

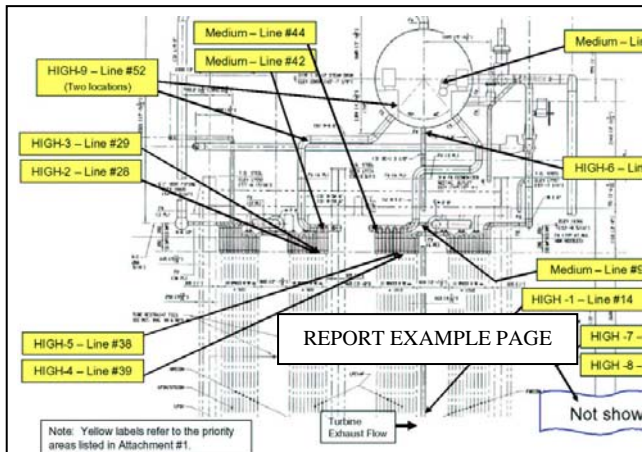
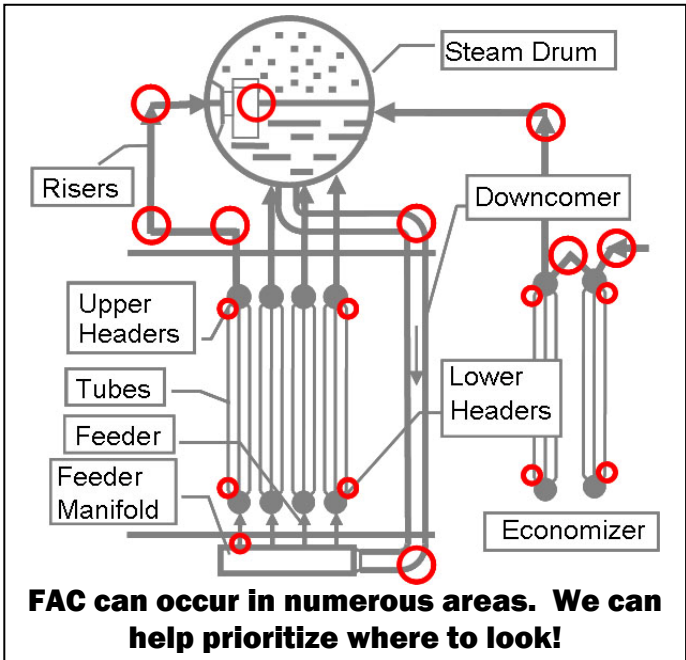


FAC Risk Assessment For Gas Turbine HRSG's

Flow accelerated corrosion (FAC) has caused pressure part damage in hundreds of HRSGs.

Developing an FAC monitoring plan is a prudent practice to help avoid damage and failures.

HRST has the field experience and design experience to help prioritize where to check for FAC.



FAC Risk Assessment engineering locates potential problem areas.

Attachment #2 - Prioritized List of FAC Risk Areas for Future Inspection

FAC Inspection Priority	Report Line No.	Dwg. Number	Type of Risk	From	To	O.D. in
1	HIGH	43	5701	Cyclones	LP Steam Drum	
2	HIGH	28	5220-5221	Branch Feeder (for 2770)	LP Main Feeder	LP Branch Feeder #2 4.501
3	HIGH	89	5170	IC Piping (Main by FCV)	HP BFWP Discharge	HPLT Econ #1 (2750) 4.501
4	HIGH	27	5220-5221	Branch Feeder (for 2780)	LP Main Feeder	LP Branch Feeder #1 4.501
5	HIGH	48	5760	IC Piping (Main by FCV)	IP BFWP Discharge	IP Econ #1 (2750) 2.31-
6	MEDIUM	41	5270-5272	Main Riser	LP Branch Risers #1 & #2	LP Steam Drum 6.821
7	MEDIUM	20	5240-5241	IC Piping (Main)	HT FWPH (2850)	FWPH Block Valve 9.621
7	MEDIUM	21	5240-5241	IC Piping	FWPH Block Valve	LP Steam Drum 9.621
9	MEDIUM	39	5270-5272	Branch Riser (for 2780)	LP Branch Riser #1	LP Main Riser 4.501
10	10	52	7750	Tubes (at inlet temperature)	IP Econ #1 (2750)	IP Econ #1 (2750) 1.751
11	11	48	5780-5781	IC Piping (Main)	IP BFWP Discharge	IP Econ #1 (2780) 4.501
12	12	18	7850	Tubes (at outlet temperature)	HT FWPH (2850)	HT FWPH (2850) 1.751
13	13	24	IC Piping	BFW Pump Suction	at entrance of pump	6.821
14	14	26	5220-5221	Main Feeder	LP Steam Drum	LP Branch Feeder #1 & #2 6.821
15	15	92	7750	Tubes (at inlet temperature)	HP LT Econ #1 (2750)	HP LT Econ #1 (2750) 1.751
16	MEDIUM	88	5170	IC Piping (Main)	HP BFWP Discharge	HPLT Econ #1 (2750) 8.821
17	17	53				1.751
17	17	55				1.751
19	19	83				1.751
20	20	40				6.821
21	21	34	7770	Tubes (at outlet)	LP Evap #2 (2770)	Row 1 1.501

REPORT EXAMPLE PAGE

FAC Risk Assessment Steps:

- Identify quantity, size, and material of all boiler circuits at risk to FAC
- Perform evaporator circulation modeling. This is critical for assessment of IP and LP Evaporators!
- Determine "Risk Factor" for each circuit based on criteria that includes material, velocity, temperature, shear factor and steam quality.
- Review water chemistry targets & history.
- Provide report with a prioritized list of boiler locations at risk to FAC wear.

Benefits:

- Client utilizes the prioritized list to plan their FAC outage testing program.
- Client utilizes prioritized list to determine "where else" to check if FAC wear is found.