

WM & ROOT, INC. CPSES	PROCEDURE NUMBER	REVISION	EFFECTIVE DATE	PAGE
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TITLE: ^{OCN#1} DCU#2 #3	ORIGINATOR	<u>Mark Wells</u>	<u>3/4/84</u>	Date
PROTECTIVE COATING OF CONCRETE SURFACES	REVIEWED BY:	<u>W. K. ...</u> QA/QC	<u>3/4/84</u>	Date
	APPROVED BY:	<u>[Signature]</u> CONSTRUCTION PROJECT MGR	<u>3-4-84</u>	Date

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**FOR OFFICE AND
ENGINEERING USE ONLY**

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DUE TO EXTENSIVE REVISIONS CHANGE BARS WERE OMITTED



JOB 35-1195

COMANCHE PEAK STEAM ELECTRIC STATION

Construction Procedure
DOCUMENT CHANGE NOTICE NUMBER 3

Notice applicable to Construction Procedure No. 35-1195- CCP-40 Rev. 7

This change will be incorporated in the next revision of the procedure.

Change the procedure as follows:

Please replace the following with the attached:

Page 2 of 14
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Reviewed by:

Mark Wells 6/27/84 NT 6/26/84
Originator Date Brown & Root Quality Assurance Date

Approved by:

Fred C. ...
TUGCO Quality Assurance Date

F. C. ... 6-27-84 6/27/84
Construction Project Manager Date Effective Date



JOB 35-1195

COMANCHE PEAK STEAM ELECTRIC STATION

Construction Procedure
DOCUMENT CHANGE NOTICE NUMBER 2

Notice applicable to Construction Procedure No. 35-1195- CCP-40 Rev. 1

This change will be incorporated in the next revision of the procedure.

Change the procedure as follows:

Please replace the following pages with the attached:

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Reviewed by:

Mark Wells 6/19/84
Originator Date

A. M. K. 6/19/84
Brown & Root Quality Assurance Date

Approved by:

M. F. Eise 7/3/84
TUGCO Quality Assurance Date

R. C. ... 7-3-84
Construction Project Manager Date

07/03/84
Effective Date



JOB 35-1195

COMANCHE PEAK STEAM ELECTRIC STATION

Construction Procedure
DOCUMENT CHANGE NOTICE NUMBER 1

Notice applicable to Construction Procedure No. 35-1195-CCP 40 . Rev. 7

This change will be incorporated in the next revision of the procedure.

Change the procedure as follows:

Please replace the following pages with the attached:

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and add Attachment 5 with the following:

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page 2 of 5
page 3 of 5
page 4 of 5
page 5 of 5.

Reviewed by:

Mark Welle 3/13/84
Originator Date

N/A M.W. 3/12/84
Brown & Root Quality Assurance Date

Approved by:

M. K. ... 3/13/84
TUGCO Quality Assurance Date

R.C. ... 3-14-84
Construction Project Manager Date

March 14, 1984
Effective Date



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1.0 INTRODUCTION

1.1 PURPOSE

1.1.1 The purpose of this procedure is to establish the methods by which the surfacer and finish coats are to be applied to concrete surfaces in accordance with specification, drawing, and manufacturer's requirements.

1.2 SCOPE

1.2.1 The scope of this procedure covers the surface preparation and coating of concrete surfaces inside the reactor building and radiation area as delineated by Reference 1.

1.3 GENERAL DISCUSSION

1.3.1 All coating materials addressed by this procedure shall be as manufactured by Imperial Professional Coating of New Orleans, Louisiana. The coating system will consist of a surfacer of Nutec #11S, touch-up with Nutec #11 surfacer as required and a finish coat of Nutec #1201.

In areas where the concrete surface to be coated exhibits only minor amounts of "bug holes" and surface imperfections, Nutec #11S surfacer may be omitted with the use of Nutec #11 as the primary surfacer prior to topcoating with Nutec #1201. In order to prevent finish coat damage, the finish coat will normally be applied as close as possible to turn-over of the area to the owner or as required due to the setting of equipment or other items which would make an area inaccessible. Any permanent equipment located in the area to be coated will be adequately protected from contamination caused by surface preparation or coating application.

Where there is a conflict between this procedure and Reference 1, the requirements of Reference 1 shall prevail.

2.0 DEFINITIONS OF TERMS, ABBREVIATIONS AND SYMBOLS

2.1 TERMS

2.1.1 Substrate - The uncoated surface to which a coating is applied.

2.1.2 Pinhole - A minor discontinuity in the coating film which exposes the primer or substrate.

2.2 ABBREVIATIONS

2.2.1 WFT - Wet film thickness



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3.0 SPECIAL ITEMS AND OPERATIONS

3.1 QUALIFICATION OF PERSONNEL

3.1.1 Coating Application Personnel shall be qualified per previous experience and/or demonstrated ability. In addition, each applicator shall have been certified by the Paint Department Superintendent or his representative per technical data and demonstrated ability. Application procedures shall be in compliance with this procedure. This shall be verified by completing a form similar to Attachment 1 which will be executed by the BGR Paint Superintendent or his representative. A coating manufacturer's representative will be available for technical supervision upon initial painting effort.

