.2.4.3 Physical Damage - Visually inspect to insure item parts are not loose, broken, cracked, missing, deformed or misaligned; and that accessible surfaces are free from gouges, dents, scratches and burns.

6.2.4.4 Cleanliness - Visually inspect accessible surfaces to ensure they are within procurement document limits for dirt, soil, mill scale, weld spatter, oil, grease, or stains. Unless required by procurement documents inspection for internal cleanliness is optional, if source surveillance was performed and temporary seals or coverings have not been disturbed.

NOTE: Insulation materials to be used on stainless steel surfaces requires a visual inspection for physical or water damage to shipping containers, to determine if insulation materials have been damaged/contaminated by external sources.

6.2.4.5 Inert Gas Blanket - Verify the inert gas blanket pressure is within the limits as specified by the procurement document(s).

6.2.4.6 Dimensions and Workmanship - Verify dimensions and workmanship to ensure conformance with procurement documents. Examples of dimension verifications

are: general configuration, overall external size. Examples of workmanship verification are: surface finishes and absence of damage.

6.2.4.7 Lubricants and Oils - Verify the presence of lubricants if required by procurement documents. Examples of characteristics are: proper oil levels, lubrication fittings and the presence of dry lubricants.

6.2.4.8 Physical Properties - Assure physical properties conform to specified requirements and, chemical and physical test reports (CMTR(s)), if required, meet the applicable code requirements. CMTR(s) shall be reviewed to ensure the following information (as applicable) appears on the test report:

- a. Material manufacturer's name.
- b. Vendor's Quality System Certificate (QSC) number and expiration date or TU Electric accepted QA program, revision number and date (for ASME Operations).
- c. Description of material including specification number, grade, class, type and nominal size as applicable.
- d. For pipe made to specifications which include both seamless and welded pipe, the report shall designate which type it is.
- e. Charpy V-notch test results, including test temperature, absorbed energy, lateral expansion, percent shear and location/orientation of the specimen used. The required test shall be as indicated by the material specification and/or the procurement documents.
- f. Heat treatment data - as required by material specifications.
- g. Results of other test, such as hardness and cone stripping as required by the material specifications.
- h. Review chemical and physical analysis against material specification.

6.3 Vendor Inspection Checklist (VIC)

6.3.1 Vendor Inspection Checklists (Figure 7.1, Reference 3.5) shall be developed by Engineering in accordance with Reference 3.5. These checklists contain specific inspection attributes to be verified during source inspection at the vendor facilities in accordance with Reference 3.6 and receipt inspection attributes to be verified during receipt inspection and documented on the VIC.

6.3.2 If attributes were waived during source inspection, the attributes shall be inspected and documented on the VIC as applicable during receipt inspection. The VIC shall be attached to the RIR.

6.4 Manufacture/Supplier Documentation

6.4.1 Assure all documentation required by the procurement documents has been provided. Review all documentation accompanying the shipments for correctness and completeness. Perform this review using the procurement documents. Document nonconformances in accordance with paragraph 6.1.3.

6.4.1.1 The following additional documentation reviews shall be performed for the procurement of ASME items (as applicable):

1. Verify certification to ASME Section III applicable Code Edition and Addenda has been provided.
2. If a Code Case is used, verify documentation submitted by vendor references the Code Case Number.
3. ASME Code Data Reports, if required by procurement documents, shall be reviewed as follows:
 - a. Verify that all information stamped on the Code nameplate of the item is in agreement with the corresponding information shown on the Data Report.
 - b. Verify that the Data report has been signed by the manufacturer's representative and the Authorized

Nuclear Inspector (ANI), and includes the ANI's State or National Board commission number.

- c. Verify that the Data Report does not have any corrections by use of cross-offs, erasures, print-overs, written additional indications, or white-outs.

For Data Reports which have been corrected by revision, the report shall be clean of marking, normally marked "Corrected Report" in the upper left hand corner, and the corrections explained under "Remarks". The Data Report will be signed and dated by the manufacturer and the ANI after such revision has taken place.

- d. Verify that all spaces on the Data Report have been completed as required.
 - e. Verify that the Code Class, Code Addenda, Code Cases, date and other technical information agree with the requirements of the purchase order, specifications, etc.
 - f. Verify that the Certificate of Authorization number and expiration date are listed, and the Data Report has been certified prior to the expiration date.
4. If a valve has been procured, verify the valve is indicated on the Valve Weight List. If the valve is not on the Valve Weight List, the Receiving Inspector shall witness the weighting of the valve and document on the RIR/IR as applicable the valve description, serial/tag number and weight. A copy of the RIR/IR shall then be transmitted to Comanche Peak Engineering, Mechanical Equipment Supervisor.

6.5 Special Handling/Inspection Required

- 6.5.1 Under certain circumstances it may not be possible or practical to perform a complete inspection upon receipt of an item. Specific handling requirements may also be applicable or certain items may require review and approval prior to issue. Any special inspection, handling, or approval requirements shall be identified in the procurement documents and specified when they are to be conducted.
- 6.5.2 When applicable, a Special Inspection/Handling Required Tag (Figure 7.4) shall be completed by personnel performing receipt inspection describing the inspection, handling, or approval requirements noted in the procurement documents and attached to the item. The item may be placed in normal storage pending the resolution of these requirements.
- 6.5.3 A Receiving Inspection Report may be closed even though a Special Inspection/Handling Required Tag is applicable, if other inspection criteria is satisfactory.
- 6.5.4 If the Special Inspection/Handling Required Tag directs a specific inspection be accomplished prior to issuing the item, it shall be accomplished and documented by supplementing the applicable RIR/IR. The Special Inspection/Handling Required Tag shall remain with the item until the requirement(s) have been accomplished, and then filed with the RIR/IR as applicable.
- 6.5.5 If a Special Inspection/Handling Required Tag directs specific review and approval prior to issue, warehouse personnel shall process the item in accordance with Reference 3.7 for Construction or Reference 3.8 for Operations.
- 6.5.6 Physical hardware verification inspection of radioactive material shall not be performed until the Health Physics department has performed their required inspections. Promptly notify Operations Health Physics department or the contractors radiation safety office, as applicable, so they may inspect shipment. Receiving inspector shall verify the documentation in accordance with paragraph 6.4 and document on RIR/IR as applicable. A copy of Operations Health Physics Department Form No. HPI-212-2 shall be attached to the Receiving Inspection package.

6.6 Color Coding

- 6.6.1 Receiving inspectors shall authorize when applicable, the warehouse personnel, to color code by issuing Figure 7.2. Color coding shall be in accordance with drawing FSM-00101 and TNE-11-0075.

NOTE: Color coding is applicable only for items received for construction.

6.7 Heat Number Card File

- 6.7.1 A heat number card shall be completed by the receiving inspector for each heat number/code number of acceptable material received, and a copy of the card forwarded to the QC inspectors in the applicable fabrication shop.

NOTE: Heat card is applicable only for items received for construction in which heat number traceability is required.

6.8 Issuance of Items

- 6.8.1 Warehouse Issue Request (WIR) Form WHS-003-2 (Figure 7.4, Reference 3.8) for quality required items shall be verified by a QC Inspector prior to release, when the item(s) do not have a QA Acceptance Tag. Verification shall be documented by initials and date in the QA Tag number block.

- 6.8.2 WIR shall include the following information as applicable:

- a. Work document no.
- b. Material to be used on
- c. TSN no., heat no., serial no.
- d. Quantity requested and issued
- e. Item description, color code
- f. Purchase order no., RIR no. (not required for Bulk Items)
- g. QA Tag no.

NOTE: Prior to releasing the item(s) Q.C. shall verify that the item(s) match the item description on the RIR copy in the Q.C. Receiving files.

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6.9 Hardened Washers

Hardened washers, for bolts 1/2 inch and larger in diameter, must be identified by star stamping prior to QC acceptance and QA acceptance tagging. QC shall verify that craft has stamped each washer. Verification shall be documented by completing a QA Acceptance Tag in accordance with Paragraph 6.12.2.

NOTE: Star stamp shall be controlled by Q.C.

6.10 Return to Warehouse

6.10.1 Quality required item(s) returned to the warehouse without a QA Acceptance Tag requires QC Receiving to verify acceptability of the item(s).

6.10.2 Item(s) shall be returned to the warehouse using a Return to Warehouse Form WHS-003-4 (Figure 7.6, Reference 3.8). Item(s) requiring QC Receiving verification shall be inspected using the following criteria as applicable:

- a. Work document no.
- b. TSN no., heat no., serial no.
- c. Item description, color code
- d. Quantity
- e. Purchase order no., RIR no.
- f. Visually examine physical condition (e.g., damage rust)
- g. Marking identification on the item

6.10.3 Acceptability of the items returned to the warehouse shall be documented by the QC receiving inspector initials and date in the QA Tag number block.

6.11 Material Transferred into TU Material Management System

6.11.1 This section applies to material purchased for construction and presently stored in the construction warehouse system that has been designated for classification in accordance with Material Management System (MMS).

6.11.2 QC Receiving will receive Form PUR-006-2 and a Verification Plan when applicable. QC Receiving shall inspect the subject material verifying the attributes required by the Verification Plan IR(s) when applicable, or inspect using the following criteria as applicable:

- a. Item description
- b. Marking identification on the item/container
- c. Purchase order no., RIR/RR no.
- d. Visually examine physical condition (e.g., damage, rust).

6.11.2.1 QC shall document acceptable verification(s) for item(s) that do not have a Verification Plan on a QA Acceptance Tag/"C" Code Tag as applicable.

NOTE: When filling out QA/"C" Code tag(s) record the original RIR/RR number, line item number and form PUR-006-2 document number.

6.11.2.2 A QA Acceptance Tag shall be completed in accordance with Paragraph 6.12.2.1 for all QA required items. When required by procurement document/PUR-006-2 form a C Code Tag (Figure 7.8) shall be completed in accordance with Paragraph 6.12.2.2 for non-safety related QA required items requiring QC Receiving Inspection.

6.11.2.2.1 QC Receiving shall place a copy of the Tag(s) in the QC purchase order files, and attach a copy to form PUR-006-2/Verification Plan as applicable.

6.11.2.3 QC Receiving shall transmit a copy of the CPSES Records Turnover Transmittals for material transfers to the Materials Control Group.

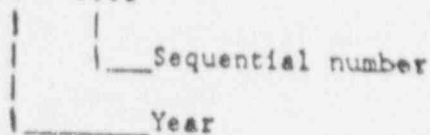
6.12 Inspection Documents

6.12.1 Q.C. Receiving Inspector shall complete the Receiving Inspection Report Figure 7.1 as follows:

- a. P.O. Number - Enter the applicable purchase order number.

- b. MRE - Enter the material receiving record number.
- c. RIR Number - Enter the next sequential number obtained from the RIR number log.

Example: 88 - 0001



- d. M&TE Number(s) - Enter M&TE number and calibration due date when used to perform inspection.
- e. Item Number - Enter a number for each separate item inspected.
- f. Quantity - Enter the quantity inspected
- g. Item Description - Enter a brief description of the item received, including ASME Code Class if applicable.
- h. Identification Number - Enter the identification number of the item being received (e.g., TU Electric Stock number (TSN), heat number, serial numbers, QA Tag numbers, etc..).
- i. SAT/UNSAT - If the quality characteristic is checked "UNSAT" record the item number and the discrepancy in the Remarks section and attach an "NCR Tag", Attachment 8A.

NOTE: Low cost items (fuses, gaskets, O-rings, etc.) which are received and found to be damaged, may be scrapped. Document items scrapped.

- j. QC Initials/Date - Enter initials and date in this column.
- k. Remarks - Enter any pertinent information in this section (i.e., shelf life tag placement, QA Acceptance Tag Number(s)).

6.12.1.1 Upon satisfactory resolution of the discrepancy, the appropriate block of the reinspection section on the RIR shall be checked initialed and dated; and NCR Tag removed.

6.12.1.2 The RIR may be closed when:

- a. All items listed on the report(s) are marked "SAT" and items have been placed in the required storage level.
- b. All "UNSAT" items have a nonconformance report written for the unsatisfactory condition. The NCR number shall be referenced on the RIR and IR when applicable.

6.12.1.3 A Receiving Inspection Report shall be reviewed and closed by a Level II or Level III Receiving Inspector. Review the report to verify completeness and accuracy, check the "IR Closed" block, sign and date the report.

6.12.2 Items received and found to be in conformance with the procurement documents shall have a QA Acceptance Tag/ Code Tag attached (similar to Figure 7.3/Figure 7.8).

6.12.2.1 The QA Acceptance Tag shall be completed as follows:

- a. Purchase Order Number - Enter the applicable purchase order number.
- b. Item Number - Enter the purchase order item number.
- c. Date Received - Enter the date the receipt inspection was completed and the initials of the individual performing receipt inspection.
- d. Issue Number and Date - Leave blank.
- e. TSN - Enter the TU Electric Stock Number. Enter N/A for a Direct Charge Item.
- f. Do Not Use After This Date - Enter limited shelf life expiration date otherwise, enter N/A.
- g. Part Number - Enter the part number, model number or serial number of the item.
- h. Heat Number - Enter the applicable heat number otherwise enter N/A.

