EVALUATION RESEARCH CORPORATION

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COMANCHE PEAK RESPONSE TEAM

QUALITY INSTRUCTION FOR SPECIFIC ACTION PLAN VII.c

INSTRUCTION NO: QI-040 REVISION NO: 1 ISSUE DATE: 02/20/86

DOCUMENTATION REVIEW OF HVAC DUCTS AND PLENUMS

Prepared by: Bossums QA/QC Discipline Engineer Date: FED. 11, 1986 Approved by: Albert A Patters. ____ Date: 2/13/86 Approved by: <u>E.C. Barada</u> Date: <u>Blights</u> Approved by: <u>Alphacel</u> Date: <u>2/19/36</u>

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1.0 PURPOSE

This instruction provides instructions and accept/reject criteria for the documentation review of sample items of HVAC Ducts and Plenums.

2.0 APPLICABILITY

This instruction is applicable to the documentation review of the visual reinspected samples selected from the population HVAC Ducts and Plenums, reference 3.3, at Comanche Peak Unit 1 and common, and Unit 2. The population is described in the Population Description for HVAC Ducts and Plenums.

3.0 REFERENCES

- 3.1 Description Memorandum for Documentation Review of HVAC Ducts and Plenums, QA/QC-RT-859, dated November 7, 1985, J. Schauf to A. Patterson.
- 3.2 CPP-009, "Performance of Reinspection and Documentation Reviews."
- 3.3 QI-039, "Reinspection of HVAC Ducts and Plenums."

4.0 GENERAL

4.1 Responsibilities

QA/QC inspectors perform documentation reviews in accordance with established CPRT project procedures and instructions. This instruction establishes the attributes and accept/reject criteria for the documentation review of HVAC ducts and plenums. Reference 3.2 addresses the method used to perform documentation reviews, and to document and process the results.

4.2 Policy

Activities performed under this instruction shall conform to the policies contained in the latest Comanche Peak Response Team Program Plan and Issue-Specific Action Plan VII.c.

5.0 INSTRUCTION

This section provides instructions for performing a documentation review on HVAC duct and plenum components. Verification of the attributes to be reviewed will be recorded on the Comanche Peak Response Team Checklists, Attachments 6.1, 6.2, 6.3, and 6.4.

Note that alphanumerics before each attribute corresponds to the checklist attribute number.

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5.0 INSTRUCTION (Cont'd)

The Bahnson Service Company, BSC, prepared and executed all documentation regarding this review. All documentation is located at BSC's onsite QC records facility. Unit 1 and common documentation is also available at the site Permanent Plant Records Vault (PPRV).

1. Pressure Test

Verify that a pressure test was performed on the subsystem which the sample is a part of and that the test was witnessed by a QC representative. This is accomplished by verifying that form DLT-CPI-1 of the Duct Leak Testing Procedure has been initialed or signed on the line assigned to "QC Witness".

2. Material Gage

Verify that the gage of the material is in accordance with the requirements of either the Material Requisition Form, Duct Design Change Request (DDCR). Inspection Report or equivalent. This is accomplished by verifying that a QC inspector has accepted the sample and has initialed and dated the applicable form identified above. In some cases the material gage may not be given on the same sheet as the inspector's initials. In this case, obtain the form which was used for the fabrication of the sample. Note that versions of procedure QCI-CPSES-002, Duct Fabrication Inspection Procedure, issued prior to May 22, 1978, did not include inspection of material gage. The inspector shall reject this attribute for QC initialing prior to this date, note the date in the remarks column and make reference to a generic deviation report. Also note that verification of the material gage in accordance with BSC Ductwork Fabrication Procedure, DFP-TUSI-001, was accomplished under OI-039, Reinspection of HVAC Ducts and Plenums.

3. Turning Vane Installation

Verify that the turning vane has been installed and inspected. This is accomplished by verifying that a QC inspector has initialed or signed and dated the Material Requisition form or equivalent.

4. Weld Procedure Application (Ducts and Flexible Connections)

Obtain "take-off" sheet filed by duct joint number, or equivalent, found on the Material Requisition Form, or equivalent. Using the welder's initials and the date of welding specified on the "take-off" sheet obtain the Welder Material Issue (WMI) slip which is filed by date.

