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Installation Procedure Title:

Removal of Stabilizers From Tubes to be Restabilized ('B' OTSG)

LIST OF EFFECTIVE PAGES

PAGE	REV.	EFFECTIVE DATE	EXHIBIT	PAGE	REV.	EFFECTIVE DATE
1.0	0	02/24/83	7.1	1.0	0	02/24/83
2.0	0	02/24/83				
3.0	0	02/24/83				
4.0	0	02/24/83				
5.0	0	02/24/83				
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	SIGNATURE	TITLE/DIVISION/DEPARTMENT	DATE
Originator		Job Planner	2/24/83
Concurrence		Technical Support	3-14-83
Reviewed By		Responsible Technical Reviewer	3/1/83
		Plant Review Group	3/14/83
		Rad Con	3/1/83
		ISR	3/14/83
		8506140207 850125 PDR FOIA DETJEN84-897 PDR	
Approved By		P&S Manager	3/1/83
		O&M Director or N/A	3-15-83
		Mod/Ops QC Manager or N/A	3/15/83

FORM A200-ADM-1210.1-1

Revision No. 0 107

1.0 INTRODUCTION AND SCOPE

1.1 The purpose of this Installation Procedure is to provide direction for removal of installed stabilizers and stabilizer caps in the B OTSG. The tubes designated to have their installed stabilizers removed are listed in Attachment #1.

1.2 Selected stabilizers, as noted in Section 6.3.1 are to be saved for further analysis.

2.0 REFERENCES

2.1 AP 1020, Cleanliness Requirements

2.2 AP 1030, Control of Access to Primary System Openings

2.3 TMI Unit 1 Radiation Protection Plan

2.4 GPUN Spec. 1101-12-039 (Acceptance Criteria for OTSG Repair Tools and Materials)

2.5 GPUN SP 1101-12-030, Rev. 8 (OTSG Tube Plugging with B&W Welded Cap and Stabilizer) 3/13/83

2.6 B&W Operating Specification 64-1139697-00, OTSG Stabilizer Removal

2.7 DRF 10639 (B&W FCA 3921, Rev. 0)
3/10/83

2.8 DRF 8755 (SE-120012-009, Rev. 0 of Ref. 2.5) 3/10/83

3.0 RESPONSIBILITIES

3.1 M&C Department is responsible for all aspects of this work.

3.2 Plant Engineering will provide assistance as required.

4.0 PREQUISITES

4.1 Reactor must be in COLD SHUTDOWN with the OTSGs drained.

4.2 Training on removal of stabilizers completed.

4.3 RWP and ALARA requirements satisfied.

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4.4 Cold leg plugs installed, inflated and maintained in accordance with current applicable STP or J-leg covers installed. Drain plug installed.