3.2 SAFETY REQUIREMENTS

3.2.1 All appropriate health, safety, and fire protection requirements pertaining to surface preparation and coating application shall be followed. It shall be the responsibility of the Safety Department representative who will be present to randomly monitor safety during coating application.

3.3 INSTRUMENTS AND THEIR USE

3.3.1 The Painting Foreman and General Foreman shall have access to and be familiar with the use of thermometers, wet film gauges, and psychrometers for measuring relative humidity. Viscosity measuring devices will not be used. Wet film gauges will be randomly used during coating application; readings will be limited to the minimum necessary to control coating thickness.

3.4 DOCUMENTATION

3.4.1 Records shall be maintained on Attachment 1 and 4 listed in Section 5.1. After completion, each form shall be forwarded to The Brown & Root Document Control Center for filing and distribution to the various parties as listed on the distribution list.



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3.5 RECEIVING, STORAGE AND DISPENSING OF COATING MATERIALS				
3.5.1 Receiving and Storage				
<p>3.5.1.1 Upon receipt of a shipment of coating materials, the B&R QC Representative accepting shipment shall be responsible for completing all necessary receiving inspection documentation. General receiving procedures shall be in accordance with Brown & Root Construction Procedure CP-CPM 8.1. It shall then be segregated from "Non-Q" materials and stored in the Paint Storage Building where temperatures will be maintained between 40°F and 100°F. Rises in air temperature up to 120°F is acceptable for as long as fourteen days (Accumulative). Infrequent dips (for periods not to exceed 24 hours) in air temperature in storage areas as low as 33°F is acceptable; however, prior to application the coatings shall be brought back into the 50° - 90° range. Temporary storage may be required at the Receiving Warehouse due to road conditions or other problems.</p>				
3.5.2 Dispensing				
<p>3.5.2.1 When coating materials are needed in the field, it shall be transferred from the controlled area to a designated temporary storage area or a designated use in the field. Due to limited shelf-life of coating materials, this shall be done on a "first-in" "first out" basis. Coating materials have been partially used from an individual container, the said container cannot be resealed and returned to "Q" storage area for later use. Containers opened and partially distributed from the "Q" paint storage area may be resealed and the remaining contents used for "Q" painting.</p>				
3.6 Special Coating Procedure				
<p>3.6.1 When items require special coating not covered under the content of this procedure, Attachment 4 shall be completed by the Protective Coatings engineer and transmitted to painting superintendent for construction. Special coatings procedures issued via Attachment 4 shall be attached to this procedure after completion.</p>				
<p>3.6.2 Special Coating Procedures added by Attachment 4 shall receive a unique identification number issued in sequence beginning with C-1. The scope of the procedure shall describe the working limits of the special procedure with pertinent storage and coating requirements listed under the requirements section. The approvals section shall have the signatures of the Project Civil Engineer, TUGCo QA Manager, if safety related, Originator, and the Construction Project Manager. Each procedure shall exhibit the revision number and issue date.</p>				



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4.0 PROCEDURE

4.1 PREPARATION OF SUBSTRATES AND COATING MATERIALS

4.1.1 Preparation of Surfacers

4.1.1.1 Normal surface preparation shall consist of water blasting with 4,000 P.S.I. to 10,000 P.S.I. Additionally, surface preparation may be accomplished by the use of approximately 2,500 P.S.I. water blasting with sand injection, acid etching with an Imperial recommended solution, or straight sand blasting. Any heavy oil or grease deposits shall be removed by steam cleaning, trisodium phosphate washing with a mixture of 3-6 pounds T.S.P. per gallon of water, or use of an Imperial recommended detergent.

Following surface preparation, the surface shall be free of construction dust, laitance, and loose deposits. If cleaning does not remove oil and grease, the contaminated concrete surface will be chipped away and patched before coating. All T.S.P. cleaned areas will be flushed with clean water. Holes or voids in the concrete surface that exceed 1/2" in depth shall be repaired with drypack or epoxy grout. Detrimental surface irregularities such as projections, fins, or ridges shall be reduced by bushhammering, power grinding, or stoning. Wood particles of "fuzz" remaining after water blasting is acceptable. Recommended surface preparation shall include power tools which are capable of removing laitance and curing membranes from concrete surfaces.