Note: the "take-off" sheet only specifies the welder's initials whereas the WMI may have the welder's name or initials.

4. Weld Procedure Application (Cont'd)

From the WMI slip identify the welding procedure number and filler material classification. (If classification is not specified on the WMI use the heat number to obtain classification).

Obtain BSC welding procedure identified above. (Use revision effective at the time of welding).

Note that versions of procedure QCI-CPSES-002, Duct Fabrication Inspection Procedure, issued prior to May 22, 1978, did not include documentation of companion angle welding. The inspector shall reject this attribute for QC initialing prior to this date, note the date in the remarks column and make reference to a generic deviation report.

4.a Base Material

Verify that the base material specified on the welding procedure covers the material used in production. The production material is as follows:

Ducts and plenums: ASTM A526 or ASTM A527

Structural steel: ASTM A36

4.b Filler Metal Classification

Verify that the filler metal classification specified on the welding procedure is the same as that specified on the WMI slip or as obtained from the purchase order (for this documentation review, E70S-2, E70S-3, and E70S-6 shall be considered the same filler metal classification).

5. Weld Procedure Application (Plenums)

Obtain Inspection Report (IR) for the plenum filed by plenum drawing number.

From the WMI slip which is referenced on the IR, identify the welding procedure number and weld filler material classification used to make the joint (if classification is not specified on the WMI slip, use the heat number specified on the WMI to obtain the purchase order which specifies the classification).

Obtain BSC's welding procedure identified above (use revision effective at the time of welding).

- 5. Weld Procedure Application (Cont'd)
 - 5.a Welding Procedure

Verify that the welding procedure referenced on the WMI is the same as that specified by the plenum drawing.

5.b Base Material

Verify that the base material specified on the welding procedure covers the material used in production. The production material is as follows:

Ducts and plenums: ASTM A526 or ASTM A527

Structural steel: ASTM A36

5.c Filler Metal Classification

Verify that the filler metal classification specified on the welding procedure is the same as that specified on the WMI slip or as obtained from the purchase order (for this documentation review, E70S-2, E70S-3, and E70S-6 shall be considered the same filler metal classification).

6. Welder Qualification

Verify that the welder was qualified to the appropriate test at the time of welding. The appropriate test has the same number as the welding procedure (for this documentation review, qualification to BSC-12 procedure shall also qualify the welder to BSC-11 procedure).

Obtain the welder's name or initials from the WMI slip, Material Requisition Form or equivalent. Check the welder's log to verify that the welder was qualified to the appropriate test at the time of welding (use date specified on WMI slip). If the welder's log does not specify the effective dates of the welder's qualification to the required test, the inspector has two alternative methods for verifying that the welder's qualification had not lapsed.

1. The Material Control Weld Material Issuance Logs

There are two logs, one for current and one for noncurrent welders, both filed by welders' names. Check the Material Issuance Log to verify that there has been no six month or longer period of time when a welder was not issued filler metal for the appropriate weld process. If there is no six month or greater lapse then the welder is considered qualified to that process at the time of welding.

- 6. Welder Qualification (Cont'd)
 - 2. WMI Slips

WMI slips shall be checked for the welder from the date of his or her most recent applicable qualification prior to making the weld, up to the completion date of the sample's weld. Check the date and the weld material (wire or electrode) on the WMI. For the interim between the welder's qualification and the completion of the sample's welding, ensure at least one WMI for the appropriate weld process is issued not less than once every six months for the welder.

If a WMI slip is issued not less than once every six months, then the welder is considered to have been qualified at the time of welding for that process.

7. Inspectors' Certification

Note: If one of the following attributes is rejected, determine if the person that signed as a QC Inspector was ever certified to perform the inspection. If the inspector was certified, record the time period of certification, otherwise state that the person was never certified.

7.a Welding

Verify that the inspector who signed or initialed the welding inspection report for plenums or the Material Requisition Form or equivalent Form for ducts, was certified to QCI-CPSES-002, Duct Fabrication Inspection Procedure and QCI-CPSES-011, Visual Inspection of Welds. Note that QCI-CPSES-002, revision 3 does not reference galvanizing. For the period of time revision 3 is in effect, see QCI-CPSES-011 for galvanizing inspection requirements. Also verify that the inspector was certified to make the inspection at the time the inspection was performed by referring to the form "Qualification Record" in the inspector's certification file. The date of certification expiration is also on this form.

