Procedure No. W-SITP-4

J. A. JONES CONSTRUCTION COMPANY

SITE INSPECTION AND TEST PROCEDURE

FOR

REINFORCING STEEL - HANDLING, STORAGE, INSTALLING, CADWELDING AND MODIFICATION INSPECTION

WATERFORD SES UNIT NO. 3
CONTRACT NO. W3-NY-4

J. A. JONES CONST. CO. 75-317
CONTROLLED DOCUMENT
SET NO. 13

REV.	DATE	ENGINEERING REVIEWED BY	DATE	CONSTRUCTION REVIEWED BY	DATE	QUALITY ASSURANCE APPROVED BY	DATE
0	10/13/75	al Prince	10/14/75	[illegible]	10/19/75	Philip J. Schenck	10/14/75
1	10/21/75	al Prince	10/21/75	[illegible]	10/21/75	[illegible]	10/21/75
2	10/24/75	al Prince	10/24/75	[illegible]	10-24-75	Philip J. Schenck	10/24/75
3	11/6/75	al Prince	11/6/75	[illegible]	11-6-75	[illegible]	11/3/75
4	11/11/75	al Prince	11/13/75	[illegible]	11-13-75	[illegible]	11/13/75
5	12/3/76	al Prince	12/3/76	[illegible]	12-3-76	[illegible]	12-3-76

FREEDOM OF INFORMATION ACT REQUEST
84-455
C/642

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TITLE:	REINFORCING STEEL - HANDLING, STORAGE, INSTALLING, CADWELDING AND MODIFICATION INSPECTION	REV. NO. 5 DATE: 12-3-76
PROJECT TITLE: WATERFORD SES UNIT NO. 3 CONTRACT NO. W3-NY-4		

1.0 PURPOSE

To specify the methods, techniques and records J. A. Jones will use to verify that reinforcing steel is installed in accordance with approved drawings and specifications.

2.0 SCOPE

This procedure covers the Quality Verification activities for handling, storing, installing, cadwelding and modification of reinforcing steel for Seismic Class I structures.

3.0 REFERENCES

3.1 Ebasco Specification No. LOU-1564.473, "Concrete Reinforcing Steel Furnishing, Fabrication and Delivery," latest revision.

3.2 Ebasco Specification No. LOU-1564.479, "Mechanical Splicing of Concrete Reinforcing Steel - Seismic Class I," latest revision.

3.3 J. A. Jones Procedure No. W-WP-3, "Qualification of Welders".

3.4 J. A. Jones Procedure No. W-WP-4, "Handling, Storing, Installing, Cadwelding and Modification of Reinforcing Steel".

R4 3.5 J. A. Jones Procedure No. W-SP-1, "Special Process Procedure for Cadwelding".

3.6 ANSI Standard N45.2.5-1974 "Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants", as applicable.

4.0 RESPONSIBILITIES

4.1 Ebasco Services, Inc. is responsible for supplying reinforcing steel, ERICO Cadweld Splice Kits and testing services and records necessary to support J. A. Jones and Subcontractor work activities.

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4.2 J. A. Jones and Subcontractors are responsible for compliance with this procedure and for compliance with References 3.1 thru 3.4, as applicable.

4.3 J. A. Jones Engineering is responsible for issuing accurate cadweld mapping drawings of sufficient size and detail to provide the documentation as required by this procedure.

4.4 J. A. Jones Quality Assurance/Verification personnel are responsible to provide the inspection and documentation (records) in accordance with this procedure and to assure compliance with References 3.1 and 3.5.

5.0 DEFINITIONS

5.1 Cadweld - Used interchangeably with "Mechanical Splice", and denoting a splice formed with a sleeve which is placed over the end of a reinforcing bar and filled with molten metal to form a mechanical (shear) means of transmitting longitudinal force from the bar to the member to which the sleeve is attached.

5.2 Acceptable material - Reinforcing steel and cadweld kits which have been received, inspected, tested, green-tagged and issued by Ebasco Services, Inc.