4.1.1.2 Markings on concrete: Before application of 11S, 11 or 1201, all markings (ink, pencil, chalk, or felt tip markers) on wall and floors shall be solvent wiped in accordance with SSPCSP1 using DL6A or commercially available MEK or Xylo1. Marking paint (surveyor marks) shall be removed by solvent wiping, water blasting, sandblasting, or power tool cleaning. Discolored coatings due to aging or stains shall be abraded and solvent wiped to remove the discoloration. Residual marking or discoloration remaining in pores below the plane of the surface is acceptable.

4.1.1.3 Repair of embedded foreign objects: Embedded foreign objects such as nails, rebar chairs and plastic endcaps on rebar chairs, bolts, wood, or plastic shall be repaired per the following guidelines before application of the surfacer.



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1. Objects protruding from the surface shall be ground or cut smooth until the object is flush with the concrete surface prior to application of the surfacer.
2. If the object is loosely adhered in the concrete, it shall be removed (in case of wood splinters or wood "fuzz" an attempt shall be made to remove by high pressure water blasting). Refer to section 4.1.1.1.
3. Metal objects larger than four square inches shall be coated with an inorganic zinc primer in accordance with CCP-30.
4. Objects which are recessed to a depth greater than 1/2" shall be repaired using a "dry pack" or epoxy grout.

4.1.1.4 Surface appearance - Surface smoothness or "glossy" appearance in concrete will not be detrimental to the performance of the surfacer providing the concrete surface is free of water, oil, grease, laitance, efflorescence, deleterious curing membranes, or other contaminants as outlined in this procedure. If NUTEC 10 curing membrane is present with sufficient thickness to yield a glossy appearance, the surface shall be abraded to "roughen" the NUTEC 10 prior to application of surfacer.

4.2 PREPARATION OF COATING MATERIALS

4.2.1 Surface Coat

4.2.1.1 Nutec #11S Surfacer is packaged in a three component kit consisting of a base, curing agent, and filler. The base and curing agent shall be thoroughly mixed first. If necessary, box the mixture to assure that all the base and cure has been used. The filler shall then be slowly added under constant agitation and mixed until a smooth blend is achieved. Partial mixes for Nutec #11S shall be in accordance with attachment 2. Nutec #11 Surfacer is also packaged in a three component kit and is prepared in the same manner as Nutec #11S. No provision is given for partial mixes of Nutec #11 Surfacer.

4.2.2 Finish Coat

4.2.2.1 The finish coat, NUTEC #1201, is a two component epoxy topcoat consisting of a base and cure. These shall be thoroughly mixed under constant agitation until a homogenous blend is achieved. Partial mixes of NUTEC #1201 shall be in accordance with Attachment 3. Minimum induction times shall be as follows:



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TEMPERATURE °F

50-59
60-69
70-79
80-90
91-100

INDUCTION TIMES

45 min.
30 min.
20 min.
10 min.
NONE

4.3 APPLICATION OF SURFACER & FINISH COATING

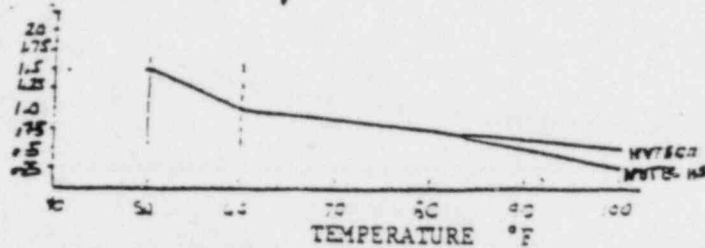
4.3.1 Surfacers Coat

4.3.1.1 Coating material shall be applied using a bottom feed conventional pressure pot-mastic gun arrangement. To facilitate application on areas such as floors and for repair work, trowel, squeegee or float application without the use of the mastic arrangement may be used. Under normal conditions, the concrete surface shall be allowed to cure a minimum of 28 days prior to application of protective coatings. If coatings are to be applied to pourbacks or grouting to which Nutec 10 has been applied as a curing compound, coating may be performed after a minimum of 6 days elapse time from the NUTEC 10 application. Cosmetic repair patching to concrete and grout under base plates which have 3 square feet or less of exposed grout, may be protectively coated if Nutec 10 is applied as a curing compound and the Nutec has cured in accordance with special coating procedure C-1. If other curing methods are utilized for cosmetic patches or grout under base plates as stated above, coating shall not proceed until the required curing time per CCP 12 has been satisfied. Abandoned hilti bolt holes and tie holes which are patched per CCP-12 may be coated after initial setting of the patch. Material shall be applied until the concrete surface is completely covered, with extra material being added to large holes or depressions. A single blade rubber squeegee is then used to smooth out the material. Care shall be taken to eliminate as many pinholes as possible by use of a back and forth motion. Application parameters shall be as follows:

1. Minimum and maximum values of surface and ambient temperatures shall be between 50°F and 100°F. Infrequent dips in temperature to 40°F is permissible during application and/or cure; however, the elapsed time the temperature is below 50°F shall be added to the cure time. Application of the coating shall not begin unless the dew point is 5°F above the surface temperature.