7.b Pressure Test

Verify that the inspector who signed or initialed as witness to the Duct Leak Testing Procedure was certified to DFP-TUSI-006, Duct Leak Testing Procedure.

Also verify that the inspector was certified to witness the test at the time the test was performed by referring to the form "Qualification Record" in the inspector's certification file. The date of certification expiration is also on this form.

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5.0 INSTRUCTION (Cont'd)

- 7. Inspectors' Certification (Cont'd)
 - 7.c Material Gage

Verify that the inspector who initialed the Material Requisition Form, or equivalent, was certified to QCI-CPSES-002, Duct Fabrication Inspection Procedure. Also verify that the inspector was certified to inspect the fabrication of the sample at the time the inspection was performed by referring to the form "Qualification Record" in the inspector's certification file. The date of certification expiration is also on this form.

7.d Turning Vane Installation

Verify that the inspector who initialed the Material Requisition Form, or equivalent, for fabrication of the elbow was certified to QCI-CPSES-002, Duct Fabrication Inspection Procedure. Also verify that the inspector was certified to make the inspection at the time the inspection was performed by referring to the form "Qualification Record" in the inspector's certification file. The date of certification expiration is also on this form.

8. Material Traceability

This section relates only to bulk receipt inspection of sheet metal ductwork, reinforcing and connecting angles and nuts and bolts. The documentation review is performed once and the results apply to all samples within this population. These generic type inspections are assigned verification package numbers R-M-DUPL-150 for sheet metal, R-M-DUPL-151 for structural angles, and R-M-DUPL-152 for nuts and bolts. Inspection checklists for these items are Attachments 6.2, 6.3 and 6.4 of this procedure respectively.

Sheet Metal Ductwork (see checklist Attachment 6.2)

1. Material

Verify for each purchase order that the material received is in accordance with ASTM A526 or A 527. This is accomplished by obtaining the BSC form, Receiving Checklist for Q Material, for the particular purchase order and verifying the material received from the information found on that form. If sufficient information is not contained on this form, refer to the purchase order or an Inspection Report. This applies only to 10 through 18 gage material.

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5.0 INSTRUCTION (Cont'd)

- 8. Material Traceability (Cont'd)
 - Certified Material Test Reports (CMTR) or Certification of Compliance (COC).

Verify for each purchase order that either a Certified Material Test Report or a Certificate of Compliance is on file.

3. Verify that the inspector who signed the Material Inspection Report, or equivalent, was certified to QCI-CPSES-004, Receiving Inspection and Identification. Also verify that the inspector was certified at the time the report was prepared by referring to the form "Qualification Record" in the inspector's certification file. The date of certification expiration is also on this form.

Structural Angles (see checklist Attachment 6.3)

1. Material

Verify for each purchase order that the material received is in accordance with ASTM A36. This is accomplished by obtaining the BSC form, Receiving Checklist for Q Material, for the particular purchase order and verifying the material received from the information found on that form. If sufficient information is not contained on this form, refer to the purchase order or an Inspection Report. This applies only to 1-1/2" x 1-1/2" x 3/16", 2" x 2" x 3/16", 2" x 2" x 1/4", 3"x 3"x 3/8", and 4"x 4"x 1/2" angles.

 Certified Material Test Reports or Certificates of Compliance.

> Verify for each purchase order that either a Certified Material Test Report or a Certificate of Compliance is on file.

3.

Verify that the inspector who signed the Material Inspection Report, or equivalent, was certified to QCI-CPSES-004, Receiving Inspection and Identification. Also verify that the inspector was certified at the time the report was prepared by referring to the form "Qualification Record" in the inspector's certification file. The date of certification expiration is also on this form.

8. Material Traceability (Cont'd)

Nuts and Bolts (see checklist Attachment 6.4)

1. Material

Verify for each purchase order that the nuts are in accordance with ASTM A563 and that the bolts are in accordance with ASTM A307. This is accomplished by obtaining the BSC form, Receiving Checklist for Q Material, for the particular purchase order and verifying the material received from the information found on that form. If sufficient information is not contained on this form, refer to the purchase order or an Inspection Report. This applies only to 5/16" nuts and $5/16" \times 1-1/4"$ long bolts.