- i. Description - Enter the description of the item.
- j. Use - Enter N/A.
- k. Removed By - Leave blank.
- l. Remarks - Enter the RIR/RR/NCR number as applicable. For ASME items identify the code class. Also enter any applicable information.

6.12.2.2 The C Code Tag shall be completed as follows:

- a. Purchase Order Number - Enter the applicable purchase order number.
- b. Item Number - Enter the purchase order item number.
- c. Verification Plan Number - Enter the verification plan number.
- d. RR/RIR - Enter the Receiving Report number/Receiving Inspection Report number.
- e. Quality Control Inspector - QC Inspector, sign and date.
- f. Remarks - Enter any applicable information.

6.12.2.3 The QA Acceptance Tag/C Code Tag shall normally be secured to the item until installation. For lot shipment of the like items such as nuts, bolts, etc., the tag shall be attached to the container or bin holding the items. Different lot shipments of identical items shall not be mixed.

6.13 Repaired Stock Items Returned to Warehouse Inventory

- 6.13.1 A new RIR shall be completed and reference the original RIR, purchase order number and original QA Acceptance Tag. A copy of form PUR-002-1 shall be attached to the new Receiving Inspection package with all attachments.

6.14 Stock Action Request

6.14.1 Upon receipt of a Stock Action Request Form PUR-002-1 and a Verification Plan. QC Receiving shall inspect the subject material verifying the attributes required by the Verification Plan IR(s) when applicable. If no Verification Plan exists inspect using the following criteria as applicable:

- a. Item description
- b. Marking identification on the item/container
- c. Purchase order number, RIR/RR no.
- d. Visually examine physical condition (e.g., damage, rust).

6.14.1.1 QC shall document acceptable verification(s) for item(s) that do not have a Verification Plan on a QA Acceptance Tag/"C" Code Tag as applicable in accordance with paragraph 6.12.2.1 for all QA required items or paragraph 6.12.2.2 for non-safety related QA required items.

NOTE: When filling out QA/"C" Code Tag(s), record the original RIR/RR number line item number and form PUR-002-1 document number. Place a copy of Tag(s) in the QC P.O. files and a copy to form PUR-002-1/Verification Plan as applicable.

6.15 Undesignated Spares

When an item is identified by the procurement documents as an undesignated spare, attach a Special Inspection/Handling Required Tag which states that engineering approval must be obtained prior to the item being released from the warehouse.

7.0 FIGURES

- 7.1 Receiving Inspection Report
- 7.2 Color Code Authorization
- 7.3 QA Acceptance Tag
- 7.4 Special Inspection/Handling Required Tag
- 7.5 Receiving Guidelines for Limitorque Actuators
- 7.6 Receiving Guidelines for Battery Hydrometers
- 7.7 Receiving Guidelines for Diesel Fuel Oil
- 7.8 C Code Tag

8.0 ATTACHMENTS

8.A NCR Tag

8.B Major Changes from Previous Revision

9.0 RECORDS

9.1 When completed the following forms and documents generated in response to this procedure shall be dispositions to TU Electric Records Management in accordance with Reference 3.9.

Receiving Inspection Report

Verification Plan

Form PUR-006-2

FIGURE 7.2

COLOR CODE AUTHORIZATION

The following material has been checked by QC Receiving and found to be acceptable. Color coding may be applied by Receiving.

P.O. _____ MRR _____

EXCEPTIONS: _____

QC ENGINEER/INSPECTOR

FIGURE 7.3

QA ACCEPTANCE TAG

SERIAL NO. _____

QA

THIS ITEM ACCEPTABLE FOR USE

PURCHASE ORDER NO.	ITEM NO.
DATE RECEIVED	INITIALS
ISSUE NO. & DATE	INITIALS
YES	DO NOT USE AFTER THIS DATE
PART NO.	
HEAT NO.	
DESCRIPTION	
USE	
REMOVED BY	NAR
REMARKS:	

DATE OF ISSUE	QTY	NAR NO.

FIGURE 7.4

SPECIAL INSPECTION/HANDLING REQUIRED TAG

1-0442

SPECIAL INSPECTION/HANDLING REQUIRED TAG

ITEM DESCRIPTION _____

PART NO. _____ NEAT NO. _____

P.O. NO. _____ DATE RECEIVED _____

IN NO. _____ INV NO. _____

REMARKS _____

Removed From Warehouse By | W/O NO. | TSN

W/O No.
TSN

FIGURE 7.5

RECEIVING GUIDELINES FOR LIMITORQUE ACTUATORS

LIMITORQUE ACTUATORS

- A. Check the actuator serial number for all motor operators and motor operated valves for the following:
- B. Check to see if the actuator was manufactured by Limitorque and identifies a serial number of 391582 through 396463.

If so contact the Results Engineering Supervisor and attach a Special Inspection/Handling Required Tag stating the following:

Do not issue from the warehouse unless authorized by Results Engineering.

FIGURE 7.6

RECEIVING GUIDELINES FOR BATTERY HYDROMETERS

BATTERY HYDROMETERS

- A. Transmit hydrometers to Chemistry and Health Physics (CHP) lab to verify accuracy in accordance with Chemistry Laboratory Instruction No. 650.
- B. Upon receipt of hydrometers from CHP lab, verify number sent and number received, and CHP test reports.
- C. Using CHP test reports, verify hydrometers calculated percent deviation is less than 0.5%. All hydrometers which do not meet the 0.5% requirement shall be handled in accordance with paragraph 6.1.3.
- D. All hydrometers which meet the above requirements shall be tagged with a "Calibrated Q" sticker as shown in STA-608. The following information shall be recorded on the tag:
 1. Tag. No. - Tag number will be the RIR number followed by a two-digit sequential number (i.e., RIR-88-0001-01). Also, record the number on the calibration report.
 2. Calibration Due Date - Enter N/A for not applicable.
 3. By/Date - Initial and date of the Receiving Inspector applying sticker.

FIGURE 7.7

RECEIVING GUIDELINES FOR DIESEL FUEL OIL

RECEIPT OF DIESEL FUEL OIL

- A. Upon arrival of each shipment to verify cleanliness of nozzle before fuel transfer.
- B. Notify the Chemistry Department upon arrival of each shipment of fuel to obtain samples in accordance with CHM-707.
- C. Notify the control room and request an Auxiliary Operator to open and close the diesel tank filler valve.
- D. Prior to unloading fuel, tests for the properties listed below shall be conducted by the site Chemistry Department. The minimum requirements shall be in accordance with the tests specified below.

<u>TESTS</u>	<u>LIMITS</u>	
	Minimum	Maximum
Absolute Specific Gravity	0.83	0.89
Viscosity Kinematic at 40°C	1.9 cst	4.1 cst
Flash Point	52°C (125°F)	
Clear and Bright appearance		

- E. Verify that test results for the above do not exceed the limits specified. If test results are acceptable, proceed with unloading of fuel.

NOTE: If any limit exceed, the fuel shall not be unloaded and should be returned to the vendor.

FIGURE 7.7 (continued)

RECEIVING GUIDELINES FOR DIESEL FUEL OIL

- F. Document the quantity of fuel oil unloaded and the specific storage tank(s) to which it was added. The specific storage tank(s) should be identified by the following tag numbers.

DIESEL GENERATOR FUEL OIL STORAGE TANKS

Unit 1, Tank #1 - Tag No. CP1-DOATST-01
Unit 1, Tank #2 - Tag No. CP1-DOATST-02
Unit 2, Tank #3 - Tag No. CP2-DOATST-01
Unit 2, Tank #4 - Tag No. CP2-DOATST-02

DAY TANKS

Unit 1, Tank #1 - Tag No. CP1-DOATDT-01
Unit 1, Tank #2 - Tag No. CP1-DOATDT-02
Unit 2, Tank #3 - Tag No. CP2-DOATDT-01
Unit 2, Tank #4 - Tag No. CP2-DOATDT-02

FUEL TANK FOR FIRE PROTECTION DIESEL ENGINE

Tag No. - CPX-FPATDE-01

- G. Attach test results furnished by the site Chemistry Department to the RIR/RR.

FIGURE 7.8

C Code Tag

SERIAL NO C-000001

C CODE TAG

PURCHASE ORDER NO	LINE ITEM NO
VERIFICATION PLAN NO	RRY31E
QUALITY CONTROL INSPECTOR	DATE
REMARKS	

DATE OF ISSUE	QTY	WR NO.

5.2 Manager, Quality Control

5.2.1 The Manager, Quality Control is responsible for and has assigned the following duties to the Managers within the QC Section:

- a. Verify and inspect the implementation of NCR dispositions, as required.
- b. Implement assigned NCR dispositions.

5.2.2 The Manager, Quality Control is responsible for:

- a. Review and approval of dispositions for invalidating NCRs.
- b. Conduct Post Review of NCRs.

5.2.3 The Manager, Quality Control is responsible for reviewing NCRs on items that are not under the custody of Nuclear Operations, for validity. He has assigned this duty to the Unit QC Manager/designee.

6.0 INSTRUCTIONS

6.1 General

Refer to Figure 7.1 which provides instructions for completing the blocks on the NCR form (Figures 7.2 and 7.3) referenced throughout this procedure.

6.1.1 A Nonconformance Report shall be initiated when the following conditions are met:

- a. A potentially nonconforming condition is identified and an approved method is not provided in the work, inspection, or test procedures or program to document the condition; or
- b. A potentially nonconforming condition has been identified and documented in accordance with approved procedures or programs such as Inspection Reports, Work Orders, or Test Deficiency Reports and the identified condition cannot be corrected (reworked, scrapped, or have subsequently become acceptable in accordance with generic Engineering documents, e.g., specifications, general drawing notes and typical details) to comply with existing engineering requirements in accordance with approved procedures.

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Inspections shall be in accordance with Section 6.8 for issuance and Section 6.11 for Material Transfer.

6.1.2 Measuring and Test Equipment (M&TE)

6.1.2.1 Measuring and Test Equipment required during receipt inspection shall be maintained in accordance with Reference 3.1.

6.1.2.2 The use of calibrated M&TE shall be documented by entering the M&TE number and calibration due date on the Receiving Inspection Report (RIR), Figure 7.1, or Inspection Report.

6.1.3 Nonconformances

6.1.3.1 Items which do not conform to the specified requirements shall be documented in accordance with Reference 3.2 and noted by reference on the RIR and IR when applicable.

6.1.3.2 Items shall be tagged using an "NCR Tag", Attachment 8.A to indicate the items which have unsatisfactory or incomplete receiving inspection. In the case of radioactive materials, the NCR Tag shall be applied to the door of the radiation protection engineering cage.

NOTE: A NCR Tag may be applied to the bins, boxes or other bulk item containers in lieu of tagging each piece.

6.1.3.3 When practical, nonconforming items shall be placed in a designated hold area until final disposition of the document. If it is not practical to segregate the item(s) from ready to issue items, the item(s) shall be clearly identified as nonconforming by using ropes, ribbons, signs or other visible markings.

6.1.4 Contingencies

6.1.4.1 Material/items received with a contingency, shown on Quality Assurance Release form as a "C" (contingency) shall be inspected to the requirements in paragraph 6.2. Items which

TUELECTRIC

John F. Strasser
Director, Quality Assurance

To: ALL QUALITY ASSURANCE DEPARTMENT
PERSONNEL (TU ELECTRIC AND
TU ELECTRIC QA CONTRACTORS)

April 22, 1988

Subject: QA Department Policy Regarding
Reduction of Quality Assurance
Contractor Workforce

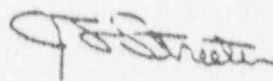
As we approach completion of construction at Comanche Peak it will be necessary to reduce the Quality Assurance Department workforce in areas where the work is declining. This ROF Policy which is effective May 1, 1988 has been designed to help us achieve that goal in an objective and fair manner while leaving an adequate workforce for completion of the remaining work. All contractor personnel working within the Quality Assurance Department are subject to this ROF Policy except: supervisors; personnel working under a "scope of work" contract; and, personnel who are working under the applicable contract provisions for short term assignment and are receiving subsistence reimbursement. Contractor personnel working in a given Quality Assurance Department activity area will be compared only to employees in the same activity area. Reduction of force will be implemented only after the responsible Quality Assurance Department Section Manager has approved the activity area having workforces in need of reductions and the sizes of the needed reductions. Following are the criteria that will be utilized in implementing this ROF Policy.

1. The activity areas shall be identified that are overstaffed and in which the level of work is not expected to increase substantially in the foreseeable future. Each supervisor immediately subordinate to the responsible Section Manager shall be responsible for identifying those activity areas and specifying the number of personnel to be reduced. This information shall be reported to the responsible Section Manager.