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Pot lives shown above are the recommended times and should be utilized as a guideline for coating usage time, actual pot life is determined by the applicability of the coating. This applies to thinned and unthinned coatings.

2. Humidity may vary as high as 100%; however, free standing water shall be removed. Coating application over a damp surface is permissible. Under no condition shall the surfacer be applied to a surface containing free standing water. Free standing water may be identified by:
 - a. Reduced viscosity of the surfacer during application, and excessive sagging from bug holes.
 - b. Wet rings around bug holes.
 - c. Failure of the surfacer to adhere to the substrate during the squeegeeing or trowelling process.
 - d. Visible signs of surface water.
 - e. Running hand over the surface resulting in moisture on the hand.
 - f. Product instability resulting in white streaks.
3. Thickness of the surfacer for service Level I and II is as stated in section 4.3.1.2.
4. Tack free times shall be as follows:

TEMPERATURE °F	#11	#11S
50-59	6 hrs.	8 hrs.
60-79	4 hrs.	6 hrs.
80-99	2 hrs.	4 hrs.
100	1 hr.	2 hrs.



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5. Curing time shall be as follows:

<u>TEMPERATURE °F</u>	<u>CURING TIME BEFORE TOPCOATING WITH 1201</u>
50-59	72 hrs.
60-69	48 hrs.
70-79	24 hrs.
80-89	18 hrs.
90-100	12 hrs.

<u>TEMPERATURE °F</u>	<u>FULL CURE 11, 11S</u>
50-59	10 days
60-69	8 days
70-79	7 days
80-89	6 days
90-100	5 days

No appreciable cure takes place below 50°F, therefore, maintain area coated above 50°F. Infrequent dips in temperature to 40°F is permissible; however, duration below 50°F shall be added to cure time.

6. The Nutec surfacer may have additional surfacer applied when the initial coat has dried such that the paint will not adhere to the thumb when downward pressure is exerted on the paint film while turning a 90° angle. (This does not apply to a multi-pass application method). Drying time will vary with various film thicknesses. At thicknesses greater than 35 mils for 11S, a minimum of 24 hours cure shall be obtained prior to additional surfacer application.
7. To prevent surfacer damage, a minimum of 24 hours should elapse prior to allowing foot traffic, and full cure prior to allowing material laydown.
8. Thinning of #11S is not normally required; however, at lower temperatures, it is permissible to thin up to 5% by volume with Imperial's DL-54 thinner.



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4.3.1.2 Coating thickness requirements: Thickness requirements per coat are as follows:

Service Level 1

NUTEC 11S	10-35 Mils
NUTEC 11	3-20 Mils
NUTEC 1201	3-16 Mils

Areas other than Service Level 1

NUTEC 11S	10-60 Mils
NUTEC 11	3-20 Mils
NUTEC 1201	3-16 Mils

- 4.3.1.3 Repair and recoating of the surfacer - Remove all loose coating and concrete by sanding or wire brushing and feather edge adjacent to the coating. The area shall then be blown off with compressed air, washed with water or DL-54 thinner (Non-Q acceptable) and coated with NUTEC 11S or NUTEC 11 until the desired film thickness is achieved.
- 4.3.1.4 Repair of pinholes, blowholes, or overworked areas - Remove any contaminants by compressed air or clean water. Apply NUTEC 11 to the defective area and work back and forth to fill in area. NUTEC #11S surfacer may be smoothed by spraying a mist of Imperial DL-54 thinner on the #11S film 15-30 minutes after its application. By using a trowel or squeegee, the solvent can be worked over the surface to smooth or polish the film, thus eliminating the defects due to overworking of the 11S.
- 4.3.1.5 Mudcracking - Area shall be repaired by means of grinding, sanding, or wire brush. The area will then be blown down with compressed air and then wiped with DL-54 thinner.
- 4.3.1.6 Repair of sags and runs - Inside containment, runs or sags shall be abraded down to adjoining thickness. Outside containment, if coating is sound, sags and runs need not be repaired.
- 4.3.1.7 Repair of contamination - Contamination shall be removed by abrading. If pinholes and discontinuities exist, then area shall be repaired in accordance with Section 4.3.1.4.
- 4.3.1.8 Treatment of stains - Remove residue, though not necessarily the stain, with bristle brush and water or Imperial Thinner #DL-54.
- 4.3.1.9 Treatment of interfaces with other coatings - Interfaces with projecting coated items shall be constructed by abutting the surfacer up to the projecting item. Interfaces with flush mounted coated items shall be constructed by feathering the surfacer into the coated item.