 Certified Material Test Reports or Certificates of Compliance

> Verify for each purchase order that either a Certified Material Test Report or a Certificate of Compliance is on file.

- 3. Verify that the inspector who signed the Material Inspection Report, or equivalent, was certified to QCI-CPSES-004, Receiving Inspection and Identification. Also verify that the inspector was certified at the time the report was prepared by referring to the form "Qualification kecord" in the inspector's certification file. The date of certification expiration is also on this form.
- 9. Welding

Verify that welding has been inspected. This is accomplished by verifying that a QC inspector has initialed or signed and dated the Material Requisition Form or equivalent.

10. Touch-Up Galvanizing

Verify that galvanizing removed during the welding process and the weld have been touch-up painted. This is accomplished by verifying that a QC inspector has initialed or signed and dated the Material Requisition Form or equivalent.

6.0 ATTACHMENTS

- 6.1 Comanche Peak Response Team Documentation Review Checklist
- 6.2 Comanche Peak Response Team Documentation Review Checklist for Sheet Metal Material Traceability
- 6.3 Comanche Peak Response Team Documentation Review Checklist for Structural Angles Material Traceability
- 6.4 Comanche Peak Response Team Documentation Review Checklist for Nuts and Bolts Material Traceability

		PEAK RESPON CHECKLIST	ISE TEAM	Attachment 6.1 QI-040 Rev. 1
POPULATION DESC	VERIFIC	CATION PKG	NO.	
HVAC Ducts and Plenums	R-M-DUP	'L-		PAGE 1 OF 2
QUALITY INSTRUCTION QI-040 EQUIPMENT MARK/TAG NO. BSC Dwg. 2323-M BSC Subsystem	REINSPECTION			UNIT 1 UNIT 2 COMMON
	UE	RIFICATION		
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS
 Pressure Test Material Gage <u>Turning Vane</u> <u>Installation</u> <u>Weld Procedure</u> <u>Application</u> (Ducts and Flexible Connections) Base Material Filler Metal Classification <u>Weld Procedure</u> <u>Application</u> (Plenums) Welding Procedure Base Material Filler Metal Classification Welding Procedure Base Material Filler Metal Classification Filler Metal Filler Metal Filler Metal Filler Metal Filler Metal State Material Filler Metal Filler Metal Filler Metal Filler Metal Filler Metal Metal Filler Metal Filler Metal Filler Metal Filler Metal Filler Metal 				
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	VE	RIFICATION	N	
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS
 Welder Qualification Inspector's Certification Welding Pressure Test Material Gage Turning Vane Installation Material Traceability* Welding Touch-up Galvanizing 				
*Note: Material Traceabil are found in R-M-DUPL-150 checklist Attachment 6.3 respectively.	a (see chi	erklist A	dtachment	eral angles and nuts and bolts 6.2), R-M-DUPL-151 (see ecklist Attachment 6.4)

		PEAK RESPON CHECKLIST	ISE TEAM	Attachment 6.2 QI-040 Rev. 1
POPULATION DESC	VERIFIC	CATION PKG	NO.	
HVAC Ducts and Plenums	R-M-DUP	rL-150		PAGE 1 OF 3
QUALITY INSTRUCTION QI-040	C REIN	SPECTION		UNIT 1
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	VE	RIFICATION		
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS
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2. CMTR or COC				
3. Inspector's Certification				
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1. <u>Material</u>				
2. <u>CMTR or COC</u> 3. <u>Inspector's</u> <u>Certification</u>				
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1. <u>Material</u>				
2. <u>CMTR or COC</u> 3. <u>Inspector's</u> <u>Certification</u>				
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		REMARKS
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COMANCHE PEAK RESPONSI CHECKLIST				TEAM Attachment 6.2 QI-040 Rev. 1		
POPULATION DESC HVAC Ducts and Plenums	VERIFICATION PKG NO. R-M-DUPL-150		PKG NO.	PAGE 3 OF 3		
	VEI	RIFICATION	N			
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS		
Purchase Order Number:	_					
1. Material						
2. CMTR or COC						
3. Inspector's Certification						
Purchase Order Number:						
1. Material						
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3. Inspector's Certification						
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2. CMTR or COC						
3. Inspector's Certification						

