Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

AREA: Reheater High Pressure

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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SEE FOLLOWING PAGES FOR REPAIRS

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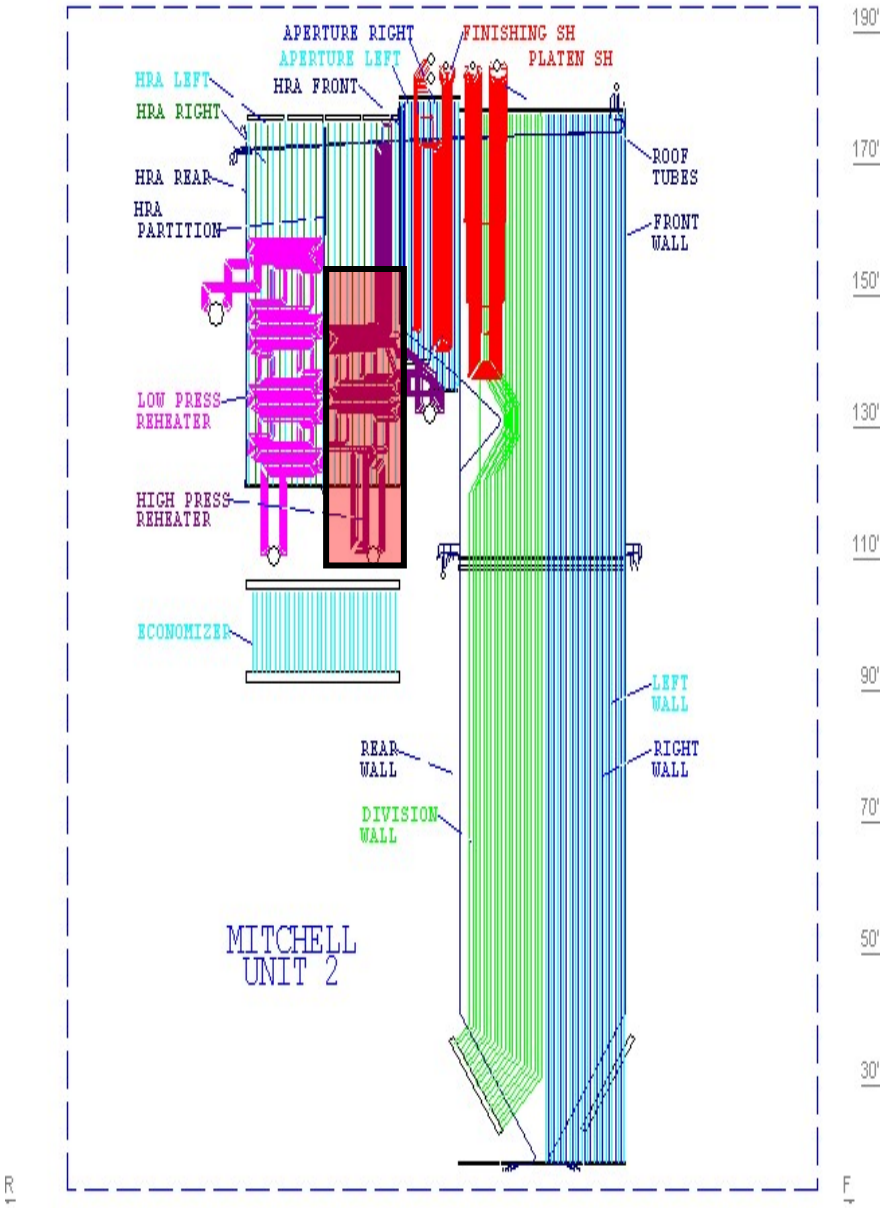

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

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P R I O R I T Y # 1 R E P A I R S

==========

Record: #11
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Cogley S.

General location is Reheater High Pressure, Bank 2 Top, Front.

Elevation: 137'

Cause: Erosion (Soot Blower)
Appearance: Eroded

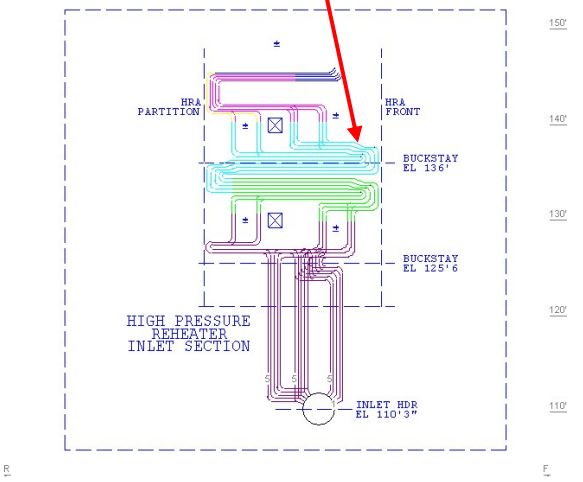
Material: 2.25" OD x .150" MWT x SA-213T2

The UT Data is .090

The Final Risk Index Number is 17

Replace tube 1 of assembly 86 for a length of 2' due to a RWT of 0.090".