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4.3.1.10 Repair of scorched areas - If the concrete is not damaged, scorched areas shall be repaired by abrading the surface until the discolored area is removed. Visual inspection of the area shall be conducted to assure the area is acceptable. The area should then be coated with 11 or 11S as appropriate.

4.3.1.11 Coating of expansion joints - Expansion joints shall not be coated. Coatings will be feathered back at the edges.

4.3.1.12 Repair of scratches and/or damages - Any scratches or damaged areas shall be abraded until loosely adherent particles are removed. The following minimum coating requirements shall be maintained for damages extending to concrete:

Damage $\frac{1}{2}$ " or less regardless of length - no additional surfacer required prior to topcoat.

Damage greater than $\frac{1}{2}$ " in width regardless of length - Normal coating system required.

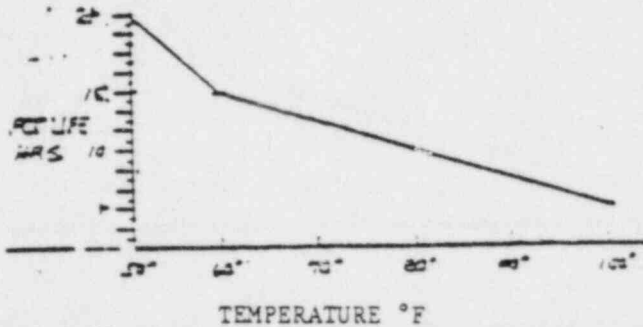
4.3.2 Finish

4.3.2.1 Finish coat shall be applied by brush, roller, conventional or airless spray methods. If brush or roller application is used, care must be taken to ensure a smooth uniform finish surface. The material shall be allowed to become "tack free" before any other construction operations proceed which could create contamination by dust or other foreign matter. Pinhole criteria shall be in accordance with NACE T-6F-3, condition "B" in Service Level I areas and condition "C" for Service Level II areas. Any runs or sags having a detrimental effect on the coating system shall be removed and repaired. The following application parameters shall govern:

1. The permissible range of surface and ambient temperature shall be between 50°F and 100°F. Infrequent dips in temperature to 40°F is permissible during application and/or cure; however, the elapsed time the temperature is below 50°F shall be deducted from the cure time. Application shall not begin unless the surface temperature is at least 5°F above the dew point. If increased workability is desired, Reactive #1201 may be thinned up to 30% by volume with Imperial DL-6A thinner. It is normally advisable to use more thinner at lower temperatures and when using conventional spray equipment.



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Pot life shown above is the recommended time and should be utilized as a guideline for coating time, actual pot life is determined by the applicability of the coating. This applies to thinned and unthinned coatings.

2. Thickness of 1201 topcoat for Service Level I and Service Level II areas shall be as specified in Section 4.3.1.2.
3. Coating materials shall be applied as a heavy, wet coat in even, parallel passes, overlapping each pass approximately 50%.
4. Recoating time of NUTEC #1201 is 24 hours.
5. Tack free time is as follows:


TEMPERATURE °F	TACK FREE TIME
50	8 hrs.
60	4 hrs.
80	2 hrs.
100	1 hr.

6. Full cure time is as follows:

TEMPERATURE °F	FULL CURE TIME
50-59	11 days
60-79	8 days
80-99	7 days
100	5 days

It is recommended that NUTEC 1201 not be subjected to personnel foot traffic until a minimum of 24 hours after application elapses and sufficient cure of the coating has taken place to enable the coating to withstand said traffic. At temperatures below 50°F little or no curing will take place, therefore for curing purposes maintain temperature during cure above 50°F.