6.0 HANDLING

J. A. Jones Quality Assurance/Verification personnel shall perform surveillance and inspection of reinforcing steel handling to assure no permanent deflection in straight bars and no straightening of prefabricated bars, and no other damage or loss of identification occurs.

7.0 STORAGE

After acceptable material (see paragraph 5.2) has been withdrawn from Ebasco for use, J. A. Jones Quality Assurance/Verification personnel shall provide surveillance activities to assure that materials are stored properly and in case of cadweld splice kits, in accordance with the manufacturer's recommendations. In addition, J. A. Jones Quality Assurance shall receive and file a copy of all completed "Requisition on Warehouse" Forms, Ebasco Form No. 136(X)/2-75.

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R-4 9.2.1 That bar ends are thoroughly cleaned by wire brushing to remove all loose mill scale, dirt or other foreign matter.

9.2.2 That bars are heated to remove all moisture.

R-5 9.2.3 That, in order to confirm correct centering of bar ends in the splice sleeve, permanent reference marks are made equidistant from the bar ends (post weld requirement).

9.2.4 That splice sleeves are free of foreign material or serious rust on the inside surfaces.

9.2.5 That all graphite parts except crucible covers are cleaned as required, using a material or tool that will not damage the graphite.

R-5 9.2.6 That proper alignment between sleeve and guide tube is maintained to assure proper fill (post weld requirement).

9.2.7 That before ignition all possibility of moisture in the uncompleted splice is avoided by reheating, if required. This particularly applies in cold, damp weather or sub-freezing temperatures.

9.2.8 That no cadwelding takes place during periods of precipitation unless performed under adequate protection.

R-5 9.2.9 If all of the above random pre-weld inspections are acceptable, including those in Reference 3.2, the Quality Verification Inspector (s) shall initial the pre-weld inspection column of the Daily Cadweld Inspection Report for the applicable cadweld. If any of the pre-weld inspections are unacceptable, the Quality Verification Inspector (s) shall have them corrected prior to igniting the cadweld.

9.2.10 If the final cadweld is acceptable, the Quality Verification Inspector (s) shall initial the final weld inspection column of the Daily Cadweld Inspection Report for the applicable cadweld.

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9.2.11 If the final cadweld is unacceptable, the Quality Verification Inspector(s) shall write "No" in the final weld inspection column and reference the replacement weld(s) in the comments column of the Daily Cadweld Inspection Report.

10.0 SPLICE IDENTIFICATION AND TRACEABILITY FOR POST WELD INSPECTION

10.1 The Quality Verification Inspector(s) shall assure that the identification number is stamped on the visible side of the sleeve. He shall also assure accurate recording of the splice identification number on the cadweld map.

10.1.1 A symbol will be stamped on the cadweld sleeve indicating the assigned identification letter(s) of the operator or crew, the sequential number of the weld (starting from the first weld made by the crew and continuing without interruption).

Note: If the splice is a replacement weld, the next sequential number of the welder replacing the splice will be stamped on the sleeve and entered in the "Daily Cadweld Inspection Report" (see Attachment 14.3) and a notation in the comments column reflecting that the original splice was replaced by the new splice number.

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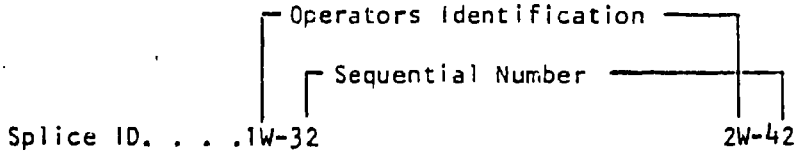

10.1.2 At the time of visual inspection of a splice, the Quality Verification Inspector(s) shall record the above information plus bar size and position on the "Daily Cadweld Inspection Report", and spray the sleeve with a small spot of paint according to the color code:

Accepted: White
Test Specimen: Yellow
Rejected: Red

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10.1.3 All cadwelds within a pour must be accepted, and therefore painted white, before concrete may be placed

10.2 J. A. Jones' Engineering group shall prepare detailed cadweld mapping drawings which will be layed out by layer, by pour.