Contractor personnel subject to ROF shall be those assigned at the time of reduction to the activity areas identified for ROF. An "activity area" is defined as: "the lowest organizational unit(s) performing the same or similar related activity, in which the affected personnel are conducting those activities based on a common set of qualification prerequisites." Some examples of activity areas are Unit 1 Cable Tray Panger As-Built Inspection, Unit 2 Conduit Raceway Inspection, Structural Inspection, Construction Surveillance, and Corrective Action Group.

A-2 RECEIVED
APR 29 1988

- Hiller
J. F. Streeter
2. Certain contractor personnel have been employed for specifically defined purposes and/or possess unique skills that are necessary for completion of project work. Those individuals shall be exempted from ROP as long as some part of their function remains to be performed. Such people and the specific skill or function that requires their exemption shall be identified to the responsible Section Manager.
 3. Certain contractor personnel have multiple activity certifications that may be advantageous for the completion of the project. Those individuals shall be exempted from ROP as long as the need for their multiple certifications continue to exist. Such people and the specific multiple activity certifications that require their exemption shall be identified to the responsible Section Manager.
 4. Contractor personnel selected for ROP shall be selected based on the length of uninterrupted service within the Comanche Peak Quality Assurance Department. Individuals with the greatest uninterrupted service within the Comanche Peak Quality Assurance Department shall be the last released, except where:
 - i. The billing rate of individuals in the same activity area is different. In such case, the individual with the higher billing rate will be the first released.
 - ii. The individual to be released has demonstrated clearly superior job knowledge, performance, and attendance in comparison to individuals with greater uninterrupted service.In cases of individuals having equal uninterrupted service and not affected by i and ii above, releases shall be based on alphabetical order (i.e., Z first, A last).
 5. All selections are to be made without regard to race, religion, sex, national origin, age, or nondisqualifying handicap. Selection for release shall not be made based on individuals having expressed concerns.



J. F. Streeter
Director of Quality Assurance

NONCONFORMANCE REPORT

ONCE 89 11452 REV 0 PAGE 1 OF 1

① UNIT NUMBER 1	② COMPONENT ID NUMBER P.O. 665-71871	③ SUBCOMPONENT ID NUMBER N/A	④ SYSTEM/SUBSYSTEM NUMBER GEN. DOC.	⑤ RELATED DOCUMENTS VP-89-2092
⑥ DOCUMENTS/CODES VIOLATED NBA 509-11.03 REV 1		⑦ TYPE D - DRAWING S - SPEC. P - PROC. C - CODE WHSE A N/A	⑧ BUILDING ELEVATION ROOM NO. 	# 3

⑨ CONDITIONS/DETAILS PER LINE NO 1 ON ATTACHMENT 3 OF VP-89-2092 STATES FOR THE THERMOLAG CONDUIT SECTIONS TO HAVE A THICKNESS RANGE OF 1/2" MIN AND 3/4" MAX. 49.5 LF DO NOT MEET THE 1/2" MIN. TOLERANCE LOWEST READING OBTAINED WAS 3/8"

32
FOR ITEM # ONLY

⑩ DISCIPLINE CODE <input type="checkbox"/> I <input checked="" type="checkbox"/> E <input type="checkbox"/> C <input type="checkbox"/> M	HOLD TAG APPLIED		
⑪ ASME SECTION III <input type="checkbox"/>	⑫ ORIGINATOR FORBIE L. HARPER JR. EXT 7156	HQ 345	⑬ ENGINEERING DISPOSITION REQUIRED <input type="checkbox"/> YES <input type="checkbox"/> NO
⑪ ASME SECTION XI <input type="checkbox"/>	⑬ APPROVED BY <i>[Signature]</i>	DATE 11-3-89	DATE 11-3-89
⑪ NON ASME <input checked="" type="checkbox"/>	⑭ DISPOSITION DETAILS <input type="checkbox"/> REWORK <input checked="" type="checkbox"/> SCRAP <input type="checkbox"/> REPAIR <input type="checkbox"/> USE AS-IS		

No fine through
written and set
for change made

⑭ IS NCR A DESIGN CHANGE DOCUMENT? <input type="checkbox"/> YES <input type="checkbox"/> NO	⑮ DISPOSITION SUBMITTED BY	DATE
⑭ IF 16A IS "NO", IS DCA REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES" DCA# _____	⑯ DISPOSITION APPROVED	DATE
⑯ QUALITY CONTROL VERIFICATION		DATE

⑰ REMARKS/COMMENTS

A-4

⑱ POTENTIALLY SAFETY SIGNIFICANT <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SN# _____ SIGNATURE/DATE _____	⑲ POST REVIEW	DATE
---	---------------	------

① UNIT NUMBER 1	② COMPONENT ID NUMBER P.O. 665-71871	③ SUBCOMPONENT ID NUMBER N/A	④ SYSTEM/SUBSYSTEM NUMBER GEN. DOC.	⑤ RELATED DOCUMENTS VP-89-2092
⑥ DOCUMENTS/CODES VIOLATED NSA 309-11.03 REV 1		TYPE D - DRAWING S - SPEC. P - PROC. C - CODE	⑦ BUILDING WHSE	ELEVATION A
			ROOM NO. N/A	

⑧ CONDITIONS/DETAILS PER LINE NO 1 ON ATTACHMENT 3 OF VP-89-2092 STATES FOR THE THERMOLAG CONDUIT SECTIONS TO HAVE A THICKNESS RANGE OF 1/2 MIN AND 3/4" MAX. 49.5 LF DO NOT MEET THE 1/2 MIN. TOLERANCE LOWEST READING OBTAINED WAS 3/8"

FOR ITEM 31 ONLY

⑨ DISCIPLINE CODE <input type="checkbox"/> I <input checked="" type="checkbox"/> E <input type="checkbox"/> C <input type="checkbox"/> M	HOLD TAG APPLIED		
⑩ ASME SECTION III <input type="checkbox"/>	⑫ ORIGINATOR FORBIE L. HARPER, JR. EXT 7156	HQ 345	DATE 11-3-89
ASME SECTION XI <input type="checkbox"/>	⑬ APPROVED BY <i>[Signature]</i>		DATE 11-3-89
NON ASME <input checked="" type="checkbox"/>			⑭ ENGINEERING DISPOSITION REQUIRED <input type="checkbox"/> YES <input type="checkbox"/> NO
⑮ DISPOSITION DETAILS	<input type="checkbox"/> REWORK	<input checked="" type="checkbox"/> SCRAP	<input type="checkbox"/> REPAIR <input type="checkbox"/> USE AS-IS

Insured should be 32 will be revised

⑯ IS NCR A DESIGN CHANGE DOCUMENT? <input type="checkbox"/> YES <input type="checkbox"/> NO	⑰ DISPOSITION SUBMITTED BY _____ DATE _____
⑰ IF 16A IS "NO", IS A DCA REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", DCA# _____	
⑱ DISPOSITION APPROVED _____ DATE _____	⑲ QUALITY CONTROL VERIFICATION _____ DATE _____

⑳ REMARKS/COMMENTS

㉑ POTENTIALLY SAFETY SIGNIFICANT <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, S/N# _____ SIGNATURE/DATE _____	㉒ POST REVIEW _____ DATE _____
--	--------------------------------

RR No. _____ Verification Plan No. 89-2092 Page 1 of 1

TSN N/A Vendor THERMAL SCIENCE INC. P.O. No. 665-71871 Line Item No. 15 - 25 32

Component Tag No. N/A Part No. N/A

Description SEE PAGE 4 & 5

Acceptance Method	Implementing Documentation
✓ Special Tests and Inspection	SEE PAGES 2 → 8 PLUS ATTACHMENTS 1 & 2 10/14/89 PLUS ATTACHMENTS 3 & 4 9/24/89
Vendor Audit/Survey	
Source Verification	
Acceptable Supplier/Item Performance Record	

Verification Plan Acceptance for Use:

J. Z. EMIAJ 9-29-89 AS 10/29/89 Daniel P. Murphy 9/30/89 AS 10/6/89

Originator/Date AS 10/5/89 AS 10/1/89 Procurement Engineering/Date AS 10/6/89 AS 10/24/89

Approval for Technical Adequacy AS 10/6/89 AS 10/24/89 Procurement Quality Assurance/Date AS 10/24/89

Critical Characteristics Have Been Verified RIR No. _____

Procurement Quality Assurance/Date

A6.02/03 2/13/89

Δ - CODE 'A'

Δ ADDITION OF ATTACHMENT
DELETION OF 330-1 FOR
ITEMS 15 & 16

⊖ ADDED ATTACHMENTS 3 & 4

AS 10/1/89 AS 10/1/89 AS 10/1/89 33, 34 & 35 PER P.I. SUPP. OF AS 10/1/89

INSPECTION REPORT

SHEET 1 OF 2

IR NO 8/A

ITEM THERMALAR	COMPONENT/SYSTEM N/A	LOCATION WAREHOUSE
--------------------------	--------------------------------	------------------------------

INSPECTION REPORT TO BECOME INTEGRAL ATTACHMENT TO WORK ORDER	WORK DOC. NO. VP-89-2092	IP NO. N/A	IP REV. NO. 8/A
---	------------------------------------	----------------------	---------------------------

YES NO

ITEM NO.	WO STEP NO.	QUALITY CHARACTERISTIC	INITIAL INSPECTION		REINSPECTION						
			S	U	INSPECTOR	DATE	S	U	INSPECTOR	DATE	
		PHYSICAL DAMAGE									
1.		Visually inspect to assure that items or parts of items are not broken, cracked, deformed or misaligned and that accessible surfaces are free of visible gouges, dents, scratches, corrosion, rust and burns. CRACKS (VERIFY 10 ITEMS FOR EACH LINE ITEM.) SEE ATTACHMENT No. 2 FOR INSPECTION OF NOTES: BY 10/9/89 POWBLS (1) Item(s) shall be visually inspected unless package markings prohibit unpacking. (2) Item(s) contained in transparent separate moisture-proof bags or envelopes may be visually inspected without removing the item from the bag or envelope. (3) Care shall be taken to avoid contamination of the items during inspection. Inspections shall be performed in an area equivalent to ANSI N45.2.2(1972) level <u>RB</u> as a minimum. <u>FL 10/20/89</u>	✓		FLH	3/11/89					

QC LEVEL I APPROVAL 	10/6/89	10/29/89	DATE 9/29/89
-------------------------	---------	----------	-----------------

REMARKS/ADDITIONAL INSPECTIONS

PARTIAL SHIPMENT

MRP# 9366662, 937584

49.5 LBS DO NOT MEET THE Y2 MIN PER LINE NO 1 ATTACHMENT 3

REF NCR# 89-11452

QC LEVEL II III FINAL REVIEW	DATE
------------------------------	------

IR CONTINUATION SHEET

VP - 89 - 2092

W J	WO STEP NO	QUALITY CHARACTERISTIC	INITIAL INSPECTION		REINSPECTION		WSP POINT	
			S	U	INSPECTOR	DATE		S
		IDENTIFICATION and MARKING						
		Verify that identification and marking(s) is/are as indicated below:						
			METHOD					
2.1		a) P.O. Number - See Page 1	S	✓	FLL	11/3/89		
2.2		b) Line Item No. 15 → 32	S	✓	FLL	11/3/89		
2.3		c) Description - See PAGES 4&5	S	✓	FLL	11/3/89		
		METHOD						
		(1) physically on the item/bundle						
		(2) on a tag attached to the item/bundle						
		(3) on a package containing the item						
		(4) on documentation traceable to the item						
		(5) any of the above						
		(6) not applicable						
		Notes:						
		1) When more than one method of identification is used, the item(s) shall be inspected for conflicting markings.						
		2) Identification and marking(s) may be stamped, labeled, etched, scribed, printed or written.						

LINE ITEM NO.

DESCRIPTION

15	4' ± 1 1/2" X 6' 6" ± 1 1/2" PANELS 330 + Δ 1/2" MIN 3/4" MAX THICKNESS "V" STIFFENER RIBS
16	4' ± 1 1/2" X 6' 6" ± 1 1/2" PANELS 330 + Δ 1/2" MIN. 3/4" MAX THICKNESS NO "V" STIFFENER RIBS
17	3/4" I.D. X 3 FT. NOMINAL
* 17, 18, 19, 20, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32	SAME FOR { DFT Δ.625" ± Δ.125" PRE-SHAPED CONDUIT SECTIONS
* 18	3" I.D. X 3 FT
* 19	4" I.D. X 3 FT
* 20	5" I.D. X 3 FT
21	SOLID (S GALLON) CONTAINER THERMALAG 330-660
22	THERMALAG 330-1 SEALING COMPOUND
* 23	1" I.D. X 3 FT
* 24	1 1/2" I.D. X 3 FT.
* 25	2" I.D. X 3 FT.
* 26	3/4" I.D. X 3 FT.
* 27	1" I.D. X 3 FT
* 28	1 1/2" I.D. X 3 FT.