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4.3.2.2	Repair of runs and sags - Runs or sags showing evidence of cracking shall be removed. Runs or sags inside Service Level I areas which exhibit no other coating defects, shall be abraded to the thickness of adjoining coating. Runs or sags outside Service Level I areas which exhibit no other coating defect need not be removed.			
4.3.2.3	Repair of contamination - Contamination shall be removed by abrading. Repair as necessary to meet film thickness requirements.			
4.3.2.4	Repair of pinholes and discontinuities - Any loose particles shall be removed by brushing, vacuum or compressed air. The pinholes and discontinuities shall then be repaired by use of a brush or squeegee. Pinholes and small discontinuities may be repaired at time of final inspection without a later reinspection of the repair. If the repaired coating will be subjected to a high moisture environment after placement into service, the placement into service shall not be made until full cure of the repair.			
4.3.2.5	Repair of scratches and damaged Areas - Any scratches or damaged areas shall be abraded to remove loosely adherent particles. Coating repair criteria shall be, as a minimum, as stated in Section 4.3.1.12.			
4.3.2.6	Treatment of stains - If the topcoat surface exhibits stains, the area shall be cleaned by the use of bristle brush and water or cleaning solution or solvent wiping with DL-6A thinner. Any remaining stains not acceptable from a cosmetic viewpoint may be covered by a light overcoat of NUTEC #1201.			
4.3.2.7	Repair and touch-up - For repair and/or touch-up purposes, Nutec #115 or #11 surfacer may be placed over the initial system as required to complete the required repair or touch-up.			
	NOTE: Roughen the topcoat, if present, by sanding, or stoning prior to applying repair surfacer.			
4.3.2.8	Treatment of dry spray - Minor amount of tightly adhering dry spray is acceptable on the final finish coat and no repair is required.			
4.3.2.9	Treatment of Orange Peel - Moderate orange peel in the coating is acceptable and no repair is required.			
4.4	FINAL ACCEPTANCE TESTING			
4.4.1	Full cure of the coating system shall be maintained prior to testing and/or inspection for other than visual inspection. Final acceptance inspection may be performed, when visual inspection only is required, after topcoat has cured per paragraph 4.3.2.1(4).			
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After final inspection, and resolution of all discrepancies are completed, the inspector shall document the final acceptance by completing and signing the Final Acceptance Record and will transmit a copy of this record to the B&R Paint Superintendent as soon as possible after final acceptance is made.

NOTE: Minor repairs limited to repairs of 4 square inches or less and requiring topcoat only, may be performed at the time of final inspection without later reinspection of the repair.

4.5 HOLD POINTS

4.5.1 On-site receipt of coating material.

4.5.2 Substrates before preparation if blasting or bush hammering is to be utilized and following all methods of preparation.

4.5.3 Mixing and preparation of coating material for application.

4.5.4 Film characteristics after drying and curing.

4.5.5 Control of ambient conditions and surface temperatures during all phases of the coating work.

5.0 SUPPORTING INFORMATION

5.1 ATTACHMENTS

1. Painter Qualification Record
2. Table for Partial Mixes of NUTEC 11S
3. Table for Partial Mixes of NUTEC #1201
4. Special Coating Procedure
5. Special Coating Procedure C-1

5.2 REFERENCES

1. Gibbs & Hill Specification 2323-AS-31, "Protective Coating" Latest Revision
2. Steel Structures Paint Council, Vol.2, Second Edition
3. Imperial Data Sheet NUTEC #11S and NUTEC #1201, Dated 7/77
4. NACE Publication T-6F-3



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ATTACHMENT 1

BROWN & ROOT, INC.
COMANCHE PEAK STEAM ELECTRIC STATION

Painter Qualification Record

GENERAL DATA

Date _____ Report Number _____

TECHNICAL DATA

Name of Painter _____

Summary of Field Experience _____

Experience with Following Product Types _____

Application Test for Specified Substrate _____

Additional Qualifications (School) _____

Signature _____

Applicator's Field Supervisor

Distribution: Painting Supt.
Q.C. Department
Tugco QA Vault (Original)



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ATTACHMENT 2

NUMEE 11s

	BASE		CURE		FILLER		PERMISSIBLE THINNER	
	lbs.	oz.	lbs.	oz.	lbs.	oz.	pts.	oz.
0 Gal. - 1 Qt.		10.6	0	6.3	0	0	0	1.6
0 Gal. - 2 Qt.	1	5.1	0	12.6	6	0	0	3.2
0 Gal. - 3 Qt.	1	15.7	1	3	9	0	0	4.8
1 Gal. - 0 Qt.	2	10.2	1	9.3	12	0	0	6.4
1 Gal. - 1 Qt.	3	4.8	1	18.6	15	0	0	8
1 Gal. - 2 Qt.	3	15.4	2	6.9	18	0	0	9.6
1 Gal. - 3 Qt.	4	9.9	2	12.2	21	0	0	11.2
2 Gal. - 0 Qt.	5	4.5	3	2.5	24	0	0	12.8
2 Gal. - 1 Qt.	5	15.0	3	3.3	27	0	0	14.4
2 Gal. - 2 Qt.	6	9.6	3	15.2	30	0	0	16
2 Gal. - 3 Qt.	7	4.2	4	5.5	33	0	1	1.6
3 Gal. - 0 Qt.	7	14.7	4	11.8	36	0	1	3.2
3 Gal. - 1 Qt.	8	9.3	5	2.2	39	0	1	4.8
3 Gal. - 2 Qt.	9	3.8	5	3.9	42	0	1	6.4
3 Gal. - 3 Qt.	9	14	5	14.3	45	0	1	8
4 Gal. - 0 Qt.	10	9	5	5.1	48	0	1	9.6
4 Gal. - 1 Qt.	11	3.8	5	11.4	51	0	1	11.2
4 Gal. - 2 Qt.	11	14.1	7	1.8	54	0	1	12.8
4 Gal. - 3 Qt.	12	8.8	7	6.1	57	0	1	14.4
5 Gal. - 0 Qt.	12	3.2	7	14.4	60	0	2	0



