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QUALIFICATION OF PROTECTIVE COATING INSPECTION PERSONNEL	PREPARED BY: <u>[Signature]</u>		<u>7/27/83</u>	DATE
	APPROVED BY: <u>[Signature]</u>		<u>7/27/83</u>	DATE
	APPROVED BY: <u>[Signature]</u>		<u>7/27/83</u>	DATE

1.0 REFERENCES

- 1-A CP-QP-2.3, "Documentation Within QA/QC Personnel Qualification File"
- 1-B CP-QP-2.1, "Training of Inspection Personnel"

2.0 GENERAL

FOR INFORMATION ONLY

The purpose of this instruction is to define specific inspection functions and capabilities for protective coatings inspection personnel. TUGCO Quality Engineering will assure that the required training is accomplished. The requirements contained herein are not applicable to material, parts or components under the jurisdiction of the ASME Code, Section III, Division I.

3.0 INSTRUCTION

3.1 PROTECTIVE COATING QC TECHNICIAN INSPECTION FUNCTION

Inspection functions may include, but are not limited to, the following:

- a. Performing surface preparation inspections
- b. Perform surveillance of storage and handling of protective coating materials.
- c. Performing protective coating mixing inspections
- d. Performing in-process inspections of protective coating applications
- e. Preparing reports that give the results of the above tests

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3.1.1 Training and Examination

Protective Coating QC Technicians shall have knowledge and skill to adequately perform their assigned task. The following shall be used as a guide for training and examination of Protective Coating QC Technicians:

- a. Construction specifications and procedures
- b. Basic inspection plans and procedures
- c. Specific instructions, checklist and reports used in performance and documentation of inspections and tests
- d. "Hands on" experience using inspection and test equipment
- e. Familiarization with required measuring and test equipment
- f. Minimum on the job (OJT) requirements are defined on the Protective Coating Technical Outline (Figure 1)

3.2 PROTECTIVE COATING QC INSPECTOR

Inspection functions may include, but are not limited to, the following:

- a. May perform duties as a Protective Coating QC Technician in the activities for which qualified/certified
- b. Prepares and interprets reports
- c. Provides technical direction to Protective Coating QC Technician(s)

3.2.1 Training and Examination

Protective Coating QC Inspectors shall have sufficient knowledge and skill to adequately perform their assigned tasks. The following shall be used as a guide for training and examination of Protective Coating QC Inspectors:

- a. Construction specifications and procedures
- b. Basic inspection plans and procedures
- c. Specific instructions, checklist and reports used in performance and documentation of inspection and test

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- d. "Hands on" experience using inspection and test instructions
- e. Familiarization with required measuring and test equipment
- f. Preparation and interpretation of test results.

3.3 TRAINING AND DOCUMENTATION

Qualification of Protective Coating inspection personnel shall be documented in accordance with Reference 1-B.

Protective Coating inspection personnel shall complete the General Training Outline (required by Reference 1-B) and the Protective Coating General Technical Outline (Figure I). On completion of the General Training Outline, the QC Supervisor or his designee shall interview the trainee and sign and date the Outline. In addition to the Protective Coating General Technical Outline, specific Quality Instructions have been developed by Quality Engineering, for each Protective Coating inspection activity. These form the basis of information required for a particular inspection function.

Protective Coating personnel are certified in a given inspection function/activity. A Technical Training Outline (Figure I) documenting qualification requirements for a given inspection function/activity will be completed and verified by the cognizant QA/QC Supervisor.

3.4 QUALIFICATION MATRIX (WORD PROCESSOR PRINTOUT)

A matrix shall be maintained by the Protective Coating QC Supervisor to identify the specific inspections an individual is qualified to perform. The specified inspections shall be indexed by the Quality Procedure or Instruction.

3.5 TRAINING CERTIFICATION

Inspection Certification per Reference 1-B certifying satisfactory completion of training in accordance with this Instruction will be placed in an individual file for each QC employee, signed by the Site QA Supervisor and Quality Control Supervisor or their designees.

