TEXAS UTILITIES GENERATING CO. CPSES	INSTRUCTION NUMBER	REVISION	ISSUE DATE	PAGE
	QI-QP-11.0-6	6	DEC 13 1982	1 of 6

INSPECTION OF GROUTING

PREPARED BY: Harry O. Williams DATE 12/6/82

APPROVED BY: C. T. Hollis DATE 12/13/82

APPROVED BY: B. C. Scott DATE 12/13/82

1.0 REFERENCES

1-A 2323-SS-9, "Concrete"

1-B CP-QP-18.0, "Inspection Report"

1-C CP-QP-16.0, "Nonconformances"

FOR INFORMATION ONLY

2.0 GENERAL

2.1 PURPOSE

This inspection outlines the methods and criteria used to verify that the placement of grout conforms to Reference 1-A.

2.2 SCOPE

This instruction applies to the grouting of base plates, bearing plates, loose lintels, equipment bases, anchor bolt pockets and other items noted on the design drawings except those which are pressure grouted using a commercial epoxy grout.

Dry packing of base plates shall be on a monitoring basis as directed by the QC Supervisor or his designee.

3.0 INSTRUCTION

[FOIA-85-59 C/328]

3.1 INSPECTION CRITERIA

3.1.1 Preplacement Inspection

The following attributes shall be verified to the extent possible, prior to grout placement:

a. Base and bearing plates are set to proper grade, leveled supported and aligned.

b. Wedges and shims are cut off flush with plates.

c. Oil, grease, dirt, loose concrete and laitance removed from concrete surface to receive grout.

d. Oil, grease, rust and mill scale removed from underside of item being set in grout.

e. Concrete surfaces kept wet for six hours minimum prior to placement of general purpose grout. Where commercial grout is used, pre-wetting or a bonding agent shall be applied as per the manufacturer's written instructions.

f. Grout card sign-off completed by crafts and engineers.

g. Forms securely anchored and of sufficient height, core bore are correct size and location.

h. Where necessary, vent holes cut with approval from the engineer.

i. Area to be grouted is vibration free.

j. Correct method of grouting selected for the particular application.

k. Temperature of general purpose grout and surfaces to receive grout is 50 to 90 degrees F. Where commercial grout is used, temperature shall meet manufacturer's written instructions.

3.1.2 Placement Inspection

The placement of grout shall be witnessed and inspected for the following attributes:

a. The proportion of materials, temperature of water and mixing time are in accordance with Reference 1-A or approved grout manufactuer's instructions.

b. Grout tamped, rodded, strapped or spaded for proper consolidation.

c. Vibration from nearby equipment avoided.

d. Grout placed continuously and contact with bottom of base plate maintained.

e. Test sample taken by TUGCO Lab.

3.1.3 Post-Placement Inspection

The QC Inspector shall verify the following post-placement requirements:

a. Curing of non-shrink grout shall be in accordance with the manufacturer's instructions.

b. All purpose grout shall be fully wet cured for at least seven days and maintained at a temperature of 50 to 90 degrees F.

c. In extreme hot or cold weather conditions, Engineering may specify special instructions for curing.

d. Grout protected from mechanical damage.

e. Temperature around grout placement is not allowed to change more then 5° in one (1) hour or 50° in 24 hours.

3.2 DOCUMENTATION

Inspections of dry packing shall be documented on an Inspection Report per Attachment 1.

Preplacement and post-placement inspections shall be documented on an Inspection Report per Attachment 2.

Curing inspections shall be documented on an Inspection Report per Attachment 3.

3.3 NONCONFORMANCES

Nonconforming conditions shall be reported in accordance with Reference 1-C.

ATTACHMENT 1

COMANCHE PEAK STEAM ELECTRIC STATION

INSPECTION REPORT

SHEET ___ OF ___ NO. 1

ITEM DESCRIPTION 2	IDENTIFICATION NO. 3	SYSTEM/STRUCTURE DESIGNATION 4
Monitor of Dry Packing		

SPEC NO. 5	REV. 6	REF QC DOC. & REV. & CHANGE NO. 7	MEASURE OR TEST EQUIP IDENT NO. 8
2323-SS-9		QI-QP-11.0-6, Rev. ___	

☐ IN PROCESS INSPECTION ☐ PRE INSTALLATION VERIFICATION ☐ INSTALLATION INSPECTION ☐ FINAL INSPECTION ☐ PRE TEST INSPECTION 9

INSP. RESULTS

☐ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY

☐ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

QC INSPECTOR ___ DATE ___ 10

ITEM NO. 11	INSPECTION ATTRIBUTES 12	SAT	UNSAT	DATE	QC SIGNATURE 13
1.	Area to receive grout is clean and free of oil, dirt, grease, paint and mill scale, Para. 3.1.1				
2.	Weldcrete properly applied, Para. 3.1.1				
3.	Mixture is in accordance with Para. 3.1.2				
4.	Grout is thoroughly tamped and care is taken to thoroughly fill space without voids or cavities and contact is against entire underside area of plate, Para. 3.1.2				
5.	Curing compound is properly applied, Para. 3.1.3				

