HISTORICAL BOILER VISUAL INTERNAL/EXTERNAL INSPECTION CHECKLIST
BSB 0600-05 Attachment 4 Rev 2

BOILER INFORMATION

NC NO:	Date:

Note Violations Here:

Inspection Interval:	☐ ☐ **INITIAL / INTERVAL 2**
INSPECTOR NAME:	INSPECTOR SIGNATURE:

CAUTION: The boiler has to be cleaned for inspection in order to identify defects. If the boiler is not clean do not proceed with visual or non-destructive examinations.

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BSB 0600-05 Attachment 4

For those items that are not applicable indicate "N/A" in REMARKS column.

	DESCRIPTION	ACC	REJ	REMARKS
#1	**SMOKE BOX**			
	FRONT TUBESHEET Check condition of the front tube sheet and thickness around handhole openings; Check condition of threaded openings and plugs; Check condition of the rivets between the front tube sheet and barrel;	☐	☐	
	Are tubes beaded back to the tube sheet? Any signs of leakage?	☐	☐	
	Check condition of the smoke box shell, especially the lower areas.	☐	☐	
	Check inside the barrel and outside tubes for scale and corrosion.	☐	☐	
	Check back side of tubesheet, especially around handhole sealing surfaces.	☐	☐	
	Check tubesheet supports (through stays, supports, or strong backs.).	☐	☐	
	Check inside rivet heads on lap or butt strap joints.	☐	☐	
	Check front bolster (front axle) attachment points inside shell.	☐	☐	
#2	**SHELL/BARREL**			
	Check front bolster attachment points on shell	☐	☐	
	Check condition of tube sheet rivets.	☐	☐	
	Check condition of threaded openings and plugs.	☐	☐	
	Check radius rod attachment point.	☐	☐	
	Check attachment points of studs, castings, brackets, accessories, etc.	☐	☐	
#2	**SHELL/BARREL**			
	Check piping and nozzle openings on shell (feedwater nozzles, steam take off, water column, etc.)	☐	☐	
	Check handhole openings in shell.	☐	☐	
	Lap seam or buttstrap? 1. Check for signs of leakage around seams or joint rivets.	☐	☐	
	Identify and check any external contour that does not appear normal.	☐	☐	
	Insulation or Insulation Jacket (Lagging) 1. Jacket - Does jacket cover any critical areas or make them difficult to observe? 2. Is barrel pitted or corroded under jacket?	☐ ☐	☐ ☐	
#3	**WRAPPER SHEET**			
	Check handhole openings.	☐	☐	
	Check for signs of seepage around attachment points (wing sheets, axle supports, etc.)	☐	☐	
	Check condition of riveted seams joining wrapper to throat sheet and rear head.	☐	☐	

	WRAPPER SHEET continued			
	Check condition of riveted seams joining throat sheet to barrel.	☐	☐	
	Check external shapes or contours that do not appear normal.	☐	☐	
	Check for condition of staybolt heads any seepage around them.	☐	☐	
	Check condition of threaded openings. (Remove nipples and threads if necessary.)	☐	☐	
	Check internal surfaces for cracks, pits, and material thickness and scale.	☐	☐	
	Check staybolt thickness and condition.	☐	☐	
	Check for scale and mud buildup in waterlegs and wet bottoms.	☐	☐	
	Check for buildup of dirt and grease between or behind attaching brackets such as wing sheets.	☐	☐	
	Check for presence and condition of blow down valve.	☐	☐	
	Wet bottom boilers: 1. Check ash pan area for pits and staybolt head condition. 2. Check inside bottom of wrapper and staybolt condition. 3. Check condition of lap seam in wrapper. 4. Check condition of ash pan drain tube if present. 5. Check condition of drain plug and threads. Check condition of studs, especially studs holding hitches to bottom sheet.	☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐	
#4	**Steam Dome**			
	Check for presence and condition of drainback holes in shell if possible.	☐	☐	
	Check condition of main line shutoff valve.	☐	☐	
	1. Check piping on the main steam line. Check condition of dome seams and seams between dome and boiler shell. 2. Signs of seepage present? 3. Can interior seams be observed?	☐ ☐ ☐	☐ ☐ ☐	