Note: Prior to completing repair, remove shield remnants to determine any further damage and lengthen repair if necessary.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #18
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Hubbard T.

General location is Reheater High Pressure, Bank 2 Bottom, Center.

Elevation: 132'

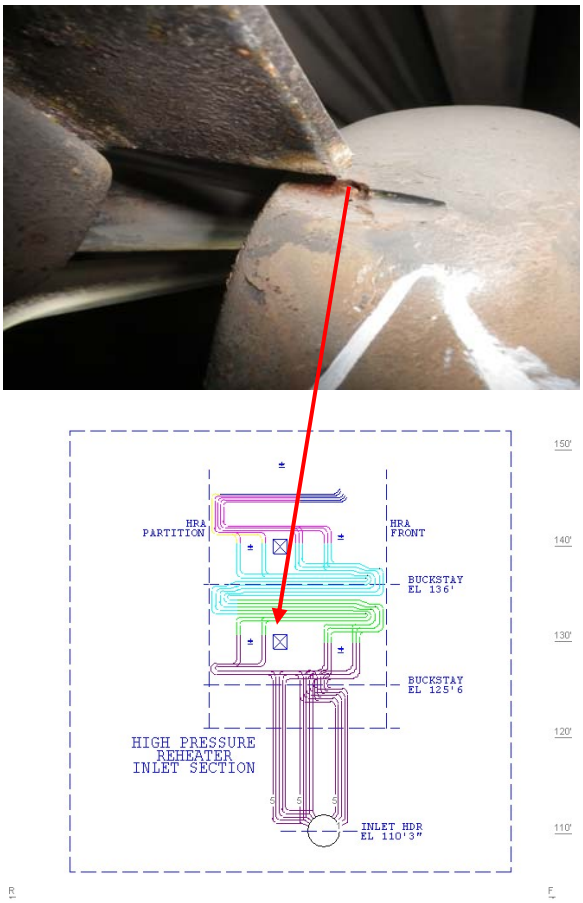
Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

Material: 2.25" OD x .150" MWT x SA-178C

The Final Risk Index Number is 20

Replace a 2' section of tube 1 assembly 199 encompassing the 90 degree bend.

Spacer cane has abraded a hole in the tube causing failure.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #32
Action: TUBE LOOP REPLACEMENT-P1
Priority #: 1

Inspector: Brown M.

General location is Reheater High Pressure, Bank 2 Bottom, Rear.

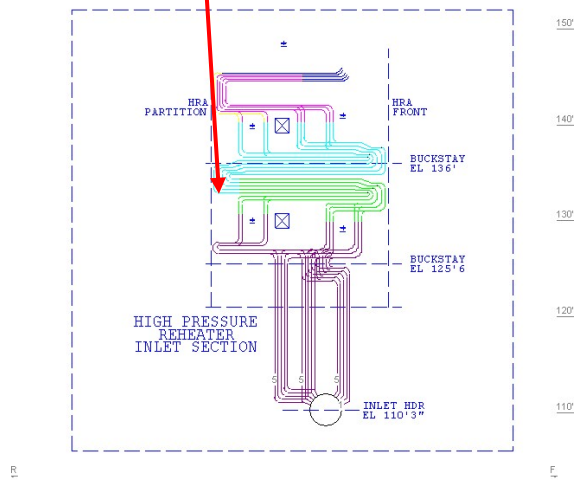
Elevation: 132'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-213T2

The UT Data is .093

The Final Risk Index Number is 20



Replace the loop section of Tube 3 at Assembly 223 due to erosion occurring adjacent to the side wall. Front cut-line should extend to the front approximately 1' and extend up through the loop into the vertical section for about 6".

NOTE: Erosion flats could also be felt on tube 4 near the inside radius at an eroded through shield. Tubes were counted up from the bottom.

Verify replacement material before removing old tube section.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

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P R I O R I T Y # 2 R E P A I R S

==========

Record: #17
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Hubbard T.

General location is Reheater High Pressure, Bank 2 Top, Top.

Elevation: 137'

Cause: Fretting or Rubbing (Abrasion)

Appearance: Gouged Tube

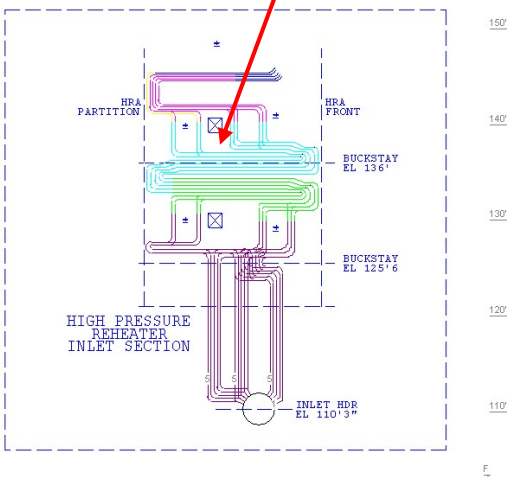
Material: 2.25" OD x .150" MWT x SA-213T2

The Final Risk Index Number is 11

Extend existing pad welds 2" x 2", as denoted by white box, at the following assemblies/tubes:

Assemblies/Tubes:
A192/T1
A194/T1

Both tubes are gouged, however the mechanism is no longer present.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #10
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is Reheater High Pressure, Bank 2 Top, Front.