REMARKS (DWGS, SPECS, ETC.) 14

RELATED NCR NO. 15 | I R CLOSED ___ DATE ___ SIGNATURE ___ QC INSPECTOR 16

ATTACHMENT 2

COMANCHE PEAK STEAM ELECTRIC STATION

INSPECTION REPORT

SHEET ___ OF ___

ITEM DESCRIPTION (2)	IDENTIFICATION NO. (3)	SYSTEM/STRUCTURE DESIGNATION (4)

SPEC NO. (5)	REV. (6)	REF QC DOC. & REV. & CHANGE NO (7)	MEASURE OR TEST EQUIP. IDENT. NO. (8)
2323-SS-9		QI-QP-11.0-6, Rev.	

☐ IN PROCESS INSPECTION ☐ PRE INSTALLATION VERIFICATION ☐ INSTALLATION INSPECTION ☐ FINAL INSPECTION ☐ PRETEST INSPECTION (9)

INSP. RESULTS

☐ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY

☐ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

QC INSPECTOR _____ DATE _____ (10)

ITEM NO. PRE PLACEMENT (11)	INSPECTION ATTRIBUTES (12)	SAT	UNSAT	DATE	QC SIGNATURE (13)
1.	Grout card adequately signed off, Para. 3.1.1				
2.	Area to receive grout is clean and free of loose concrete laitiance, oil, grease and dirt, Para. 3.1.1				
3.	Forms are strong secure and water tight, Para. 3.1.1				
4.	Core bore holes are correct size and location, Para.3.1.1				
5.	Proper tools and materials are available at point of placement, Para. 3.1.1				
6.	Underside of equipment is clean and free of grease, dirt, oil, and other coatings, Para. 3.1.1				
PLACEMENT					
1.	Grout proportions, mixture and temperature are in accordance with the manufacturer's instructions, Para3.1.2				
2.	Grout poured continuously and strapped and rodded for proper consolidation, Para. 3.1.2				
3.	Vibration from nearby equipment avoided, Para. 3.1.2				
4.	Test sample taken by lab, Para. 3.1.2				

REMARKS (DWGS, SPECS, ETC.)

LOT # _____

Bag Grout Temp:
Water Temp:
Area Temp:
Grout Temp: (14)

RELATED NCR NO (15) | I.R. CLOSED ☐ DATE | SIGNATURE _____ QC INSPECTOR (16)

ATTACHMENT 3

COMANCHE PEAK STEAM ELECTRIC STATION

INSPECTION REPORT

SHEET ___ OF ___ NO. 1

ITEM DESCRIPTION 2	IDENTIFICATION NO. 3	SYSTEM/STRUCTURE DESIGNATION 4
SPEC NO. 2323-SS-9 5	REV. 6	REF QC DOC. & REV. & CHANGE NO. QI-QP-11.0-6, Rev. 7
MEASURE OR TEST EQUIP. IDENT. NO. 8		

☐ IN PROCESS INSPECTION ☐ PRE INSTALLATION VERIFICATION ☐ INSTALLATION INSPECTION ☐ FINAL INSPECTION ☐ PRE TEST INSPECTION 9

INSP. RESULTS

☐ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY

☐ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

QC INSPECTOR _____ DATE _____ 10

ITEM NO. 11	INSPECTION ATTRIBUTES 12	SAT	UNSAT	DATE	QC SIGNATURE 13
1.	Curing of nonshrink grout shall be in accordance with manufacturer's instructions, Para. 3.1.3				
2.	Grout protected from mechanical damage by location and barrier, Para. 3.1.3				
3.	All purpose grout shall be set cured for at least seven days, Para. 3.1.3				
4.	Temperature around grout not allowed to change more than 5^0 in one (1) hour or 50^0 in 24 hours, Para. 3.1.3				

REMARKS (DWGS, SPECS, ETC.)

POUR TOPPED OUT AT _____ ON _____ 14

RELATED NCR NO. 15 | I.R. CLOSED ☐ DATE _____ SIGNATURE _____ QC INSPECTOR 16

TEXAS UTILITIES GENERATING CO. CPSES	INSTRUCTION NUMBER	REVISION	ISSUE DATE	PAGE
	QI-QP-11.0-5	3	DEC 13 1982	1 of 7

INSPECTION OF CONCRETE REPAIR

PREPARED BY: Harry O. Williams 11/17/82 DATE

APPROVED BY: C. T. Hurst 12/13/82 DATE

APPROVED BY: B. C. Scott 12/13/82 DATE

1.0 REFERNECES

1-A Specification 2323-SS-9, "Concrete"

1-B 35-1195-CCP-12, "Concrete Finishing, Finishing and Preparation of Construction Joints"

2.0 GENERAL

FOR INFORMATION ONLY

PURPOSE AND SCOPE

To describe the method for QC inspection of repairs to concrete surface defects and defective concrete to ensure compliance with Reference 1-A.