* 29

2" I.D. X 3 FT.

* 30

3" I.D. X 3 FT.

* 31

4" I.D. X 3 FT.

X 32

5" I.D. X 3 FT.

* X 33

4" ± 1/2" X 6'6" ± 1/2" PLATE THICKNESS
1/2" MIN. 3/4" MAX THICKNESS
WITH "V" STIFFENER RIBS

** 34

6 GALLON CONTAINERS
THERMOLITE 350-1
STABILIZED COMPRESSIVE MATERIAL
THERMOLITE

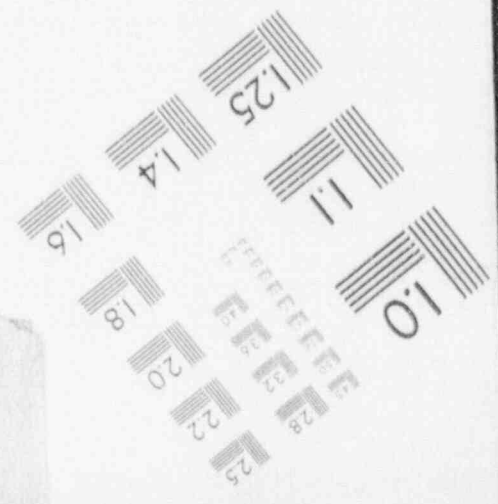
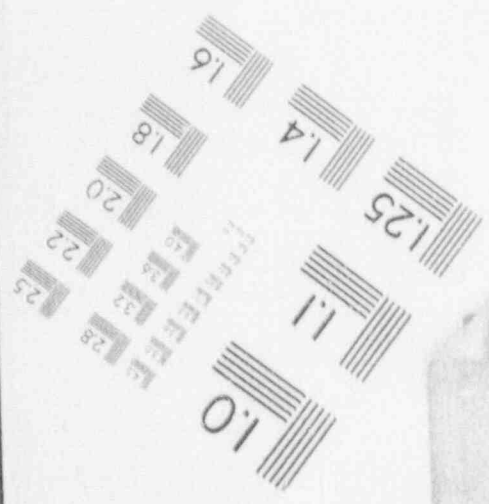
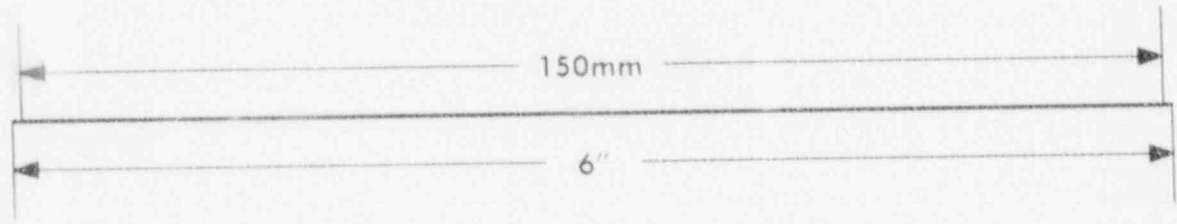
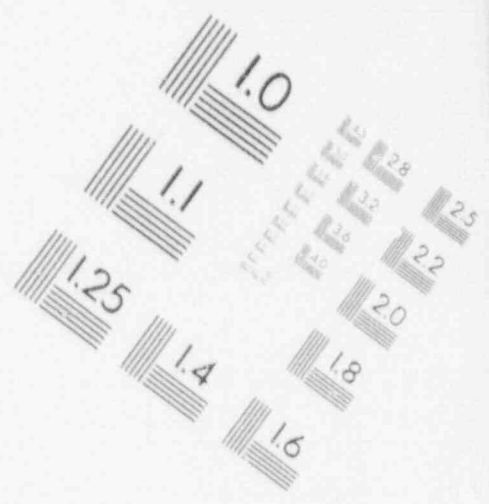
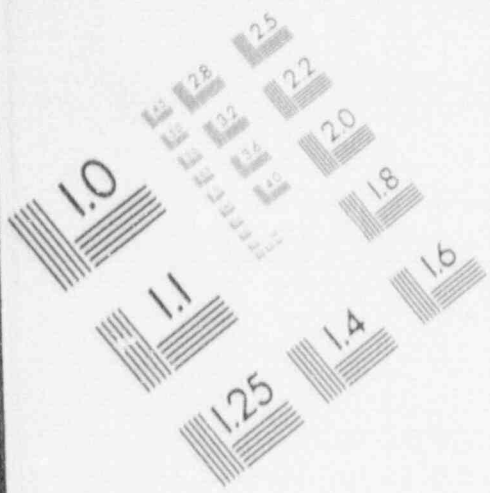
* X 35

4" ± 1/2" X 6'6" ± 1/2" PLATE THICKNESS
THERMOLITE
MIN 1/2" MAX 3/4" THICKNESS
NO "V" STIFFENER RIBS

~~FOR (0155)~~

1

IMAGE EVALUATION TEST TARGET (MT-3)



IR CONTINUATION SHEET

A J.	WO STEP NO	QUALITY CHARACTERISTIC	INITIAL INSPECTION			REINSPECTION			INSP POINT
			S	U	INSPECTOR DATE	S	U	INSPECTOR DATE	
		DENSITY							
		FOR EACH SHIPMENT OF AERIALAK PANELS RECEIVED, THE RECEIPT INSPECTOR SHALL TAKE ONE PANEL FROM EACH PALLET RECEIVED MEASURE THE PANEL TO DETERMINE THE SQUARE FOOTAGE THEN WEIGH THE PANEL							
		RECORD THE FOLLOWING :							
		SQ. FOOTAGE :							
		WEIGHT :							
		DENSITY :							
		(DIVIDE THE WEIGHT BY THE SQ. FOOTAGE TO GET THE DENSITY PER SQ FOOT)							
		DATE OF SHIPMENT :							
		I. D. OF PALLET :							
		(IF ANY)							
		THIS IS NOT ACCEPT/REJECT FOR INFORMATION ONLY							
		NOTE: MAKE A COPY OF THIS FORM FOR EVERY PALLET WEIGHED AND ATTACH TO V.P.							
		INSPECTOR INITIAL/DATE							

WO STEP NO.	QUALITY CHARACTERISTIC	INITIAL INSPECTION			REINSPECTION			INSP POINT
		S	U	INSPECTOR	DATE	S	U	
	DIMENSIONS							
	FOR ALL PANELS ('V' GROOVE AND NON-'V' GROOVE) THE FOLLOWING DIMENSIONAL CHECKS SHALL BE PERFORMED							
1	VERIFY BY MEASUREMENT THAT ALL EDGES OF PANELS RANGE BETWEEN 1/2" AS A MINIMUM AND 3/4" AS A MAXIMUM							
2	VISUALLY INSPECT INTERIOR SURFACES FOR DEPRESSIONS INDICATING THICKNESS REDUCTION							
	NOTE: IF UNSAT CONDITIONS ARE NOTED THE INSPECTOR SHALL MAP OUT THE AREAS OF UNSAT CONDITIONS AND ATTACH TO THE V. P. SUSPECT PANELS AND UNSAT PANELS SHALL BE PLACED ON HOLD PENDING FURTHER EVALUATION							
	⚠ DELETED SEE ATTACHMENT NO 4 TO VP. 89-2092 <i>JK</i> 11/1/89							

(2) ADDED 11/1/89 by [signature]

IR CONTINUATION SHEET
ATTACHMENT NO. 3 TO VP-89-2092

SHEET 1 OF 1

IR NO. N/A

M J.	WO STEP NO.	QUALITY CHARACTERISTIC	INITIAL INSPECTION				REINSPECTION				INSP POINT
			S	U	INSPECTOR	DATE	S	U	INSPECTOR	DATE	
		DIMENSIONS (CONDUIT SECTIONS)									
		INSPECTION FREQUENCY:									
		FOR EACH BOX OF THERMALGAGE CONDUIT SECTIONS RECEIVED, THE INSPECTOR SHALL VISUALLY INSPECT THE EDGES OF ALL THE CONDUIT SECTIONS THEN SELECT A MINIMUM OF ONE SECTION THAT VISUALLY OR BY MEASURING APPEARS TO BE THINNER AND A MINIMUM OF ONE SECTION THAT APPEARS TO BE THICKER THAN THE OTHER SECTIONS IN THE BOX.									
1		VERIFY THAT THE THICKNESS OF THE SECTIONS ARE: 1/2" MINIMUM 3/4" MAXIMUM			✓	FLH	11/3/89				
		CLARIFICATIONS OF TOLERANCES									
1.1		IF ANY MEASUREMENT ON A SECTION IS GREATER THAN 3/4" THE INSPECTOR SHALL VERIFY THAT THE DENSITY OF THE SECTION DOES NOT EXCEED 5.25 LBS/SA. FT. A) DETERMINE AREA OF SECTION (SA. FEET) B) WEIGH SECTION C) DIVIDE THE WEIGHT BY THE SQUARE FOOTAGE TO GET DENSITY PER SA. FT.						N/A			
		RECORD DENSITY _____ RECORD BOX NO. _____									
		MITE SERIAL NO. _____ CAL DUE DATE _____									
		NOTE: INFORM PGA OF ALL UNSATS									
		NOTE: IF ANY SECTION DOES NOT MEET THE ABOVE CRITERIA IT SHALL BE REJECTED AND ALL OTHER SECTIONS IN THAT BOX SHALL BE INSPECTED.									

IR CONTINUATION SHEET

ATTACHMENT NO. 4 VP-89-2092

IR NO. N/A

A I.	WO STEP NO.	QUALITY CHARACTERISTIC	INITIAL INSPECTION		REINSPECTION		INSP POINT	
			S	U	INSPECTOR	DATE		S
		DIMENSIONS						
		INSPECTION FREQUENCY: FOR EACH PALLET OF THERMOLAR PANELS RECEIVED, THE INSPECTOR SHALL VISUALLY INSPECT THE EDGES OF ALL THE PANELS ON THE PALLET. THE INSPECTOR SHALL THEN SELECT A MINIMUM OF ONE PANEL THAT VISUALLY OR BY MEASURING APPEARS TO BE THINNER AND A MINIMUM OF ONE PANEL THAT APPEARS TO BE THICKER THAN THE OTHER PANELS ON THE PALLET.						
1		VERIFY THICKNESS OF PANELS TO BE: 1/2" MINIMUM 3/4" MAXIMUM						N/A
		CLARIFICATIONS: OF TOLERANCES						
		1) IF ANY MEASUREMENT ON A PANEL IS LESS THAN 3/8". THE PANEL SHALL BE REJECTED						
		2) A PANEL MAY HAVE MEASUREMENTS LESS THAN 1/2" BUT GREATER THAN OR EQUAL TO 3/8" PROVIDED THAT ANY ONE CONTINUOUS UNDERSIZE AREA DOES NOT EXCEED 16 SQ. IN. AND ALL UNDERSIZE AREAS ON A PANEL DOES NOT EXCEED 75 SQ. IN.						
		3) A PANEL MAY HAVE MEASUREMENTS GREATER THAN 3/4" PROVIDED THE DENSITY OF THE PANEL DOES NOT EXCEED 5.25 LBS PER SQ. FT. OR A PANEL TOTAL WEIGHT OF 136.5 LBS (DENSITY SHALL BE CALCULATED AND RECORDED PER ATTACHMENT NO. 1)						
		NOTE: ANY PANEL THAT DOES NOT MEET THE ABOVE CRITERIA SHALL BE REJECTED WITH THE UNSAT AREAS MARKED AND THE REMAINING PANELS ON THE SUSPECT PALLET SHALL BE REJECTED PER THE ABOVE CRITERIA						

FIGURE P.1
DESIGN CHANGE AUTHORIZATION FORM

= 12

**COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION**

DCI NO./REVISION
77269 110
PAGE 1 OF 17

COMPLETED BY ORIGINATOR

1. LOCATION INFO. APPLICABLE YES NO; IF YES, LOCATION _____

2. SYSTEM/SUBSYSTEM AFFECTED? YES NO; IF YES, SYSTEM/SUBSYSTEM NO. _____

3. REASON CHANGE IS REQUIRED/PROPOSED CHANGE (OPTIONAL): See Continuation sheets (PAGE 4).

4. EQUIPMENT/COMPONENT AFFECTED? YES NO; IF YES, EQ. NO. _____

5. APPLICABLE DOCUMENTS APPLICABLE? YES NO; IF YES, EQ. NO. _____

6. ORIGINATED BY: Robert L. LaGrone DATE: 10-26-89 ORGANIZATION: ENTUPE CITY: IRIS APPROVAL: [Signature] DATE: 10/26/89

7. DETAILS OF CHANGE:
See Continuation sheets (PAGE 5).
MEL is not affected.
No specific component is affected.
PAGE REPLACEMENT INSTRUCTIONS ARE ON PAGE 5.
THIS IS A PAGE REPLACEMENT DCA.