4.5 Tooling to be cleaned and verified to Class C cleanliness as specified in AP 1020.

4.6 Hot leg plug installed and inflated.

4.7 Video/Communications equipment installed and operable.

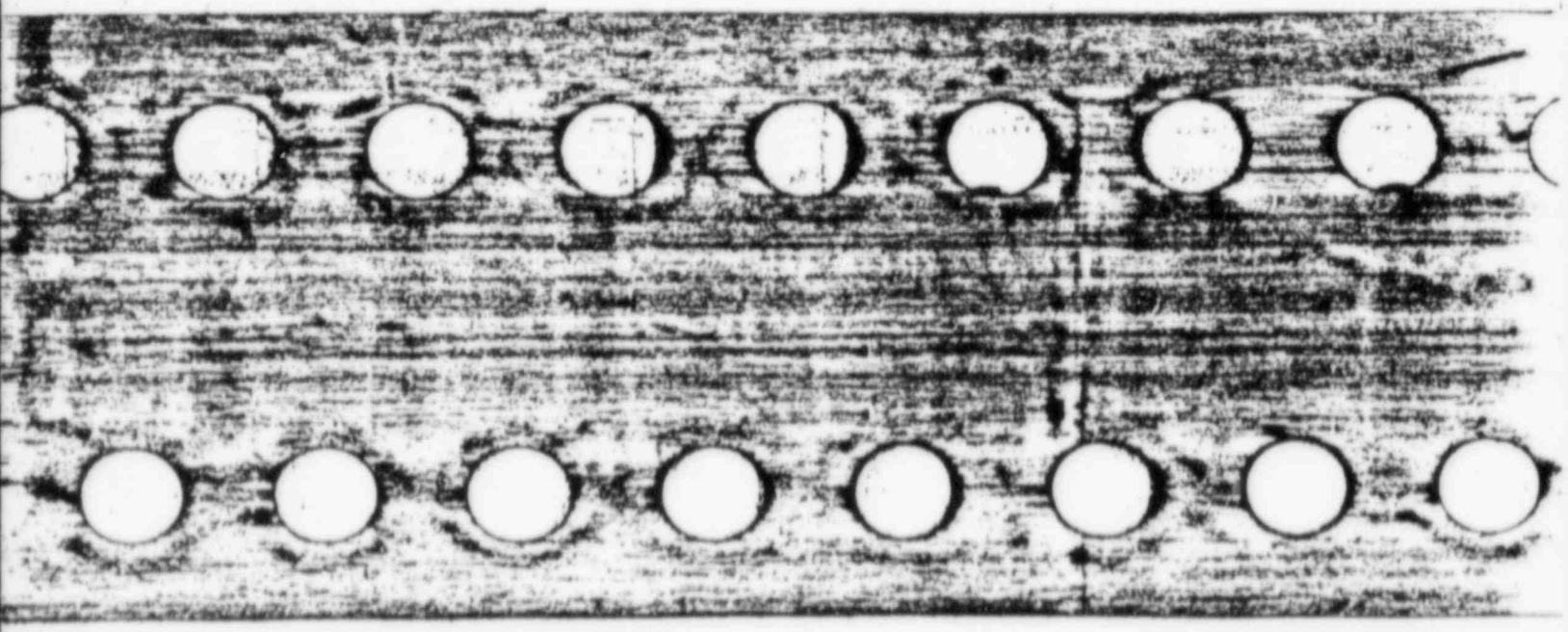
5.0 SPECIAL/SAFETY PRECAUTIONS

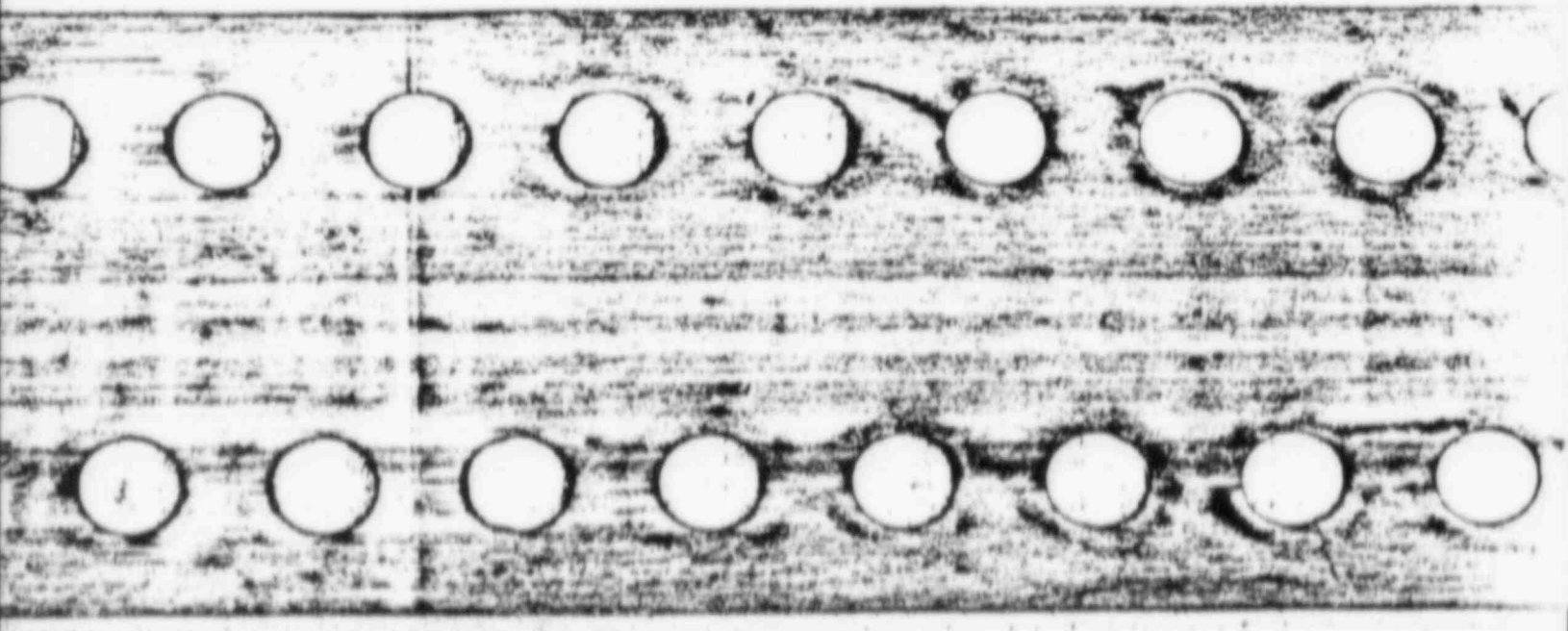
5.1 In accordance with Safety Department requirements and Met-Ed Safety Manual.

5.2 Abort all operations and place tooling in a safe shutdown mode if video or intercom communications is lost during the milling operation.

5.3 Pre-marked bags shall be available to store stabilizer segments which are to be saved for analysis.

5.4 All personnel performing the actual work described in this procedure, and related ones, should be thoroughly familiar with the procedures, the handling and operation of all special tools and materials, and all applicable safety precautions.





