

AIR COOLED HEAT EXCHANGER INSPECTION REPORT

Date: Oct. 09, 2014

Report # : IR141009GENh

Plant	Celtic Compressor	Op Unit	HOG	System / LSD:	10-08-052-23w3
Equipment #	1000000924	Tag #	----	Asset Type	Air Cooled Heat exchanger
Description	2nd Stage Gas cooler	Prov. Insp. #	S 09266	Serial #	905077.4B
Manufacturer	Air-x-changers	CRN	H6717.2.3	Year Built	1990
MAWP	9067	KPag	@ 149 °C	MDMT	-29 °C
Code	ASME VIII	Fluid Service	Natural Gas	PWHT	No
Internal Access	No	Insulated	No	Internal Coating	No
Operating Pressure	-	KPag		Operating Temp	- °C

PSV DATA

Serial Number:	90C2044			
Manufacturer:	Consolidated			
Model:	1912FC1-1-1-1-1			
Set Pressure	Kpa 9067			
Capacity	SCFM 8144			
Inlet Size	mm 38			
Outlet Size	mm 50			
Service Date: mm/yyyy	10/2014			
Location:	2nd Stage Discharge Piping			

INSPECTION SUMMARY

External:

A visual external inspection performed to the applicable standards did not identify any concerns with the pressure boundary of this equipment, there were no significant deficiencies noted.

This equipment was in service at the time of inspection.

A thorough inspection to verify the equipment's integrity was done by VE and UT.

The nameplate is intact and legible.

The equipment can be recommended fit for service.

The plug sheet is in good condition with no deformation or warpage noted. All visually accessible plugs and tubes are free of leaks.

No NCR's were issued at this time.

Housing & Louvre:

The housing is sound and secure. The louvre's are secure and appear to be functional.

Fan & Motor:

There was no access to the fan & motor assembly as it is a confined space.

Internal:

There was no internal inspection or NDE performed at this time, the scope of work was for an external inspection only.

NDE:

The UT readings are within acceptable limits: see the UT readings below.

RECOMMENDATIONS

--

NONCONFORMANCES / INSPECTION DEFICIENCIES

--

INSPECTION PLANNING


Inspection Strategy	Availability	Inspection Interval	5 yrs 4 years
Inspection Date	10/2014	Date of Last Inspection	10/2014 2018

AIR COOLED HEAT EXCHANGER INSPECTION REPORT

Date: Oct. 09, 2014

Report # : IR141009GENh

REPORT CERTIFICATION

The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection.					
VE Inspected by / Certification #	Guy Normand	API 510# 23041		Date	Oct. 09, 2014
VI Inspected by / Certification #				Date	
Reviewed and Approved by	Remi Lacasse			Date	
Criticality Assessment Rerun				Inspection Planning Rerun	
Assessed Next Inspection Date					

DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR / IDR	Comments
V1	General Other (Explain)	Good			This equipment was found to be acceptable for continued service. Any deficiencies are noted below. The nameplate is intact and legible.
V2	General Corrosion	Good			Mild surface corrosion noted throughout the cooler.
V3	General Leaks	Good			No leaks were noted.
V4	Vibration	N/A			
V5	Dissimilar Flange Rating	Good			There is no dissimilar flange ratings noted on the components that are visible.
V6	Ladder/Stairway	N/A			
V7	Header Box	Good			The header boxes are in good mechanical condition.
V8	Guy Wires	N/A			
V9	Electrical Ground	Good			The equipment is grounded through the skid package.
V10	Painted Inactive Corrosion	Fair			The cooler is painted with inactive mild corrosion present.
V11	Coating/Painting	Fair			The paint is heat damaged, faded, chipped and scratched.
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	N/A			
V14	Shell	N/A			
V21	Support Other (Explain)	Good			The cooler is supported by the housing and shroud.
V22	Foundation	N/A			
V23	Anchor Bolts	N/A			
V24	Saddle/Skirt	N/A			
V25	Davit	N/A			
V26	Fireproofing	N/A			
V31	Connections Other (Explain)	Good			All piping connections to the cooler are secure.
V32	Small Branches	N/A			
V33	Nozzles	Good			All nozzles are straight with no mechanical deficiencies noted.
V34	Manways	N/A			
V35	Reinforcing Pads	N/A			
V36	Inadequate Thread Engagement	Good			The thread engagement is adequate on all visible components.
V37	Bolting	Good			The visible studs / nuts are secure.
V38	Flanges	Good			All visible flanges are intact with no defects noted.
V41	Insulation Other (Explain)	N/A			
V42	Damage	N/A			
V43	Penetrations	N/A			
V44	Insulation Jacket	N/A			
V45	Banding	N/A			
V46	Seals/Joints	N/A			
V51	Relief Devices Other (Explain)	Good			The PSV is set to the proper pop pressure and has been serviced within an acceptable time frame.
V52	Relief Devices Corrosion	N/A			
V53	Relief Devices Leaks	N/A			
V54	Restricted Inlet/Outlet	N/A			
V55	Manual Operation Lever	N/A			
V56	Tubes	Good			There are no leaks or notable issues with the tubes.

AIR COOLED HEAT EXCHANGER INSPECTION REPORT

Date: Oct. 09, 2014

Report # : IR141009GENh

DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR / IDR	Comments
V1	General Other (Explain)				
V2	Corrosion (depth, length, width)				
V3	Erosion				
V4	Distortion				
V5	Blisters				
V6	Deposits				
V7	Header Box				
V8	Welds				
V9	Nozzles				
V10	Shell				
V11	Gasket Surfaces				
V21	Internals Other (Explain)				
V22	Demister				
V23	Baffle/Weir				
V24	Sparger				
V25	Thermowells				
V26	Metallic Linings				
V27	Nonmetallic Linings				
V30	Other: Welded Attachments				
V31	Tubes				
V32	Tube sheet / Plug Sheet				

DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR / IDR	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

DETAILED INSPECTION TUBE INSPECTION

Tube #	Flaw Type	Flaw Length	Location on Tube	Wall Loss	NCR / IDR	Comments

DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments
005	8.6	8.6				Inlet Nozzle
010	19.1	20.0				North Header Box
015	19.1	19.9				South Header Box
020	8.6	9.4				Outlet Nozzle

AIR COOLED HEAT EXCHANGER INSPECTION REPORT

Date: Oct. 09, 2014

Report # : IR141009GENh

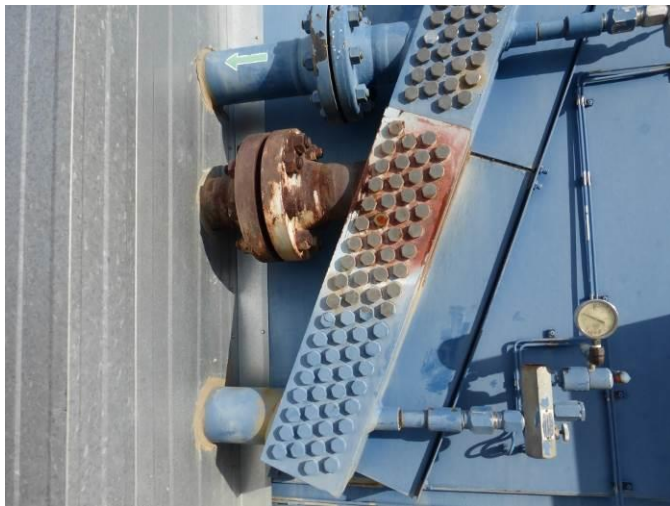
PHOTOS



Nameplate



Sask. #



Overall View South



Overall View North