10.3 The assigned Quality Verification Inspector (s) shall use the cadweld maps to record the following.

10.3.1 Verification of the location of each splice.

10.3.2 Inspector will also enter on the "Daily Cadweld Inspection Report" in the Map Number Column the map number of each splice recorded to provide traceability between the cadweld map and the "Daily Cadweld Inspection Report".

11.0 TESTING OF SPLICES

11.1 The assigned Quality Verification Inspector(s) shall assure that the frequency of splice testing as defined in Reference 3.2 is complied with. He shall record on the cadweld map and on the Daily Cadweld Inspection Report (Attachment 14.1) all data concerning locations and types of test splices and their replacements.

11.2 The assigned J. A. Jones Quality Verification Inspector(s) shall assure that the splice test samples are at the disposal of Ebasco Quality Control personnel or their assigned representative(s).

11.3 All splice tests will be considered on hold by J. A. Jones until a report on cadweld test splices has been received from Ebasco Quality Control or their assigned representative(s). The results of the tests will be recorded on a weekly basis on the "Weekly" Cadweld or Rebar Test Report", Attachment No. 14.2.

12.0 MODIFICATIONS

The assigned Quality Verification Inspector (s) shall assure that modifications to reinforcing steel are made in accordance with Reference 3.2 and 3.4.

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13.0 RECORDS

All records will be compiled and filed by pour number. After the pour has been completed and accepted by Ebasco, the records will be turned over to Ebasco Senior Quality Control Supervisor for purchaser records.

14.0 ATTACHMENTS

14.1 Daily Cadweld Inspection Report (Form No. W-SITP-4.1)

14.2 Weekly Cadweld or Rebar Test Report (Form No. W-SITP-4.2)

14.3 (Sample) Daily Cadweld Inspection Report

J. A. JONES CONSTRUCTION COMPANY
WATERFORD UNIT NO. 3

DAILY CADWELD INSPECTION REPORT
(one form for each operator or crew per day)

Inspectors:_____
Name & Initials:_____

Job:_____
Date:_____

SPLICE I.D.	SLEEVE LOT NO.	POWDER LOT NO.	INSPECTIONS STATUS		COMMENTS	MAP NUMBER	PULL FOR TEST
			PRE-WELD	FINAL WELD			

Attachment 14.1

Form No. W-SITP-4.1
Page No._____

* N/A PRE-WELD IF NOT INSPECTED

Project_____

Date_____

J. A. JONES CONSTRUCTION COMPANY
WATERFORD UNIT NO. 3

WEEKLY CADWELD OR REBAR TEST REPORT

Spec No._____

Lab. Insp._____

Tested Week of _____

Sheet _____ of _____

TEST DATE	TEST NO.	IDENTIFICATION	YIELD STRENGTH (KSI)		TENSILE STRENGTH (KSI)		REMARKS
			TEST RESULT	REQUIRED MIN.	TEST RESULT	REQUIRED MIN.	

Attachment 14.2
Form No. W-SITP-4.2

S - Satisfactory
U - Unsatisfactory

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J. A. JONES CONSTRUCTION COMPANY
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DAILY CADWELD INSPECTION REPORT
(one form for each operator or crew per day)

Inspectors: John Doe
Name & Initials: John Doe (JD)

Job: 75-317
Date: 30 Feb. 1975

SPLICE I.D.	SLEEVE LOT NO.	POWDER LOT NO.	INSPECTIONS STATUS PRE-WELD	INSPECTIONS STATUS FINAL WELD	COMMENTS	MAP NUMBER	PULL FOR TEST
1W-10-1811	735	P11771	JD	JD	Replaces Splice No. 3W8		
— Position	Not stamped on sleeve but entered by inspector						
— Bar Size							
— Sequential	Number						
— Operator's	ID						

SAMPLE

Attachment 14.3

Form No. W-STIP-4.1
Page No. _____

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