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Certification in a particular inspection function will
be for a period of 1 year.

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FIGURE 1

CPSES QUALITY CONTROL DEPARTMENT
PROTECTIVE COATING GENERAL TECHNICAL OUTLINE

NAME: _____ DATE COMMENCED: _____

A. Read and discuss the following documents with designated Lead Inspectors:

1. G&H Specification AS-31. "Protective Coatings"

Trainee _____ Date _____ Lead Inspector _____ Date _____

2. CP-QP-2.0, "Implementation of CPSES Program"

Trainee _____ Date _____ Lead Inspector _____ Date _____

3. CP-QP-3.0, "CPSES Site QA/QC Organization"

Trainee _____ Date _____ Lead Inspector _____ Date _____

4. CP-QP-11.4, "Inspection of Protective Coatings"

Trainee _____ Date _____ Lead Inspector _____ Date _____

5. QI-QP-11.4-1, "Inspection of Steel Substrate Surface Preparation and Primer Application"

Trainee _____ Date _____ Lead Inspector _____ Date _____

6. QI-QP-11.4-5, "Inspection of Steel Substrate Primer Repair and Seal and Finish Coat Application and Repair"

Trainee _____ Date _____ Lead Inspector _____ Date _____

7. QI-QP-11.4-8, "Inspection of Special Coating Operations"

Trainee _____ Date _____ Lead Inspector _____ Date _____

8. QI-QP-11.4-9, "Inspection of Shop Primed Equipment"

Trainee _____ Date _____ Lead Inspector _____ Date _____

9. QI-QP-11.4-10, "Inspection of Concrete Substrate Surface Preparation & Coatings Application & Repair"

Trainee _____ Date _____ Lead Inspector _____ Date _____

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FIGURE 1 (Cont.)

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10. QI-QP-11.4-17, "Surveillance of Storage and Handling of Protective Coatings"

Trainee	Date	Lead Inspector	Date
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11. QI-QP-11.4-20, "Final Inspection of Steel Substrate Finish Coats"

Trainee	Date	Lead Inspector	Date
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12. QI-QP-11.4-21, "Final Inspection of Concrete Substrate Finish Coats"

Trainee	Date	Lead Inspector	Date
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13. QI-QP-11.4-22, "QC Verification of Protective Coatings Unique Identification Number Transfer"

Trainee	Date	Lead Inspector	Date
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14. QI-QP-11.4-23, "Reinspection of Coatings Applied on Steel Substrates"

Trainee	Date	Lead Inspector	Date
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15. QI-QP-11.4-24, "Reinspection of Protective Coatings on Concrete Substrates for which Documentation is Missing or Discrepant"

Trainee	Date	Lead Inspector	Date
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16. CCP-30, "Coating Steel Substrates Inside Reactor Building & Radiation Areas"

Trainee	Date	Lead Inspector	Date
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17. CCP-30A, "Coating Steel Substrates Inside Reactor Building & Radiation Areas"

Trainee	Date	Lead Inspector	Date
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18. CCP-40, "Protective Coating of Concrete Surfaces"

Trainee	Date	Lead Inspector	Date
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19. CP-QP-13.0, "Control of M&TE"

Trainee	Date	Lead Inspector	Date
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FIGURE 1 (Cont.)

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20. CP-QP-15.0, "Tagging System"

Trainee _____ Date _____ Lead Inspector _____ Date _____

21. CP-QP-16.0, "Nonconformances and Deficiencies"

Trainee _____ Date _____ Lead Inspector _____ Date _____

22. CP-QP-18.0, "Inspection Report"

Trainee _____ Date _____ Lead Inspector _____ Date _____

B. Perform a minimum of 100 hours "on-the-job" training in this activity.

QC Supervisor _____

C. Demonstrate proficiency in performing inspection.

QC Supervisor _____

D. Demonstrate proficiency in completing the inspection checklist(s).

QC Supervisor _____

E. Attend formal training session for this activity.

QC Supervisor _____

F. Examination completed.

Score: Concrete _____

Steel _____

Backfit _____

QC Supervisor _____

Comments: _____

Training Completed: _____
QC Supervisor _____ Date _____

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QUESTIONS RELATIVE TO ALLEGATION NO. 21

A. Adhesion Tests

At the July 11, 1984 site meeting, CPSES briefed the NRC Coating Allegation Team members on the overall scope of the Coating Backfit Program. R. Tolson (TUGCO) informed the team of a discrepancy in calibrating Elcometers used for the coating adhesion test that was discovered after most of the Backfit Program adhesion tests were completed. This discrepancy would allow in-plant test results to be in error by 200 psi in the non-conservative direction.