FOIA-85-59
C/329

2.2 DEFINITIONS

2.2.1 Concrete Surface Defects

Surface defects shall be defined as minor air pockets, tie holes, honeycombing, sand streaking and, where subsequent coatings are to be applied, from fins and protrusions.

2.2.2 Defective Concrete

Surface defects shall be considered defective when, during removal to sound concrete, reinforcing steel is exposed.

3.0 INSTRUCTION

3.1 VISUAL CHECK OF CONCRETE SURFACES

a. Immediately upon form removal, the QC Inspector shall visually inspect the concrete surface for defects as defined in Paragrpah 2.2.

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HISTORICAL FILE

b. If surface defects are noted, the QC Inspector shall verbally notify B&R Construction to repair the defect in accordance with existing procedures.

c. If defective concrete is noted upon removal, or rebar is exposed after chipping to sound concrete for surface repairs, it shall be documented by the QC Inspector on the Defective Concrete Report (Figure 1) or a Nonconformance Report. The NCR will be issued when requiring engineering evaluation prior to doing any chipping to the defective area.

3.2 INVESTIGATION OF DEFECTIVE CONCRETE

a. The QC Inspector shall submit the Defective Concrete Report (Figure 1) to the Civil Inspection Supervisor/ Designee for review and investigation of the defect.

b. If the defect is of a unique nature, it will be so noted by the Civil Inspection Supervisor/Designee in the disposition portion of Figure 1. The cognizant QC Inspector will then issue a Nonconformance Report.

c. If the defect is routine in nature, the Civil Inspection Supervisor/Designee will denote in the disposition portion of Figure 1, the applicable sections of Reference 1-B to be used for the repair work.

3.3 DEFECTIVE CONCRETE REPAIR PROCEDURE

For repairs indicated to be unique in nature on the Defective Concrete Report (Figure 1), B&R Construction will establish a repair procedure (disposition) in response to the Nonconformance Report and submit to the TUSI Resident Manager for review and approval.

3.4 INSPECTION

3.4.1 Defective Concrete Repairs

The Civil Inspection Supervisor/Designee shall review the approved defective concrete repair procedure and direct the cognizant QC Inspector to prepare a checklist on the Inspection Report (Figure 2), to ensure compliance with the approved procedure. The following inspection items will be verified:

a. Reference to approved repair procedure

b. Date of repair, location and name of inspector

c. Preparation of affected area

1. Chipped to sound concrete

2. No feather edging

3. Area clear of debris, oil, grease and dirt

d. Inspection of bonding material, proportioning and mixing

e. Proper tools and material, form securely anchored and water tight

f. Grout preparations mix time and temperature are in accordance with manufacturer's instructions

g. Dry pack mixture is in accordance with Reference 1-A

h. Vibration from nearby equipment avoided

i. Test sample taken by TUGCO Lab

j. Curing

Curing for grout shall be as per manufacturer's instructions. Dry pack shall be protected by use of an approved curing compound. Temperatures around the repair area are not allowed to change more than 5° in one hour or 50° in 24 hours.

3.4.2 Surface Defect Repairs

An in-process monitor of routine surface defect reapirs will be conducted by all Civil QC Inspectors to ensure that only specified materials, surface preparation, placing techniques and curing methods are being used.

3.5 DOCUMENTATION

3.5.1 Defective Concrete Repairs

a. The QC Inspector shall verify the satisfactory performance of the checklist items on the Inspection Report (Figure 2) and submit it to the Civil Inspection Supervisor/Designee.

b. The QC Inspector shall verify satisfactory completion of the repairs by signing the "Verification" portion of the Nonconformance Report.

3.5.2 Surface Defect Repairs

The Civil QC Coordinator shall verify a continuing in-process monitor of routine surface defect repairs in his area by submitting an Inspection Report to the Civil Inspection Supervisor/Designee when so directed.