RECEIVED
OCT 27 1989
EDC

COMPLETED BY ENGINEERING

8. ENGINEERING BASIS: See Continuation sheets (PAGE 12).

WOULD BE SUPERCEDED BY REV 11

AFFECTED DOCUMENT NAME AND REVISION	INCORPORATION REQUIRED?	DATE	CLASSIFICATION
<u>2323-MS-384 R2</u>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<input checked="" type="checkbox"/> CLASS 1 OR 2 <input type="checkbox"/> NON-SAFE?
			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO; IF YES, IS BACKUP REQ'D? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

9. REFERENCE DOCUMENTS YES NO; IF YES, INDICATE:
TSI LETTER DATED 10/26/89
(SEE CVC FOR ATTACHMENT)

10. DOES DESIGN CHANGE AFFECT A LICENSING DOCUMENT? YES NO; IF YES, INDICATE: _____

11. DOES DESIGN CHANGE AFFECT A CALCULATION? YES NO; IF YES, INDICATE: _____

12. REMARKS YES NO; IF YES, INDICATE:
Construction Commencement
Attn: Lindsey, SW 2007 10/27/89

13. ORGANIZATION PREPARING DESIGN CHANGE: ENTUPE

14. RESPONSIBLE ENGINEER: [Signature] DATE: 10-27-89

15. COPIES DISTRIBUTION YES NO; IF YES, INDICATE:
A. Ladd IM1
A. Lindsey CO3
T. Cox AOR

16. ENGINEERING REVIEW: [Signature] K.B. Allison DATE: 10-27-89

17. PERMITTED BY AUTHORITY: _____ DATE: 10/27/89

18. DESIGN REPRESENTATIVE REQUIRED? YES NO; IF YES, INDICATE: _____

19. SIGNATURE: [Signature] DATE: 10/27/89

20. ENGINEERING APPROVAL: [Signature] DATE: 10/27/89

Mr. John Wawrzeniak
Impell Corporation

26 October 1989
Page 2

Fire tests performed by TSI involving the use of 200 or more panels, manufactured under identical quality control requirements, resulted in no failures of the THERMO-LAG 330 Fire Barrier System. Small statistical variances, as noted above, have no impact on the fire resistive response of the panels tested.

Based on the Quality Control Program in effect and fire test results, the fire resistive response of the prefabricated panels supplied to Comanche Peak meet our requirements for a one hour fire barrier system.

Yours truly,

Rubin Feldman, meq
Rubin Feldman
President

RF/meq

REVISION 0

Specification 2323-MS-38H, Revision 2, Appendix B contains the following clerical, grammatical, structural and programmatic deficiencies:

1. Section 1
 - a. Paragraph 2.0 (first paragraph) - This paragraph is not worded consistently with similar scope paragraphs. (Example: "This section provides the inspection attributes, acceptance criteria and mandatory inspection hold points for storage of radiant energy shield utilized in designated non-nuclear safety/QA program applicable structures.")
 - b. Paragraph 3.2 - This definition is not required. Procedures and specifications shall contain the information necessary to fulfill the scope. An item is either required to be inspected, utilizing specific criteria, or it is not!
 - c. General
 1. HEMYC and HEMYC system materials are not defined.
 2. RES system accessories are not defined.
2. Section 2
 - a. Paragraph 2.1 - (See comment on Section 1. Paragraph 2.0.)
 - b. Paragraph 3.1.2, 3.1.3 - Where or how are qualification records and list of qualified applicators obtained?
 - c. Paragraph 3.2.2 - How or who is responsible for notifying QC that these systems have been released for HEMYC installation?
 - d. Paragraph 3.3.1 - Change verbage to read: "Location of HEMYC shall be required by _____."
 - e. Paragraph 3.3.2 (first sentence) - Type "minimum of". How are the fastening studs applied? Are they inspected?
 - f. Paragraph 3.3.4 - How are the stainless steel bands fastened? Are they inspected? How are they identified as being stainless steel?
 - g. Paragraph 3.3.5 - Type "center to center any".
 - h. Paragraph 3.3.6 - Define securely install: Hand tight? Snug tight? Torqued? In regard to compression, this will have to be a hold point. Also, verification of overlap will have to be accomplished prior to fastening.

3c (cont'd)

- i. Paragraph 3.3.10 (second sentence) - Typographical error - "inche".
- j. Paragraph 4.1 (first sentence) - Typographical error - "cur", also "reassemble".

Section 2 (cont'd)

General: Hold points are not identified. Many of the attributes will need to be verified prior to subsequent work. All RES system materials (HEMYC, inner blanket, fastening studs and nuts, etc.) need to be defined.

REVISION 1

This revision is required to clarify the 28 day dry time criteria for ThermoLag 330-1 in Appendix A. Other clarifications are also required.

REVISION 2

This revision is required to clarify the acceptance criteria for the X-Cut Tape Adhesion Test, incorporate post IDR comments, and to correct grammatical and typographical errors.

REVISION 3

Revision 3 is required to allow certain airdrops which present ampacity concerns to be wrapped in accordance with SWEC Project Procedure PP-108. This procedure provides instructions for isolating cables requiring protection and identifying only those cables to receive wrap with 330-660. MS-38H requires revision to recognize PP-108 and to provide instructions for installation of 330-660 in these special cases. In addition several typographical changes are required.

REVISION 4

This revision is required to delete the requirement of Regulatory Guide 1.36 from the RES system testing, (i.e., Paragraph 3.5.4.2). This will facilitate construction installation schedules by allowing the use of on site RES that has not been tested to this regulatory guide.

REVISION 5

Revision 5 is required to clarify the installation requirements of ThermoLag for craft and to delineate the appropriate inspection criteria for QC.

This revision is also required to clarify the requirements of conformatory testing for RES, to mandate QC inspection of Thermo-lag fire stops installed in cable trays, and to clarify the location requirements for RES fire stops.

3c (cont'd)

REVISION 6

Revision 6 is required to reinstate criteria applicable to 2323-AS-47 that was erroneously omitted in Revision 5 and to.

REVISION 7

Revision 7 is required to correct a typing error on page 9.2, Appendix A, of Revision 5 of this DCA.

REVISION 8

This revision is required to relax specification requirements to facilitate construction. The following changes need to be made:

- Reduce minimum cure time for Thermo-lag 330-1 from 72 hrs. to 24 hrs. before Top-coat (Thermo-lag 350) may be applied.
- Exempt vertical runs of tray from the support banding requirement for 24" and wider cable trays.

REVISION 9

This revision is required for the following:

- Add criteria for Thermo-lag 330-1 pre-fabricated pieces to exceed the maximum 3/4" thickness.
- Delete the requirement for QC to take ambient temperature and dew point readings before Thermo-lag 330-660 Flexi-blanket installation.

REVISION 10

This revision is required to add new receipt inspection criteria for vendor fabricated Thermo-lag items.

7a (cont'd)

Page Replacement Instructions

- Body of Specification
 - o No pages were changed in this revision.
- Appendix A
 - o Remove page 3 from the current specification.
 - o Insert new pages 3 and 3.1 into the specification.

Place the remaining pages of the DCA in front of the specification.

The resulting updated specification shall match the pagination and revision levels indicated on the index sheet. If not, the specification shall be returned to DCC for correction.

7a Details of Change (Revision 10)

- Appendix A of this specification has been changed to include criteria that allows the minimum thickness of prefabricated Thermo-lag 330-1 panels and conduit shapes to be less than the required 1/2" minimum thickness provided the following criteria are met:
 1. Localized depression areas may exist provided they are not less than 3/8" minimum thickness for an area not greater than 16 sq. in.
 2. The localized depression areas shall not exceed a cumulative total area greater than 75 sq. in. per panel/item.

Discussion of Backfit

(Revision 5)

Some of the changes made by this DCA require backfit. A discussion of each follows:

- o To date, no cable trays requiring RES coverage have been finalized. No backfit required as a result of the change regarding RES fire stops. Prior to package closure, fire stops shall be inspected per the changes in this revision.
- o The changes made to the conformity testing section for RES are editorial and require no backfit.
- o The changes made regarding RES band spacing are for additional clarification and require no backfit.
- o The changes made to the installation section for Thermo-lag are for clarity and to provide construction aids and do not require backfit.
- o The changes made to the installation and inspection section for Thermo-lag fire stops in cable trays will require a backfit QC inspection.

NOTE 1: Due to CAR 89-009 and Construction Hold Notice CHN-572 dated 9/6/89, rework of the Thermo-lag materials installed in the plant on or prior to 9/6/89 is required. [On 9/7/89 and 9/8/89 construction performed a walkdown of all Thermo-lag presently installed in the plant, marked it with a red indelible marker, and had QC monitor this activity.] All seams/joints of the Thermo-lag materials presently installed in the plant are to be separated. All prefabricated Thermo-lag materials shall be inspected by construction to ensure that the material has not been modified or applied so as to provide less than the required 1/2" minimum coverage as delineated by Specification 2323-MS-38H. Reinstallation of Thermo-lag materials shall be in accordance with the installation requirements of 2323-MS-38H.

NOTE 2: Due to the rework activities described in NOTE 1, QC verification of all Thermo-lag fire stops shall be accomplished during this rework period. This will eliminate the need for destructive testing of a sealed Thermo-lag envelope at a later date.

(Revision 6)

There are no backfit requirements associated with this revision of this DCA.

Discussion of Backfit

(Revision 7)

No backfit of this change is necessary since it was not recognized as a change by QC (no Rev. 5 revision bar). Additionally, if this criteria had been used for inspection, the only spacing that would have been accepted is that which was exactly 6" on center; which is acceptable. This is true because construction was still bound to a requirement of 6" max. band spacing in the body of the specification.

(Revision 8)

No backfit required. Previous installations performed per the more stringent criteria are entirely acceptable.

(Revision 9)

There are no backfit requirements associated with this revision of this DCA. The changes made by this revision do not involve any construction requirements and in fact are less restrictive than before.

(Revision 10)

There are no backfit requirements associated with this revision of this DCA. The changes made by this revision are for future receipt of Thermo-lag material.

7b Engineering Basis (cont'd)

REVISION 0

Following are the Engineering Bases for the changes made by this DCA to Specification 2323-MS-38H, Revision 2:

- Editorial changes have been made for clarity.
- Revised the 18 inch rule for covering protruding members of a Thermo-Lag barrier to 9 inches per Calculation ME-CA-0000-965.
- Revised RES installation requirements per Calculation ME-CA-0000-990.
- Revised Appendices A and B to clarify text, sequence, contents and hold points.
- Provided additional criteria to allow greater flexibility during the installation of existing design.
- Enhanced procurement and storage requirements to satisfy existing design requirements.
- Deleted Appendix D (ThermoLag 330 System and Radiation Energy Shield Typical Installation Details) and referenced new design drawings as typical details to facilitate installation.
- QE comments stated on Pages 1 and 2 were resolved by reviewing each page and making appropriate changes. Changes were reviewed with OE and their comments resolved as part of the IDR process.

REVISION 1

Following are the Engineering Bases for the changes made by Revision 1 of this DCA to Specification 2323-MS-38H:

- Editorial changes were made for clarity.
- The requirement to sew and band RES along the longitudinal seam (overlap) was removed. This was changed to allow banding only and not require sewing as well. The banding will hold the RES securely around the raceway. The longitudinal sewing is not required because the barrier system used at CPSES is not a 1 hour rated system but a 1/2 hour rated system as justified in Calculation ME-CA-0000-990, Revision 0; therefore, it is not subject to a hose stream test and the longitudinal sewing of the overlapping seam is not required.

7b Engineering Basis (cont'd)

REVISION 1 (cont'd)

- The option to use a moisture meter as a means of verifying that the Thermo-Lag 330-1 bulk grade material is sufficiently cured to take an accurate dry film thickness was added. Either a waiting period of 28 days following application or a moisture meter reading of 20 or less is sufficient to assure that the material has dried enough to allow an accurate DFT measurement (No Further Shrinkage).
- A definition of secondary interferences and a statement which allows them not be protected was added. A secondary interference is separated from a protruding item or protected raceway by two separate air gaps. For this reason a secondary interference will not conduct enough heat into a protected raceway to degrade the fire barrier.
- The X-test for adhesion verification of 351 primer was added to allow for more efficient field testing. The previous cross-hatch testing is more applicable to laboratory conditions and the X-cut assures adequate primer adhesion.
- The allowance to compress the RES material up to 3/4 inch was added. The additional 1/4" beyond the previous 1/2" allowable compression will not comprise the performance of the RES based on information obtained from the vendor.