CPSES should revise and correct the original adhesion test data based on dead weight calibration records for each Elcometer used to provide the original test data. The corrected data should then be statistically re-evaluated to establish the fraction (%) of total coated area that passes the 200 psi acceptance level with the stated confidence level. This re-evaluated data should be separately reported for: concrete, containment liner and miscellaneous steel. Describe the method and basis for re-constituting the original test data and establishing the confidence level. Also, describe how the area fraction was established.

In providing the above requested information, the following specific information should be supplied.

- a. For each adhesion test sample area in which at least one test reading is below 400 psi, provide:
 1. All test readings for the sample area. If sample area is reworked, give test readings before and after repair.

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2. PCR numbers for all adhesion tests, the area sampled (e.g., 100 ft²), date and Elcometer number.
 3. Calibration readings for that Elcometer at nearest calibration dates before and after testing the sample area.
 4. Corrected readings for the sample area (Field reading - largest positive deviation during calibration period).
- b. For each Elcometer used in the Backfit program, provide a table or curve showing calibration deviations (at the 200 psi point value) as a function of date for the complete Backfit period. In case the instrument zero required adjustment show deviations before and after adjustment.
- c. For each of the three surface types, containment liner surface, concrete surfaces and miscellaneous steel surfaces, provide:
1. Total area and total area tested for adhesion.
 2. Total area which failed the pull test before repair. (Sum of sample areas represented by at least one failed pull test before repair).
 3. Fraction of total area tested which failed the pull test before repair.
 4. Number of sample areas tested and average number of tests per sample area.

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5. Using the pull test data after correcting for instrument bias (calibration), provide a statistical evaluation of the fraction of the painted area failing the adhesion test, not including the exempted area. Where calibration data are not available, assume an instrument bias of 200 psia. Provide the standard deviation associated with the estimate of the fraction of the total painted area which failed the pull test, based on the corrected data. Construct a 95% upper confidence limit for the proportion of the area which would fail the pull test.
6. Describe how the sample areas (.e.g., grids) were selected. Indicate the degree to which the spots actually tested were representative of each sample area.
7. For each item on the Coating Exemption Log involving an area of 1000 ft.² or more, describe in detail the method of estimating the area. Provide the total exempted area for each of the three main types of surface.

B. Dry Film Thickness Tests

For each of the three surface types, provide:

1. Total area tested for DFT (a) of primer, and (b) of complete coating systems.

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2. Total area which failed the DFT test before repair (a) of primer and (b) for complete coating system.
3. Fraction of total area tested which failed to meet DFT specifications before repair (a) for primer and (b) for total coat.
4. Number of sample areas tested and average number of DFT tests per sample area (a) for primer and (b) for the complete coating system.

Response:

We will respond to this question at a later date.

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QUESTIONS RELATIVE TO ALLEGATION NO. 22

Provide information requested for allegation #19 above.

Response:

See our response to question 19.

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QUESTIONS RELATIVE TO ALLEGATION NO. 26

- a) Describe the system and the requirements to revise the coating specifications to incorporate DCA's.
- b) Describe the system utilized to control DCA's used by personnel applying or inspecting coatings, as described in the first paragraph of your 06/22/80 response.

Response:

- a) When engineering determines that the specification requires revision, outstanding generic DCA's are incorporated. A copy of procedure CP-EP-4.6 is attached.
- b) Design documents used by construction and QC personnel are controlled by Document Control. A copy of DCP-3 is attached.