5.5 Detailed handling, placement, operation and manner of use of all special tools and material shall be per the direction of the B&W task leader.

5.6 All stabilizer caps to be machined shall be identified in a manner that will not interfere with operation of the machining tool.

5.7 An enclosure shall be provided around the opening to the steam generator (SG) to ensure that any contaminated air is contained. This area shall be free from oil, scale, chips, wire, grease, chemicals and other foreign materials which may be detrimental to the primary system.

6.0 INSTALLATION REQUIREMENTS

6.1 Initial Conditions

6.1.1 Adequate lighting is available inside the upper OTSG head and tent and air supply (80 psi @ 48 SCFM min.) available to power the machining tool.

6.1.2 All 110V AC current to tent on ground fault.

6.1.3 All tools and materials necessary to remove weld caps are available with the tooling assembled and in proper working order.

6.1.4 All necessary training is complete with sufficient manpower available to perform the required functions.

6.1.5 All tubes with weld caps to be removed have been properly identified and locations verified.

6.1.6 Machine tool depth stop is properly set to ensure specified cut height is obtained. The initial cut height setting shall be 0.080 inch above the cladding. If the weld has not been completely cut, further machining may be allowed until the cut is completed. Record Serial Number and Cal. due date of device used to set depth stops on machining tool in J.O. A25K-V1512.

NOTE: Any machining that would leave less than .060 inch of weld above the cladding must first be noted to the B&W task leader for further directions.

6.2 Machining

6.2.1 Connect the air hose to the machining tool and check for proper operation prior to entering the OTSG. Exhaust line for the air drill shall be directed out of the OTSG into the enclosed tent area.

6.2.2 Locate a tube that has been properly identified as a tube to be worked on.

6.2.3 Check tapped hole in cap to ensure threads are usable and 1/4-20 bolt will thread into the tip of the cap. If welded cap does not have tapped hole, drill with a standard #7 bit and tap hole 1/4"-20.

NOTE: If internal threads are obstructed by filler metal, chase threads with tap. If threads are damaged beyond repair, an all-thread rod with nut shall be welded to the cap for capturing the cap.

6.2.4 Place drill assembly and shell mill over weld cap to be removed, and screw 1/4-20 bolt or all-thread through shell mill and drill assembly into weld cap.

6.2.5 Adjust drill assembly and shell mill over tubes in a manner that places cutter directly over weld cap to be machined. Ensure tool depth stops will come to rest on the drill assembly base and not on tube-tubesheet weld or tube end.

Put angle bolts/toggle clamps in drill assembly and tubes.

6.2.6 Lower cutter toward the tube ensuring that the cutter is turning prior to contact with the weld cap.

6.2.7 Machine material from the weld cap and tube end until the depth stop on the cutter head comes in contact with the drill assembly base.

NOTE: If the cutter becomes damaged or dull during the machining operation, stop the machining and replace the cutter.

6.2.8 When depth stop contacts the tubesheet or drill assembly, keep cutter turning and raise and lower machining tool one cycle to ensure that depth stop is in contact with the tubesheet or drill assembly and the proper amount of material has been removed. Stop cutter and examine to determine that the stabilizer cap weld has been sufficiently removed.

6.3 Stabilizer Cap and Segment Removal

6.3.1 Stabilizers identified as specimens for examination are at tube locations 77-8 and 77-9 in the "B" OTSG.

6.3.2 Attach plug removal tool to shell mill or rod and pull weld cap out of the tubesheet.

6.3.3 With stabilizer weld cap out of the tubesheet, place stabilizer vise grips on the rod captured to the weld cap and lock in place. Remove shell mill and rod.

6.3.4 Pull as much stabilizer rod out of tubesheet as allowed by the available head clearance to the next section of rod. The lower section shall be secured with vise grips to prevent dropping down the tube.

6.3.5 The stabilizer segments shall be removed in sections by cutting. Continue process until all rods are out of tube.

NOTE: Stabilizers identified as specimens for examination as listed in Section 6.3.1 shall be cut and removed in a fashion to preserve intact the threaded sections.

6.3.6 The stabilizer sections shall be bagged, tagged and stored after disassembly. Store in hot machine shop after disassembly.

6.4 Final Conditions

6.4.1 The OTSG has been cleaned of the debris caused by the machining and all tooling and material have been removed.

6.4.2 Labeled hairpin markers shall have been installed in these tubes for future stabilization.

NOTE: Refer to Stabilizer Installation Procedure for further instructions.

7.0 ATTACHMENTS

7.1 List of Tubes to be Stabilized and Plugged (Remove Existing Welded Plug and Replug with New Cap)

ATTACHMENT 7.1

(Category *f*)

LIST OF TUBES TO BE STABILIZED AND PLUGGED

REMOVE EXISTING WELDED PLUG AND REPLUG WITH NEW CAP

		Row	Tube
1.	B	77	4
2.	B	77	5
3.	B	77	6
4.	B	77	7
5.	B	77	8
6.	B	77	9
7.	B	77	24