REVISION 2

Following are the Engineering Bases for the changes made by Revision 2 of this DCA to Specification 2323-MS-38H:

- Editorial changes have been made for clarity.
- Post IDR comments from QE were of the editorial nature.
- The X-Cut Tape Adhesion Test acceptance criteria in Revision 1 of this DCA stated that less than 5% of the test area could be removed upon tape removal. This revision clarifies this criteria to be more in line with ASTM D5339. The scale for adhesion for the X-Cut test is a combination of qualitative and quantitative criteria. On this scale, 5A is the most conservative. 4A is the desired acceptance criteria but does not give specific limits of material removal. It says trace removal is acceptable but this criteria is left open to individual interpretation. Since 4A is entirely qualitative, quantitative criteria was added using 3A as a guide (3A is quantitative). The acceptable removal criteria in 3A was halved to allow 1/32" peel-off, either side of the incision (X-cut). This criteria allows craft to accurately determine the results of the test.

7b Engineering Basis (cont'd)

REVISION 3

The changes made by this revision are procedural in nature and have no effect on fire protection requirements.

REVISION 4

The basis for deleting the requirements of Regulatory Guide 1.36 for RES material is as follows:

1. FSAR, Section 1, Appendix 1A(B), Page 1A(B)-15 states that Regulatory Guide 1.36 does not apply for components located inside CPSES containment buildings, since only stainless steel metal reflective thermal insulation is used for austenitic stainless steel components located there.
2. Specification 2323-MS-38H and M1-1700 limits the use of RES to inside containment. (Reference Paragraphs 1.2, 33.2, 3.7.1 and M1-1700 entries for RES applications.)
3. RES is a radiant energy shield for an exposure fire and is not an "insulation" (reference Paragraph 1.3.10 - Specification 2323-MS-38H).
4. RES will be installed on conduits and trays and not on/touching stainless steel pressure retaining components. An installation and inspection paragraph is being added to this specification to assure compliance with this requirement. (See mark-ups attached to this DCA, Revision 4.)

In summary, the RES will be used in containment on non-stainless steel components as an energy shield. Therefore, based on the FSAR section listed above, Regulatory Guide 1.36 does not apply.

REVISION 5

The changes made by this revision of this DCA do not change the installation or the interpretation of the QC inspection requirements of Specification 2323-MS-38H. These changes were made to only facilitate the installation and inspection of Thermo lag materials and still meet the original requirements of 2323-MS-38H.

QC inspection of ThermoLag fire stop depth and location is necessary to assure proper installation of the fire barrier envelope system.

The change regarding the minimum distance from RES coverage termination to the first attachment band was made for clarification.

7b Engineering Basis (cont'd)

REVISION 5 (cont'd)

Fire stops are required for cable trays protected with RES since direct radiant heat transfer is possible in the event of a fire. This requirement was not directly spelled out in the specification, but rather in the installation drawings. This change is provided only for additional clarity. Fire stops are not required for conduits protected with RES because direct heat transfer through radiative interaction is not possible in the event of a fire.

Ambient temperature and dew point readings are required for bulk applications. This type of application is not being used at Comanche Peak. [The trowel grade material used for covering seams, joints, nuts, bolts, Hilti bolts, etc. is not considered bulk application]

The changes made regarding conformatory testing were editorial.

Site fabricated material is no longer permitted to be used.

Calculation 0210-063-0075 reference was deleted and the specific weight value for RES was added for convenience.

REVISION 6

Ambient temperature and dew point readings are required for bulk applications that are installed per Specification 2323-AS-47. These requirements are no longer required for Specification 2323-MS-38H and were erroneously deleted by Revision 5 of this DCA. Reinstating these requirements will facilitate the installation and inspection of Thermo-lag materials associated with 2323-AS-47.

REVISION 7

The changes made by this revision are editorial. An apparent typing error is all that is being corrected. No justification is necessary.

REVISION 8

The exception of vertical cable trays from the requirement of placing support banding under the top panel of Thermo-lag coverage is acceptable since the tray top coverage will not be susceptible to deformation due to gravity.

NOTE: The purpose of the requirement for support banding was to prevent deformation due to gravity.

The allowance of top coating Thermo-lag 330-1 after 24 hrs. of cure instead of 72 hrs. is based on a vendor letter stating this is an acceptable practice (see attached letter).

7b Engineering Basis (cont'd)

REVISION 9

The addition of the weight criteria for pre-fabricated Thermo-lag items was originally stated in this specification for site fabricated items and was the basis used by various disciplines in their analysis of Thermo-lag impact on their commodities. This criteria gives more latitude for Construction to use and QC to accept vendor fabricated Thermo-lag items that may occasionally exceed 3/4" in thickness.

The deletion of the requirement for QC to check ambient temperature and dew point before Thermo-lag 330-660 Flexi-blanket installation is acceptable. Ambient temperature and dew point readings need only be taken for bulk applications of 330-660 trowel grade; an installation not presently used at CPSES.

REVISION 10

The addition of the minimum thickness criteria to Appendix A of Specification 2323-MS-38H allows for the receipt and acceptance of vendor fabricated Thermo-lag items that exhibit inconsistencies in material minimum thickness requirements. ~~(See attached letter)~~ ^{KL 10-27-89}

(LETTER ATTACHED TO CVC FORM) ^{KL 10-27-89}

AFFECTED
SPECIFICATION
PAGES

	R.0	R.1	R.2	R.3	R.4	R.5	R.6	R.7	R.8	R.9	R.10
MAIN BODY: 1											
ii	X			X							
iii	X										
iv	X			X							

AFFECTED
 SPECIFICATION
 PAGES

	R.0	R.1	R.2	R.3	R.4	R.5	R.6	R.7	R.8	R.9	R.10
MAIN BODY: 1	X			X							
1.1	X			X							
2	X	X									
3	X	X									
3.1	X	X									
3.2	X	X									
3.3		X									
4	X										
5	X										
6	X										
7	X										
8	X										
8.1	X										
9	X										
10	X										
11	X										
12	X										
13	X										
14	X										
15											
16	X										
17	X	X									
18	X										
19	X	X	X	X		X	X			X	
19.1	X	X				X					
20	X	X	X			X			X		
20.1						X			X		
21	X					X	X				
21.1							X				
22	X	X		X							
22.1	X					X			X		
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23	X	X	X			X	X				
24	X	X				X					
25	X	X				X					
25.1	X					X	X				
26	X	X									
27	X										
28	X										
28.1	X										
29	X										
30											
31	X	X			X	X					
32	X					X					
33	X				X	X					
34	X	X									
34.1	X	X				X					
35	X	X				X					

- 3.5 Level C (Storage) - Items shall be stored indoors or equivalent with all provisions and requirements as set forth in Level B items except that heat and temperature control is not required. 00
- 4.0 RECEIPT INSPECTION REQUIREMENTS
- 4.1 Receipt inspections shall be by qualified quality control (QC) inspectors in accordance with site procedures. 00
- 4.1.1 These instructions shall assure that materials, equipment, or components are properly identified and correspond with associated documentation. 00
- 4.1.2 These instructions shall assure that inspection records or certificates of conformance attesting to the acceptance of materials, equipment, and components are completed. 00
- 4.1.3 Materials, equipment, and components shall be inspected and judged acceptable in accordance with existing site procedures. 00
- 4.1.4 Items accepted or released shall be identified as to their inspected status prior to forwarding them to a controlled storage area or releasing them for installation or further work. 00
- 4.1.5 Nonconforming items shall be clearly identified, controlled, and segregated where practical, until proper disposition is made. 00
- 4.1.6 Pre-fabricated Thermo-lag items (i.e., panels and conduit sections, etc.) shall have a thickness of 1/2" minimum, 3/4" maximum. 09
- NOTE 1: The 3/4" maximum thickness of pre-fabricated Thermo-lag items may be exceeded provided the item's weight does not exceed 5.25 lbs./sq. ft.
- NOTE 2: Localized depression areas may exist provided they are not less than 3/8" minimum thickness for an area not greater than 16 sq. in. 10
- The localized depression areas shall not exceed a cumulative total area greater than 75 sq. in. per panel/item.

5.0 MATERIAL STORAGE INSPECTION REQUIREMENTS

Verification of field storage level is not required.

The following attributes shall be verified a minimum of once per month for material storage:

5.1 Storage Level

<u>Material</u>	<u>Storage Level (Min.)</u>
330-69 Stress Skin	C
330-1 Subliming coating (bulk)	B
330-1 Subliming panels (prefabricated)	C
351 Primer	B
350 Two-Part Spill Resistant Topcoat	B
330-70 Conformable Ceramic Blanket	C
330-660 Flexi-Blanket Thermal	C
330-660 Barrier/Bulk Material	B
330-71 Fiberglass Gauze	C

COMANCHE PEAK STEAM ELECTRIC STATION CHANGE VERIFICATION CHECKLIST

COMPLETED BY RESPONSIBLE ENGINEER

1 DESIGN DOCUMENT TYPE: DCA
 NO.: 77269 REV.: 10 AFFECTED DOCUMENT TYPE: SPECIFICATION
 2 DESIGN CHANGE TREND EVALUATION (REFERENCE ECE 2.11-61):
 UNIT/CLASS: BIP CONTRACTOR/DISCIPLINE: TLL DESIGN CHANGE/REASON: IN IN
 3 DESIGN DOCUMENT CLASSIFICATION: CLASS I OR II HSR-SAFETY

SUPERVISING ENGINEER

4 INTERDISCIPLINE REVIEW:
 5.1 IS INTERDISCIPLINE REVIEW OF THE DESIGN DOCUMENT REQUIRED? YES NO; IF YES, COMPLETE ITEM 5.2.
 5.2 PRINTED NAME & SIGNATURE OF SUPERVISING ENGINEER COMPLETING ITEM 5.1:
K.B. Allison DATE: 10-27-89
 5.3 WHEN INTERDISCIPLINE REVIEW IS REQUIRED, CHECK REVIEWS REQUIRED; INDICATE THE RESPONSIBLE ORGANIZATIONS:

DISCIPLINE	SUP	EC	FP	CS	EE	MEC	ME	HU	CPE	QE/DA	MATL	OPER.	OTHER CONSISTENT
REVIEW REQ'D										✓			✓
RESPONSIBLE ORGANIZATION													PRELIMINARY*
REVIEWER'S INITIALS													TS
DATE										AJR 10/27/89			10/27/89

ENGINEERING REVIEWERS

FO CLZYER

COMPLETED BY DESIGN VERIFIER

6 DESIGN VERIFICATION:
 6.1 METHOD(S) OF VERIFICATION
 DESIGN REVIEW ALTERNATE CALCULATION (ATTACH CALCULATION) QUALIFICATION TEST (ATTACH TEST DOCUMENTATION)
 6.2 REMARKS YES NO; IF YES, INDICATE:
RECEIVED
OCT 28 1989
EDC
 6.3 PRINTED NAME AND SIGNATURE OF DESIGN VERIFIER(S): DAVID C SWAN DATE: 10/27/89



26 October 1989

RUBIN PELOMAN, P. E.
President

Mr. John Wawrzeniak
Impell Corporation
FM Road 56
5 Miles Northwest of Glen Rose
Glen Rose, Texas 76043

Dear Mr. Wawrzeniak:

As indicated in our telephone conference of earlier today, THERMO-LAG 330-1 Fire Resistive Material operates on the principle of sublimation with partial intumescence. The performance of the product is based on the integrated effect of sublimation, heat blockage derived from endothermic decomposition and mass injection through the char layer developed through the process of intumescence and the effects of reradiation.

The Subliming Material blankets a substantial surface area which is exposed to the flame. Local variations in thickness are negated by the average effects of the total mass of subliming materials and subliming gas produced as a result of energy exchange between the fire barrier and the flame itself.

While the entire surface of each Prefabricated Panel is scanned, detailed Quality Control thickness measurements are made on a minimum of 18 preselected locations of each Panel. This is in strict accordance with TSI's Quality Control Operating Procedures which are audited by Texas Utilities personnel during their regular audits. The most recent being performed on October 12 and 13, 1989.

We understand that several panel thicknesses, below 0.5", were observed. In one instance, a thickness of 3/8" was reported over small areas. The size of the panel supplied to Comanche Peak is 4' x 6 1/2', nominal. We understand that these areas comprise a maximum of 2% of the total surface area of a panel.