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ATTACHMENT 3

TABLE FOR PARTIAL MIXES OF NUTEC #1201

Gal.	Qts.	Base		Cure		Maximum Permissible Thinner	
		lbs.	oz.	lbs.	oz.	qts.	oz.
0	1	2	96	0	6.4	0	9.6
0	2	5	3.2	0	12.8	0	19.2
0	3	8	14.4	1	3.2	0	20.0
1	0	10	0	1	8	1	6.4
1	1	13	1.6	1	14.4	1	16
1	2	15	11.2	2	4.8	1	20.0
1	3	18	4.8	2	11.2	2	3.2
2	0	20	14.4	3	1.6	2	12.8
2	1	23	0	3	0	2	22.4
2	2	25	3.2	3	14.4	3	0
2	3	28	12.8	4	3.2	3	9.6
3	0	31	6.4	4	9.6	3	19.2
3	1	34	0	5	0	3	28.8
3	2	36	9.6	5	6.4	4	6.4
3	3	39	3.2	5	12.8	4	16
4	0	41	12.8	6	3.2	4	25.6
4	1	44	0	6	0	5	3.2
4	2	47	0	6	14.4	5	12.0
4	3	49	11.2	7	14.0	5	22.4
5	0	52	4.8	7	11.2	6	0



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ATTACHMENT 4

"Q" Coating _____

Sheet _____ of _____

"Non Q" Coating _____

Procedure # _____

Rev. _____ Date _____

SPECIAL COATING PROCEDURE NO. _____

SCOPE _____

REQUIREMENTS:

REFERENCE DOCUMENTS



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ATTACHMENT 4
(Continued)

Sheet _____ of _____
 Procedure # _____
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REQUIREMENTS (Continued)



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"Q" Coating X

ATTACHMENT 5

Sheet 1 of

"Non-Q" Coating

Procedure # C-1

Rev. 1 Date

SPECIAL COATING PROCEDURE NO. C-1

SCOPE Application of NUTEC #10 concrete curing and sealing compound.

REQUIREMENTS:

Refer to attached guidelines for application of NUTEC #10 and product data sheet.



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ATTACHMENT 5

GUIDELINES FOR THE APPLICATION OF NUTEC #10
TO CONCRETE SUBSTRATES

1.0 SCOPE

1.1 Application on NUTEC 10 concrete curing and sealing compound.

2.0 SURFACE PREPARATION

2.1 "Green" Concrete

2.1.1 "Green" concrete walls shall be cleaned by using compressed air to remove loose concrete and laitance.

2.1.2 "Green" Concrete floors shall be lightly wirebrushed, followed by compressed air, to remove loose concrete and laitance.

2.1.3 Any forming material transferred to the concrete shall be removed by wirebrushing.

3.0 APPLICATION PROCEDURE

3.1 GENERAL CONDITIONS

3.1.1 NUTEC #10 containers shall be stored at temperatures between 40°F and 110°F and shall not be exposed to direct sunlight for a prolonged period of time. Temperatures may fall below or rise above normal storage temperatures to 0°F or 120°F. Respectively for an accumulative period of 14 days during shelf life of the product.

3.1.2 The amount of time required for curing increases with decreasing temperature. An accelerator may be added at temperatures below 60°F to facilitate the drying and curing processes. The accelerator is available in premeasured portions and shall be added as a third component to the base-cure mixture. Accelerator shall be utilized in accordance with manufacturing instructions.

Cure times for NUTEC #10 is as follows:

ST - 50°F-69°F - 72 hours
70°F-89°F - 24 hours
90°F and above - 18 hours



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- 3.1.3 All equipment used shall be kept in good condition and shall be comparable to the equipment listed in Section 3.2.
- 3.1.4 All equipment shall be cleaned properly before and after each use with the recommended solvent (Imperial's DL-6A universal Solvent).
- 3.1.5 NUTEC #10 Primer/Sealer shall not be applied under inclement weather conditions and not at surface temperatures below 50°F.
- 3.1.6 Concrete to be coated shall be shaded. Epoxy coatings have a tendency to blister when exposed to direct sunlight.
- 3.2 APPLICATION EQUIPMENT
 - 3.2.1 Airless
 - 3.2.1.1 Use standard industrial spray equipment such as Graco, Binks, or DeVilbiss using 30:1 pump ratio with 65-85 psi inbound pressure and a .016 to .019 fluid tip.
 - 3.2.2 Conventional
 - 3.2.2.1 Pressure pot equipment with a water trap.
 - 3.2.2.2 Separate atomizing air and fluid pressure regulator.
 - 3.2.2.3 Air supply: Compressor capable of supplying a continuous volume of air at 60 to 80 psi to the nozzle of each gun.