	Check condition of dome seams and seams between dome and boiler shell. 4. Signs of seepage present? 1. Can interior seams be observed?	☐ ☐	☐ ☐	
	5. Check for presence and condition of pressure gage. 2. Is there a siphon and what is its condition? 3. Is the gage readable from the operator's position? 4. Has the gage been calibrated or checked against another gage? 5. If a shutoff valve is present, its handle shall indicate open position, or the handle shall be wired open. Check gage for proper range.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
	Check for presence and condition of Safety Valve. 1. Does it have its own inlet/outlet piping with no possibility of closure? 2. Check that the inlet pipe size is not smaller than the valve inlet size. 3. Check that the outlet pipe size is not smaller than the valve outlet size. 4. Is it a National Board capacity certified, ASME "V"/NB "VR" stamped valve of proper 5. Pressure and capacity rating for the boiler heating surface? 6. Does it have a try lever? 7. Is it sealed with a factory seal?	☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐	**Safety Valve Information** **Mfg_____** **Size_____** **Set PSI_____** **Capacity_____**

	DESCRIPTION	ACC	REJ	REMARKS
#5	**WATER COLUMN AND GAGE GLASS**			
	Check condition of try-cock valves and blowdown valves on column and glass.	☐	☐	
	Check condition of glass (cracks or scratches).	☐	☐	
	Are there signs of leaks around the water glass gaskets?	☐	☐	
#6	**FIREBOX**			

	Check for bulges or abnormal shapes (What caused them?).	☐	☐	
	Check seams around fire door.	☐	☐	
	Check for sediment buildup over fire door opening rear head.	☐	☐	
	Check for sediment buildup over peephole opening in wrapper sheet (where applicable).	☐	☐	
	Check condition of fusible plug. (Must be removed for observation.) 1. Is it an ASME plug? 2. Check condition of top surface. (May need to brush it off.) 3. Check plug for signs of leakage between the tin center and brass casing.	☐ ☐ ☐	☐ ☐ ☐	
	When fusible plug is removed, check crown sheet thickness at that location and thread condition.	☐	☐	
	Fireside fusible plug must protrude a minimum of ¾" into waterside.	☐	☐	
	Fireside fusible plug may not protrude into fire area of more than one (1) in.	☐	☐	

	DESCRIPTION	ACC	REJ	REMARKS
#6	**FIREBOX continued**			
	Water glass calibration can only be done when crown sheet and fusible plug can be seen and measured. (A recommended minimum water level may be determined as follows: With engine sitting on level ground and water just observable at the bottom of the glass, the crown sheet should be covered by water a minimum of at least 2-1/2 in. plus on a full-size boiler.	☐	☐	
	Check staybolt condition, especially near top surface of crown sheet.	☐	☐	
	Check through stays, strong backs, knee braces, etc. on rear head.	☐	☐	
	Check handhole openings, threaded openings and plugs in rear head.	☐	☐	
	Check condition of firebox tube sheet, and check if tubes are beaded back to the tube sheet.	☐	☐	

	Check condition of staybolt heads inside fire box.	☐	☐	
	Check condition and design of crown sheet. Is it flat-topped or able to trap water? Is it free of scale?	☐	☐	
	DESCRIPTION	**ACC**	**REJ**	**REMARKS**
#7	**EXTERNAL PIPING**			
	Is black pipe (as opposed to galvanized) used?	☐	☐	
	Check for use of schedule 80 black pipe required between boiler and first valve.	☐	☐	
	Are fittings of proper pressure rating for maximum allowable operating pressure?	☐	☐	
	Are isolation valves present to shut off individual system lines? (blower, injector, etc.)	☐	☐	

	DESCRIPTION	**ACC**	**REJ**	**REMARKS**
#7	**EXTERNAL PIPING continued**			
	Are two separate feedwater systems present?	☐	☐	
	Check piping for freeze damage.	☐	☐	
	Is all piping properly supported?	☐	☐	
	Fittings dates are to be stamped, stenciled or recorded on boiler records.	☐	☐	
	Piping shall have a 20-year life, except for the main steam line, which shall be evaluated periodically as to remaining service life. Alternatively, piping may be UT examined to determine if the thickness is adequate and the remaining life.	☐	☐	
	DESCRIPTION	**ACC**	**REJ**	**REMARKS**
#8	**ADDITIONAL SAFETY DEVICES**			
	GAGE GLASS 1. Are the connections to the boiler clean and unobstructed? 2. Is the gage glass fitted with a safety guard? 3. Does the gage glass have a drain? 4. Is the gage glass clean and clear?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
	TRY COCKS 1. Are the try cocks properly located? 2. Are the connections to the try cocks clean and unobstructed? 3. If the boiler did not originally have try cocks, a newly installed try cock shall be installed 3” above the highest point on the crown sheet.	☐ ☐ ☐	☐ ☐ ☐	