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

DCI NO./ REVISION
77269 11
NOV 10 1989

COMPLETED BY ORIGINATOR

1. LOCATION INFO APPLICABLE
 YES NO IF YES, LOCATION _____

2. EQUIPMENT/COMPONENT AFFECTED
IF YES, LB. NO. _____ YES NO

3. SYSTEM/SUBSYSTEM AFFECTED
IF YES, SYSTEM/SUBSYSTEM NO. _____ YES NO

4. INVOLVED DOCUMENTS APPLICABLE
IF YES, LB. NO. _____ YES NO

5. REASON CHANGE IS REQUIRED-PROPOSED CHANGE (OPTIONAL): See Continuation Sheets

6. ORIGINATED BY: [Signature] DATE: 11/3/89
ORGANIZATION: ENTUET DTG: 7859 APPROVAL: [Signature] DATE: 11/4/89

COMPLETED BY ENGINEERING

7. DETAILS OF CHANGE: see Continuation Sheets
MEL is not affected
No specific component is affected

8. ENGINEERING BASIS: see Continuation Sheets

9. AFFECTED DOCUMENT NUMBER(S) AND REVISION: 2323-MS-384 4/3

10. INCORPORATION REQUIRED? YES NO

11. LIFE 1 1 & COMMON 2

12. THE HIGHEST CLASS OF AFFECTED DOCUMENT(S) IS CLASS 1 OR 2 NON-SAFETY

13. ON P/W, OR DWG APPLICABLE YES NO IF YES, ON P/W NO. _____, DWG NO. _____

14. DOES DESIGN CHANGE CHANGE GENERIC REQUIREMENT(S)? YES NO IF YES, IS SHORT RESPONSE? YES NO

15. DOES DESIGN CHANGE AFFECT DESIGN BASIS DOCUMENT(S)? YES NO IF YES, DBD NO. _____ REV. _____

16. DOES DESIGN CHANGE AFFECT A LICENSING DOCUMENT(S)? YES NO IF YES, LDCR NO. _____

17. DOES DESIGN CHANGE AFFECT A CALCULATION? YES NO IF YES, CALG NO. _____ REV. _____

18. ORGANIZATION RESPONDING DESIGN CHANGE: ENTUET

19. RESPONSIBLE ENGINEER: [Signature] DATE: 11-3-89

20. ENGINEERING REVIEW: [Signature] DATE: 11/4/89

21. DESIGN REPRESENTATIVE REQUIRED? YES NO IF YES, ORGANIZATION _____ SIGNATURE _____ DATE _____

22. APPROVAL ENGINEER APPROVAL: [Signature] DATE: 11/4/89

23. REFERENCE DOCUMENTS YES NO IF YES, INDICATE:
TST Letter Dated 11-3-89 subject
Thermo-Lap 930 Fide Carrier System

24. REWORK YES NO IF YES, INDICATE:
Const Concurrence
A.M. Lindsay 11/4/89

25. ADDL DISTRIBUTION YES NO IF YES, INDICATE:
A Ladd IM1
A Lindsey COB
T Cox AOB

VOID SUPERCEDED BY REV 12

RECEIVED NOV 04 1989
DESIGN CHANGE CONTROL
"THIS IS A PAGE REPLACEMENT DCA" SEE PAGE 5 - "PAGE REPLACEMENT INSTRUCTIONS"

3C (CONT'D)

REVISION 0

Specification 2323-MS-38H, Revision 2, Appendix B contains the following clerical, grammatical, structural and programmatic deficiencies:

1. Section 1
 - a. Paragraph 2.0 (first paragraph) - This paragraph is not worded consistently with similar scope paragraphs. (Example: "This section provides the inspection attributes, acceptance criteria and mandatory inspection hold points for storage of radiant energy shield utilized in designated non-nuclear safety/QA program applicable structures.")
 - b. Paragraph 3.2 - This definition is not required. Procedures and specifications shall contain the information necessary to fulfill the scope. An item is either required to be inspected, utilizing specific criteria, or it is not!
 - c. General
 1. HEMYC and HEMYC system materials are not defined.
 2. RES system accessories are not defined.
2. Section 2
 - a. Paragraph 2.1 - (See comment on Section 1, Paragraph 2.0.)
 - b. Paragraph 3.1.2, 3.1.3 - Where or how are qualification records and list of qualified applicators obtained?
 - c. Paragraph 3.2.2 - How or who is responsible for notifying QC that these systems have been released for HEMYC installation?
 - d. Paragraph 3.3.1 - Change verbiage to read: "Location of HEMYC shall be required by _____."
 - e. Paragraph 3.3.2 (first sentence) - Type "minimum of". How are the fastening studs applied? Are they inspected?
 - f. Paragraph 3.3.4 - How are the stainless steel bands fastened? Are they inspected? How are they identified as being stainless steel?
 - g. Paragraph 3.3.5 - Type "center to center any".
 - h. Paragraph 3.3.6 - Define securely install: Hand tight? Snug tight? Torqued? In regard to compression, this will have to be a hold point. Also, verification of overlap will have to be accomplished prior to fastening.

3c (cont'd)

- i. Paragraph 3.3.10 (second sentence) - Typographical error - "inche".
- j. Paragraph 4.1 (first sentence) - Typographical error - "cur", also "reassemble".

Section 2 (cont'd)

General: Hold points are not identified. Many of the attributes will need to be verified prior to subsequent work. All RES system materials (HEMYC, inner blanket, fastening studs and nuts, etc.) need to be defined.

REVISION 1

This revision is required to clarify the 28 day dry time criteria for ThermoLag 330-1 in Appendix A. Other clarifications are also required.

REVISION 2

This revision is required to clarify the acceptance criteria for the X-Cut Tape Adhesion Test, incorporate post IDR comments, and to correct grammatical and typographical errors.

REVISION 3

Revision 3 is required to allow certain airdrops which present ampacity concerns to be wrapped in accordance with SWEC Project Procedure PP-108. This procedure provides instructions for isolating cables requiring protection and identifying only those cables to receive wrap with 330-660. MS-38H requires revision to recognize PP-108 and to provide instructions for installation of 330-660 in these special cases. In addition several typographical changes are required.

REVISION 4

This revision is required to delete the requirement of Regulatory Guide 1.36 from the RES system testing, (i.e., Paragraph 3.5.4.2). This will facilitate construction installation schedules by allowing the use of on site RES that has not been tested to this regulatory guide.

REVISION 5

Revision 5 is required to clarify the installation requirements of ThermoLag for craft and to delineate the appropriate inspection criteria for QC.

This revision is also required to clarify the requirements of conformance testing for RES, to mandate QC inspection of Thermo-lag fire stops installed in cable trays, and to clarify the location requirements for RES fire stops.

3c (cont'd)

REVISION 6

Revision 6 is required to reinstate criteria applicable to 2333-AS-47 that was erroneously omitted in Revision 5 and to.

REVISION 7

Revision 7 is required to correct a typing error on page 9.2, Appendix A, of Revision 5 of this DCA.

REVISION 8

This revision is required to relax specification requirements to facilitate construction. The following changes need to be made:

- Reduce minimum cure time for Thermo-lag 330-1 from 72 hrs. to 24 hrs. before Top-coat (Thermo-lag 350) may be applied.
- Exempt vertical runs of tray from the support banding requirement for 24" and wider cable trays.

REVISION 9

This revision is required for the following:

- Add criteria for Thermo-lag 330-1 pre-fabricated pieces to exceed the maximum 3/4" thickness.
- Delete the requirement for QC to take ambient temperature and dew point readings before Thermo-lag 330-660 Flexi-blanket installation.

REVISION 11

This revision is required in order to clarify the criteria for receipt inspection which was added in revision 10 of this DCA.

7a (cont'd)

Page Replacement Instructions

- Body of Specification
 - No pages were changed in this revision.
- Appendix A
 - Remove pages 3 and 3.1 from the current specification.
 - Insert new pages 3 and 3.1 into the specification.

Place the remaining pages of the DCA in front of the specification.

The resulting updated specification shall match the pagination and revision levels indicated on the index sheet. If not, the specification shall be returned to DCC for correction.

7a Details of Change

Revise Section 4.1.6 to add clarification for which types of Thermo-lag are applicable to the the different acceptance criteria provided by the manufacturer. See pages 6 and 7 of this DCA.

7a. (cont'd)

Discussion of Backfit

(Revision 3)

Some of the changes made by this DCA require backfit. A discussion of each follows:

- o To date, no cable trays requiring RES coverage have been finalized. No backfit required as a result of the change regarding RES fire stops. Prior to package closure, fire stops shall be inspected per the changes in this revision.
- o The changes made to the conformity testing section for RES are editorial and require no backfit.
- o The changes made regarding RES band spacing are for additional clarification and require no backfit.
- o The changes made to the installation section for Thermo-lag are for clarity and to provide construction aids and do not require backfit.
- o The changes made to the installation and inspection section for Thermo-lag fire stops in cable trays will require a backfit QC inspection.

NOTE 1: Due to CAR 89-009 and Construction Hold Notice CHN-572 dated 9/6/89, rework of the Thermo-lag materials installed in the plant on or prior to 9/6/89 is required. [On 9/7/89 and 9/8/89 construction performed a walkdown of all Thermo-lag presently installed in the plant, marked it with a red indelible marker, and had QC monitor this activity.] All seams/joints of the Thermo-lag materials presently installed in the plant are to be separated. All prefabricated Thermo-lag materials shall be inspected by construction to ensure that the material has not been modified or applied so as to provide less than the required 1/2" minimum coverage as delineated by Specification 2323-MS-38H. Reinstallation of Thermo-lag materials shall be in accordance with the installation requirements of 2323-MS-38H.

NOTE 2: Due to the rework activities described in NOTE 1, QC verification of all Thermo-lag fire stops shall be accomplished during this rework period. This will eliminate the need for destructive testing of a sealed Thermo-lag envelope at a later date.

(Revision 6)

There are no backfit requirements associated with this revision of this DCA.

7a (LOWT4)

Discussion of Backfit

(Revision 7)

No backfit of this change is necessary since it was not recognized as a change by QC (no Rev. 5 revision bar). Additionally, if this criteria had been used for inspection, the only spacing that would have been accepted is that which was exactly 6" on center; which is acceptable. This is true because construction was still bound to a requirement of 6" max. band spacing in the body of the specification.

(Revision 8)

No backfit required. Previous installations performed per the more stringent criteria are entirely acceptable.

(Revision 9)

There are no backfit requirements associated with this revision of this DCA. The changes made by this revision do not involve any construction requirements and in fact are less restrictive than before.

(Revision 10)

There are no backfit requirements associated with this revision of this DCA. The changes made by this revision are for future receipt of Thermo-lag material.

(REVISION 11)

No backfit is required since the acceptance criteria used for inspecting Thermo-lag 330-1 panels, conduit sections and 330-660 Flexi-basket prior to this revision of this DCA, was more stringent than the revised acceptance criteria implemented by this design change. Therefore, the materials inspected prior to this design change are acceptable and no backfit will be required.

7b Engineering Basis (cont'd)

REVISION 0

Following are the Engineering Bases for the changes made by this DCA to Specification 2323-MS-38H, Revision 2:

- Editorial changes have been made for clarity.
- Revised the 18 inch rule for covering protruding members of a Thermo-Lag barrier to 9 inches per Calculation ME-CA-0000-965.
- Revised RES installation requirements per Calculation ME-CA-0000-990.
- Revised Appendices A and B to clarify text, sequence, contents and hold points.
- Provided additional criteria to allow greater flexibility during the installation of existing design.
- Enhanced procurement and storage requirements to satisfy existing design requirements.
- Deleted Appendix D (ThermoLag 330 System and Radiation Energy Shield Typical Installation Details) and referenced new design drawings as typical details to facilitate installation.
- QE comments stated on Pages 1 and 2 were resolved by reviewing each page and making appropriate changes. Changes were reviewed with QE and their comments resolved as part of the IDR process.

REVISION 1

Following are the Engineering Bases for the changes made by Revision 1 of this DCA to Specification 2323-MS-38H:

- Editorial changes were made for clarity.
- The requirement to sew and band RES along the longitudinal seam (overlap) was removed. This was changed to allow banding only and not require sewing as well. The banding will hold the RES securely around the raceway. The longitudinal sewing is not required because the barrier system used at CPSES is not a 1 hour rated system but a 1/2 hour rated system as justified in Calculation ME-CA-0000-990, Revision 0; therefore, it is not subject to a hose stream test and the longitudinal sewing of the overlapping seam is not required.

7b Engineering Basis (cont'd)

REVISION 1 (cont'd)

- The option to use a moisture meter as a means of verifying that the Thermo-Lag 330-1 bulk grade material is sufficiently cured to take an accurate dry film thickness was added. Either a waiting period of 28 days following application or a moisture meter reading of 20 or less is sufficient to assure that the material has dried enough to allow an accurate DFT measurement (No Further Shrinkage).
- A definition of secondary interferences and a statement which allows them not be protected was added. A secondary interference is separated from a protruding item or protected raceway by two separate air gaps. For this reason a secondary interference will not conduct enough heat into a protected raceway to degrade the fire barrier.
- The X-test for adhesion verification of 351 primer was added to allow for more efficient field testing. The previous cross-hatch testing is more applicable to laboratory conditions and the X-cut assures adequate primer adhesion.
- The allowance to compress the RES material up to 3/4 inch was added. The additional 1/4" beyond the previous 1/2" allowable compression will not compromise the performance of the RES based on information obtained from the vendor.