FIGURE 1

DEFECTIVE CONCRETE REPORT

PROJECT: CPSES JOB NO. 35-1195 UNIT: PAGE OF

STRUCTURE: _____

POUR NO: _____ DATE OF POUR: _____

1. TYPE OF DEFECT:
   - A. REBAR EXPOSED DURING PREPARATION FOR SURFACE DEFECT REPAIR ☐
   - B. REBAR EXPOSED UPON FORM REMOVAL ☐
   - C. LINEAR FRACTURE WITH EXTENT UNKNOWN ☐

2. LOCATION OF DEFECT:
   - A. MAT ☐
   - B. ELEVATED SLAB BOTTOM ☐ TOP ☐
   - C. WALL ☐
   - D. CURB ☐
   - E. BEAM BOTTOM ☐ SIDE ☐
   - F. COLUMN ☐
   - G. BLOCKOUT ☐
   - H. OTHER ☐

3. EXTENT OF DEFECT:
   - A. SIZE: LENGTH____WIDTH____DEPTH____
   - B. NUMBER OF REBAR EXPOSED_____

4. DESCRIPTION:

_____

_____

_____

_____

_____

_____ _____
DATE QC ENGINEER/INSPECTOR

5. DISPOSITION: _____
   - A. NON-ROUTINE REPAIR; DOCUMENT WITH N.C.R. ☐
   - B. ROUTINE REPAIR IN ACCORDANCE WITH SECTIONS _____ OF CCP-12 ☐

_____ _____
DATE CIVIL INSPECTION SUPERVISOR

FIGURE 2

COMANCHE PEAK STEAM ELECTRIC STATION

INSPECTION REPORT

SHEET ___ OF ___ NO. 1

ITEM DESCRIPTION 2	IDENTIFICATION NO. 3	SYSTEM/STRUCTURE DESIGNATION 4
Grout Repair of Defective Areas		

SPEC. NO. 5	REV. 6	REF. Q.C. DOC. & REV. & CHANGE NO. 7	MEASURE OR TEST EQUIP. IDENT. NO. 8
2323-SS-9		QI-QP-11.0-5, Rev.	

☐ IN PROCESS INSPECTION ☐ PRE INSTALLATION VERIFICATION ☐ INSTALLATION INSPECTION ☐ FINAL INSPECTION ☐ PRETEST INSPECTION 9

INSP. RESULTS

☐ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY

☐ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

QC INSPECTOR _____ DATE _____ 10

ITEM NO. 11	INSPECTION ATTRIBUTES 12	SAT	UNSAT	DATE	QC SIGNATURE 13
1.	Construction procedures approved at work area				
	CCP-12, Para. 3.4.1				
2.	Surface Preparation, Para. 3.4.1				
	1) Chipped to sound concrete				
	2) No feathered edges				
	3) Area clean of debris, oil, grease and dirt				
3.	Area to receive grout treated with Weldcrete as bonding agent, Para. 3.4.1				
4.	Proper tools an materials at site, Para. 3.4.1				
5.	Forms strong secure and water tight, Para. 3.4.1				
PLACEMENT					
1.	Grout preparations mixtime and temperature are in accordance with manufacturer's instructions, Para. 3.4.1				
2.	Dry pack mixture is in accordance with Ref.1-A,Para.3.4.1				
3.	Vibration from nearby equipment avoided. Para. 3.4.1				
4.	Test sample taken by lab, Para. 3.4.1				

REMARKS (DWGS, SPECS, ETC.) 14

Temp:
Bag Grout:
Mix Water:
Area:
Grout:

RELATED NCR NO. 15 | I R CLOSED ☐ DATE _____ SIGNATURE _____ QC INSPECTOR 16

FIGURE 3

COMANCHE PEAK STEAM ELECTRIC STATION

INSPECTION REPORT

SHEET ___ OF ___ NO. 1

ITEM DESCRIPTION 2	IDENTIFICATION NO. 3	SYSTEM / STRUCTURE DESIGNATION 4
Curing of Defective Area's Repair		

SPEC NO. 5	REV. 6	REF Q.C. DOC. & REV. & CHANGE NO. 7	MEASURE OR TEST EQUIP. IDENT. NO. 8
2323-SS-9		QI-QP-11.0-5, Rev.	

☐ IN PROCESS INSPECTION ☐ PRE INSTALLATION VERIFICATION ☐ INSTALLATION INSPECTION ☐ FINAL INSPECTION ☐ PRE TEST INSPECTION 9

INSP. RESULTS

☐ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY

☐ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

QC INSPECTOR _____ DATE _____ 10

ITEM NO. 11	INSPECTION ATTRIBUTES 12	SAT	UNSAT	DATE	QC SIGNATURE 13
1.	Dry pack shall be protected form premature drying by use of curing compound, Para. 3.4.1				
2.	Grout shall be cured as per manufacturer's instructions, Para. 3.4.1				
3.	Grout protected from mechanical damage by location and barrier, Para. 3.4.1				
4.	Temperature around grout not allowed to change more than 5^0 in one hour or 50^0 in 24 hours, Para. 3.4.1				

REMARKS (DWGS, SPECS, ETC.)

Pour topped out at _____ on _____ 14

RELATED NCR NO. 15	I R CLOSED ☐	DATE	SIGNATURE QC INSPECTOR 16