		PEAK RESPON CHECKLIST	ISE TEAM	Attachment 6.3 QI-040 Rev. 1
POPULATION DESC	VERIFIC	ATION PKG	NO.	
HVAC Ducts and Plenums	R-M-DUP	PL-151	67 C R 8	PAGE 1 OF 3
QUALITY INSTRUCTION QI-040	C REIN	SPECTION		UNIT I
EQUIPMENT MARK/TAG NO. Structural Angles Material Traceability	x pocu	MENTATION	REVIEW	UNIT 2 COMMON
	VE	RIFICATION		
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS
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1. Material				
2. CMTR or COC				
3. Inspector's Certification				
Purchase Order Number:	_			
1. <u>Material</u>				
2. CMTR or COC		1.5.4		
3. Inspector's Certification				
Purchase Order Number:	_			
1. <u>Material</u>				
2. CMTR or COC				
3. Inspector's Certification				
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	COMANCHE PEAK RESPONSE TE CHECKLIST			Attachment 6.3 QI-040 Rev. 1
POPULATION DESC HVAC Ducts and Plenums	VERIFICATION PKG NO. R-M-DUPL-151			PAGE 2_ OF 3_
	VEI	RIFICATION	4	
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS
Purchase Order Number:	_			
1. Material				
2. CMTR or COC				
3. Inspector's Certification				
Purchase Order Number:	-			
1. Material				
2. CMTR or COC				
3. Inspector's Certification				
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2. CMTR or COC	1.2.4			
3. Inspector's Certification				
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2. CMTR or COC	1 1			
3. Inspector's Certification				
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HVAC Ducts and Plenums	R-M-	DUPL-151		PAGE 3 OF 3		
	VE	RIFICATION	N			
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS		
Purchase Order Number:						
1. <u>Material</u>						
2. CMTR or COC	100					
3. Inspector's Certification						
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3. Inspector's Certification						
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2. CMTR or COC						
3. Inspector's Certification						
Purchase Order Number:		1				
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2. CMTR or COC						
3. Inspector's Certification						
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	ISE TEAM	Attachment 6.4 QI-040 Rev. 1		
POPULATION DESC HVAC Ducts and Plenums	VERIFIC R-M-DUF	CATION PKG PL-152	PAGE 1 OF 3	
QUALITY INSTRUCTION QI-040 EQUIPMENT MARK/TAG NO. Nuts and Bolts Material Traceability		SPECTION	UNIT 1 UNIT 2 COMMON	
	VE	RIFICATION		
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS
Purchase Order Number: 1. <u>Material</u> 2. <u>CMTR or COC</u> 3. <u>Inspector's</u> <u>Certification</u> Purchase Order Number: 1. <u>Material</u> 2. <u>CMTR or COC</u> 3. <u>Inspector's</u> <u>Certification</u> Purchase Order Number: 1. <u>Material</u> 2. <u>CMTR or COC</u> 3. <u>Inspector's</u> <u>Certification</u>				
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	Attachment 6.4 QI-040 Rev. 1			
POPULATION DESC HVAC Ducts and Plenums	VERIFICATION PKG NO. R-M-DUPL-152		PKG NO.	PAGE 2_ OF 3_
		RIFICATION	4	DEVLOYO
ATTRIBUTE	ACCEPT	REJECT	DATE	REMARKS
Purchase Order Number:				
1. <u>Material</u>				
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2. CMTR or COC				
3. Inspector's Certification				
Purchase Order Number:	-			
1. Material				
2. CMTR or COC	1.1			
3. Inspector's Certification				
Purchase Order Number:				
1. Material		1.1		
2. CMTR or COC		1000		
3. Inspector's Certification		1		

	RESPONSE TEAM	Attachment 6.4 QI-040 Rev. 1		
POPULATION DESC HVAC Ducts and Plenums	R-M-	FICATION 1 DUPL-152	1000	PAGE 3_ OF 3_
ATTRIBUTE		RIFICATION		DEMARKO
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1. <u>Material</u>				
2. CMTR or COC				
3. Inspector's Certification				
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3. Inspector's Certification				
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