REVISION 2

Following are the Engineering Basis for the changes made by Revision 2 of this DCA to Specification 2323-MS-38H:

- Editorial changes have been made for clarity.
- Post IDB comments from QE were of the editorial nature.
- The X-Cut Tape Adhesion Test acceptance criteria in Revision 1 of this DCA stated that less than 5% of the test area could be removed upon tape removal. This revision clarifies this criteria to be more in line with ASTM D5339. The scale for adhesion for the X-Cut test is a combination of qualitative and quantitative criteria. On this scale, 5A is the most conservative. 4A is the desired acceptance criteria but does not give specific limits of material removal. It says trace removal is acceptable but this criteria is left open to individual interpretation. Since 4A is entirely qualitative, quantitative criteria was added using 3A as a guide (3A is quantitative). The acceptable removal criteria in 3A was halved to allow 1/32" peel-off, either side of the incision (X-cut). This criteria allows craft to accurately determine the results of the test.

7b Engineering Basis (cont'd)

REVISION 3

The changes made by this revision are procedural in nature and have no effect on fire protection requirements.

REVISION 4

The basis for deleting the requirements of Regulatory Guide 1.36 for RES material is as follows:

1. FSAR, Section 1, Appendix 1A(B), Page 1A(B)-15 states that Regulatory Guide 1.36 does not apply for components located inside CPSES containment buildings, since only stainless steel metal reflective thermal insulation is used for austenitic stainless steel components located there.
2. Specification 2323-MS-38H and M1-1700 limits the use of RES to inside containment. (Reference Paragraphs 1.2, 33.2, 3.7.1 and M1-1700 entries for RES applications.)
3. RES is a radiant energy shield for an exposure fire and is not an "insulation" (reference Paragraph 1.3.10 - Specification 2323-MS-38H).
4. RES will be installed on conduits and trays and not on/touching stainless steel pressure retaining components. An installation and inspection paragraph is being added to this specification to assure compliance with this requirement. (See mark-ups attached to this DCA, Revision 4.)

In summary, the RES will be used in containment on non-stainless steel components as an energy shield. Therefore, based on the FSAR section listed above, Regulatory Guide 1.36 does not apply.

REVISION 5

The changes made by this revision of this DCA do not change the installation or the interpretation of the QC inspection requirements of Specification 2323-MS-38H. These changes were made to only facilitate the installation and inspection of Thermo-lag materials and still meet the original requirements of 2323-MS-38H.

QC inspection of ThermoLag fire stop depth and location is necessary to assure proper installation of the fire barrier envelope system.

The change regarding the minimum distance from RES coverage termination to the first attachment band was made for clarification.

7b Engineering Basis (cont'd)

REVISION 5 (cont'd)

Fire stops are required for cable trays protected with RES since direct radiant heat transfer is possible in the event of a fire. This requirement was not directly spelled out in the specification, but rather in the installation drawings. This change is provided only for additional clarity. Fire stops are not required for conduits protected with RES because direct heat transfer through radiative interaction is not possible in the event of a fire.

Ambient temperature and dew point readings are required for bulk applications. This type of application is not being used at Coancho Peak. [The trowel grade material used for covering seams, joints, nuts, bolts, Hilti bolts, etc. is not considered bulk application]

The changes made regarding conformatory testing were editorial.

Site fabricated material is no longer permitted to be used.

Calculation 0210-063-0075 reference was deleted and the specific weight value for RES was added for convenience.

REVISION 6

Ambient temperature and dew point readings are required for bulk applications that are installed per Specification 2323-AS-47. These requirements are no longer required for Specification 2323-MS-38H and were erroneously deleted by Revision 5 of this DCA. Reinstating these requirements will facilitate the installation and inspection of Thermo-lag materials associated with 2323-AS-47.

REVISION 7

The changes made by this revision are editorial. An apparent typing error is all that is being corrected. No justification is necessary.

REVISION 8

The exception of vertical cable trays from the requirement of placing support banding under the top panel of Thermo-lag coverage is acceptable since the tray top coverage will not be susceptible to deformation due to gravity.

NOTE: The purpose of the requirement for support banding was to prevent deformation due to gravity.

The allowance of top coating Thermo-lag 330-1 after 24 hrs. of cure instead of 72 hrs. is based on a vendor letter stating this is an acceptable practice (see attached letter).

7b Engineering Basis (cont'd)

REVISION 9

The addition of the waight criteria for pre-fabricated Thermo-lag items was originally stated in this specification for site fabricated items and was the basis used by various disciplines in their analysis of Thermo-lag impact on their commodities. This criteria given more latitude for Construction to use and QC to accept vendor fabricated Thermo-lag items that may occasionally exceed 3/4" in thickness.

The deletion of the requirement for QC to check ambient temperature and dew point before Thermo-lag 330-660 Flexi-blanket installation is acceptable. Ambient temperature and dew point readings need only be taken for bulk applications of 330-660 trowel grade; an installation not presently used at CPSES.

REVISION 10

The addition of the minimum thickness criteria to Appendix A of Specification 2323-MS-38H allows for the receipt and acceptance of vendor fabricated Thermo-lag items that exhibit inconsistencies in material minimum thickness requirements. ~~(See attached letter)~~ Bf, 17.59

(LETTER ATTACHED TO CVC FORM). Bf
1-27-89

REVISION 11

This design change is required in order to apply acceptance criteria for the receipt of Thermo-lag 330-1 panels, conduit sections and 330-660 Flexi-blanket which is consistent with that criteria by which the manufacturer (TSI, Inc.) uses in the manufacturing of same materials. TSI, Inc. utilizes a TU Elect. approved QA procedure for acceptance of the above materials which allows for the variations discussed in this design change.

AFFECTED SPECIFICATION PAGES		R.0	R.1	R.2	R.3	R.4	R.5	R.6	R.7	R.8	R.9	R.10	R.11
MAIN BODY:	i												
	ii	X				X							
	iii	X											
	iv	X				X							

- 3.5 Level C (Storage) - Items shall be stored indoors or equivalent with all provisions and requirements as set forth in Level B items except that heat and temperature control is not required.
- 4.0 RECEIPT INSPECTION REQUIREMENTS
- 4.1 Receipt inspections shall be by qualified quality control (QC) inspectors in accordance with site procedures.
- 4.1.1 These instructions shall assure that materials, equipment, or components are properly identified and correspond with associated documentation.
- 4.1.2 These instructions shall assure that inspection records or certificates of conformance attesting to the acceptance of materials, equipment, and components are completed.
- 4.1.3 Materials, equipment, and components shall be inspected and judged acceptable in accordance with existing site procedures.
- 4.1.4 Items accepted or released shall be identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further work.
- 4.1.5 Nonconforming items shall be clearly identified, controlled, and segregated where practical, until proper disposition is made.
- 4.1.6 Pre-fabricated Thermo-lag items (i.e., panels, conduit sections, Flexi-blankets) shall meet the following thickness requirements:

Thermo-lag 330-1 panels	1/2" min., 3/4" max.
Thermo-lag 330-1 conduit sections	1/2" min., 3/4" max.
Thermo-lag 330-660 Flexi-blanket	1/4" min., 5/8" max.

NOTE 1: The 3/4" maximum thickness of pre-fabricated 330-1 Thermo-lag items may be exceeded provided the item's weight does not exceed 5.25 lbs./sq. ft.

NOTE 2: Localized depression areas may exist provided they are not less than 3/8" minimum thickness for an area not greater than 16 sq. in for 330-1 panels and 2 in² for 330-1 conduit sections. Localized depression areas shall not exceed a cumulative total area greater than 2% of the items total "finished face" surface area. There is no allowance for thickness measurements of less than 1/4" for Thermo-lag 330-660 Flexi-blanket.

NOTE 3: The 5/8" maximum thickness of pre-fabricated 330-660 Thermo-lag items may be exceeded provided the item's weight does not exceed 2 lbs/ft².

(APPENDIX-A)

5.0 MATERIAL STORAGE INSPECTION REQUIREMENTS

Verification of field storage level is not required.

The following attributes shall be verified a minimum of once per month for material storage:

5.1 Storage Level

<u>Material</u>	<u>Storage Level (Mfn.)</u>
330-69 Stress Skin	C
330-1 Subliming coating (bulk)	B
330-1 Subliming panels (prefabricated)	C
351 Primer	
350 Two-Part Spill Resistant Topcoat	B
330-70 Conformable Ceramic Blanket	C
330-660 Flexi-Blanket Thermal	C
330-660 Barrier/Bulk Material	B
330-71 Fiberglass Gauze	C

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FIGURE 7.1

COMANCHE PEAK STEAM ELECTRIC STATION CHANGE VERIFICATION CHECKLIST

COMPLETED BY RESPONSIBLE ENGINEER

1 DESIGN DOCUMENT TYPE: TCA 1
 NO.: 77269 REV: 11 AFFECTED DOCUMENT TYPE: Spec.
 2 DESIGN CHANGE TREND EVALUATION (REFERENCE SEE 2.11-01):
 UNIT/CLASS: X1 Q CONTRACTOR/DISCIPLINE: T & L DESIGN CHANGE/REASON: IN / N
 3 DESIGN DOCUMENT CLASSIFICATION: CLASS 1 OR B HIGH-SAFETY

SUPERVISING ENGINEER

4 INTERDISCIPLINE REVIEW:
 5.1 IS INTERDISCIPLINE REVIEW OF THE DESIGN DOCUMENT REQUIRED? YES NO; IF YES, COMPLETE ITEM 5.3.
 5.2 PRINTED NAME & SIGNATURE OF SUPERVISING ENGINEER COMPLETING ITEM 5.1:
KENT A. FULL *Kent A. Full* DATE: 11/4/89
 5.3 WHEN INTERDISCIPLINE REVIEW IS REQUIRED, CHECK REVIEWS REQUIRED; INDICATE THE RESPONSIBLE ORGANIZATIONS:

DISCIPLINE	SIP	EQ	FP	CS	EE	M/C	ME	NU	CPE	QA	MATEL	OPER.	OTHER
REVIEW REQ'D										✓			
RESPONSIBLE ORGANIZATION										•			
REVIEWER'S INITIALS										JW			
DATE										11/4/89			

ENGINEER REVIEWERS

6 DESIGN VERIFICATION:
 6.1 METHOD(S) OF VERIFICATION: DESIGN REVIEW ALTERNATE CALCULATION (ATTACH CALCULATION) QUALIFICATION TEST (ATTACH TEST DOCUMENTATION)
 6.2 COMMENTS: YES NO; IF YES, INDICATE: _____

RECEIVED
NOV 04 1989
DESIGN CHANGE CONTROL

COMPLETED BY DESIGN VERIFIER

6.3 PRINTED NAME AND SIGNATURE OF DESIGN VERIFIER(S): F. J. DeTemple *F. J. DeTemple* DATE: 11/4/89



VIA TELECOPY: 817-897-8610

November 3, 1989

Mr. Steve Einbinder
Impell Corporation
FM Road 56
5 Miles Northwest of Glen Rose
Glen Rose, Texas 76043

Subject: THERMO-LAG 330 Fire Barrier System

Reference: TSI/R. Feldman's Letter Dated October 26, 1989 to J. Wawrzeniak

Dear Mr. Einbinder

TSI's Quality Control Operating Procedures for the THERMO-LAG 330 Preformed Conduit Sections requires the entire surface of each section to be scanned and detailed thickness measurements are taken on a minimum of 9 preselected locations. This is in strict accordance with TSI's Quality Control Operating Procedures which are audited by TU personnel during their regular audits. The most recent being performed on October 12 and 13, 1989.

We understand that several conduit section thicknesses, below 0.5", were observed. We understand that these areas comprise a maximum of 2% of the total surface area of a Preformed Conduit Section.

Fire tests performed by TSI involving the use of 200 or more conduit sections, manufactured under identical quality control requirements, resulted in no failures of the THERMO-LAG 330 Fire Barrier System. Small statistical variances, as noted above, have no impact on the fire resistive response of the conduit sections tested.

For purposes of future receipt inspection at Comanche Peak, we suggest that localized compressions should not be less than 3/8" in thickness over an area not to exceed 2 square inches. The cumulative total of all localized compressions should not exceed 2% of the total surface area of each conduit section.

Based on the Quality Control Program in effect and fire test results, the fire resistive response of the THERMO-LAG 330 Preformed Conduit Sections supplied to Comanche Peak meet our requirements for a one hour fire barrier system.

Yours truly,
James A. Ripp, Jr.
James A. Ripp, Jr.
Vice President
Sales & Marketing

JAR/mls

date: 1-20-90

Robinson,
Robinson, Peterson, Berk,
Rudolph, Cross & Garde

Mary Lou Robinson
Nila Jean Robinson
John C. Peterson
Avram D. Berk
Michael Rudolph
Dan Cross
Billie Pinner Garde

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This transmission consists of 7 pages including cover sheet.

TO: Mr. Christopher Atkins

FROM: Billie Pinner Garde

If there are any problems regarding this transmission, please call (414) 731-1817.

NOTES: Ms. Garde asked that I FAX this letter to you, you will receive the original & the attachments on Thursday, Jan. 30th from Ms. Garde.

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