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- 3.2.2.4 Recommended air hose - 5/16" or 3/8" I.D.
- 3.2.2.5 Recommended material hose - 3/8" or 1/2" I.D.
- 3.2.2.6 Industrial spray gun such as Binks #18 with 66 PB air cap, 66 fluid tip and 66 needle size or DeVilbiss MBC 60D.
- 3.2.3 Brush
 - 3.2.3.1 A clean, high quality brush may be used to coat small areas or concrete inaccessible for spraying.
- 3.2.4 Roller
 - 3.2.4.1 A short to medium knap roller shall be used.
- 3.3 APPLICATION
 - 3.3.1 Flush equipment with Imperial's #DL-6A Universal Solvent or imperials #DL-56 (Cellosolve) Solvent prior to use.
 - 3.3.2 Mixing instructions - slowly mix by power agitation or by hand the entire volume of the cure component with the entire volume of the base. If an accelerator is used, add thepremeasured portion to the base-cure mix and mix slowly. Avoid rapid agitation which may result in air entrapment. Do not vary proportions.
 - 3.3.3 Thin the NUTEC #10 mix with 10-40% #DL-56 solvent (Cellosolve). Thinning minimizes air entrapment, eliminates film irreglarities, enhances penetration, and prolongs the pot life of the material.
 - 3.3.4 As a guide, if using conventional spray, regulate the air pressure: 60-80 psi to gun; 10-20 psi to pot.

NOTE: Required pressures may vary with temperature of hose length.



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ATTACHMENT 5

- 3.3.5 As a guide, during spray application, apply material as a heavy, wet coat, in even, parallel passes overlapping each pass by 50%
- 3.3.6 Apply NUTEC #10 at a spreading rate of approximately 350-400 sq. ft./gal. Avoid excessive build up which will cause a "glazing" affect after drying.
- 3.3.7 NUTEC #10 has a pot life of approximately 1 hour (at 75°F). No material shall be applied which has exceeded its pot life. If this has occurred, there is an increase in the viscosity of the material, a noticeable heat of exotherm and applied material will "crawl" and refuse to penetrate the concrete. All material thus applied shall be removed from the concrete with solvent and a clean cloth. All equipment shall be cleaned immediately and any remaining NUTEC #10 (expired) shall be discarded. Caution: Storage of NUTEC #10 containers at high temperatures, or in direct sunlight will greatly reduce its pot life.

NOTE: Pot life stated above for unthinned coating is the recommended time and should be used as a guideline for coating usage time, however, actual pot life may be longer. For unthinned coating or coating thinned less than 50%, the actual pot life is determined by applicability of the coating.

- 3.3.8 During application all areas found to contain sags, surface irregularities, or excessive buildup of NUTEC #10 shall be removed with solvent and a clean cloth and fresh NUTEC #10 applied.
- 3.3.9 Flush Spray equipment periodically with Imperial's DL6A Solvent or DL-56 to avoid build up of material in the hoses.
- 3.3.10 Clean up all equipment immediately following application with Imperial's #DL-56 cellosolve solvent or Imperial's #DL-6A Universal Solvent.

NOTE:

1. Do not apply NUTEC #10 curing compound to surfaces which visible surface moisture or standing water is present.
2. Refer to manufactures product data sheet for general information.
3. Material may be applied at temperatures above 80°F. When applications are made at temperatures above 80°F care must be taken to assure pot life not exceeded.



TXX-4249

August 10, 1984

QUESTIONS RELATIVE TO ALLEGATION NO. 37

- a) Identify NCR's which were present when backfit program discovered errors in previous "acceptable documentation."
- b) Provide documentation that the original statistical analysis was updated to account for these corrections in your current statistical analyses. (See information request for Allegation 21 above).

Response:

- a) In general, Inspection Reports could easily track and resolve matters of this type and therefore, NCR's may not exist.
- b) See response to Allegation No. 21.

TXX-4249

August 10, 1984

QUESTIONS RELATIVE TO ALLEGATION NO. 40

- a) Identify NCR's which document any violation of the cleaning procedure prior to Revision 28.

Response:

- a) We are not aware of any NCR's on cleaning procedure prior to Revision 28.

TXX-4249

August 10, 1984

QUESTIONS RELATIVE TO ALLEGATION NO. 41

- a) Was this material used to wipe surfaces or not? If so, was it used on coated or substrate surfaces?
- b) Provide any coating procedures which specify solvents which may be used.
- c) Identify plant procedures which control the use of chloride containing materials in containment.

Response:

- a) The chlorinated detergent was used on finished coated surfaces. No chlorinated solvents are inside the containment.
- b) CCP-30, 30A and 40 control use of solvents.
- c) CP-CPM 9.2 (attached)