Elevation: 137'

Cause: Erosion (Soot Blower)
Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-213T2

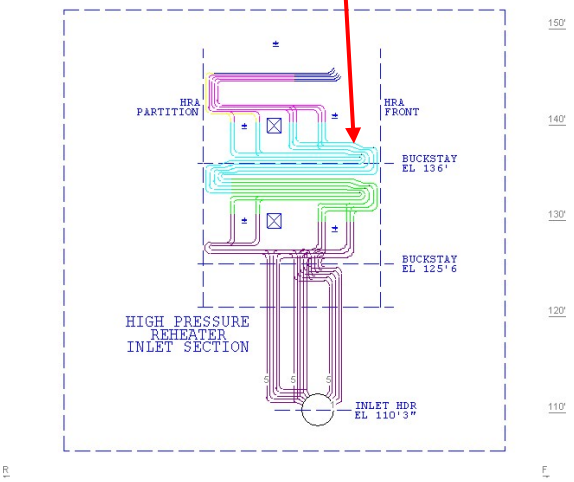
The UT Data is .109

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:

Assembly/Tube(RWT)PW Length:

A76/T1(0.109")10"
A153/T1(0.114")4"



The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #12
Action: TUBE RESTORATION WELD-P2
Priority #: 2,

Inspector: Hubbard T.

General location is Reheater High Pressure, Bank 1 Top, Center.

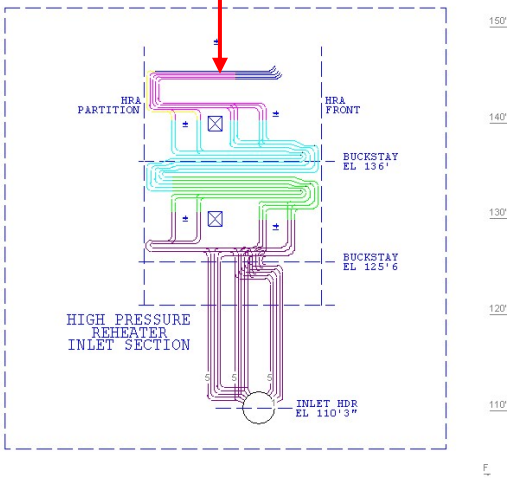
Elevation: 145'

Cause: Work Quality (Maintenance Damage)
Appearance: Gouged Tube

Material: 2.25" OD x .300" MWT x SA-213T22

The Final Risk Index Number is 8

Restore tube 2 of assembly 19 to MWT by applying a 1" x 1" pad weld *due to estimated RWT of 0.237".*



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #19
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Brown M.

General location is Reheater High Pressure, Bank 1 Top, Rear.

Elevation: 145'

Cause: Erosion (Fly Ash)
Appearance: Eroded

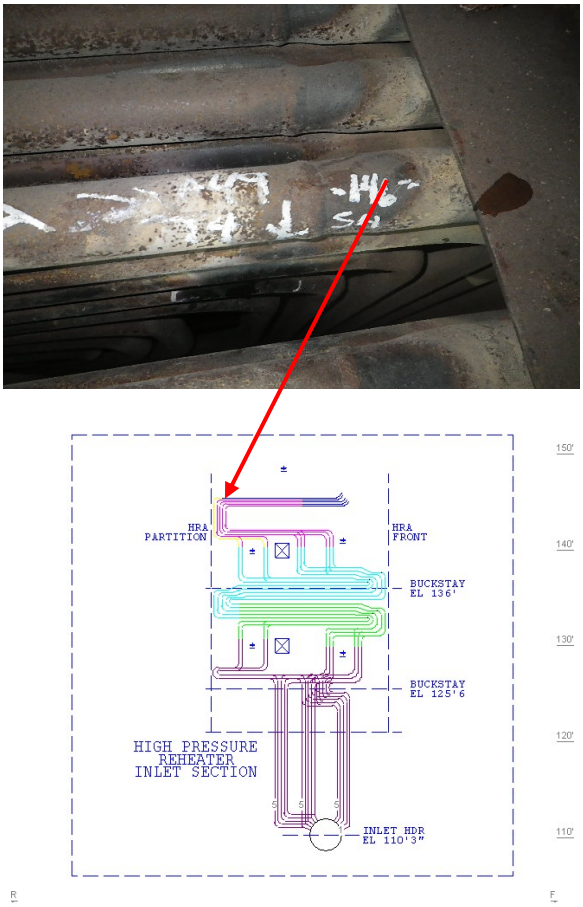
Material: 2.25" OD x .200" MWT x SA-213T12

The UT Data is .146

The Final Risk Index Number is 10

Apply one pad weld to Tube 4 of Assembly 49 near the partition wall. Repair area is marked on the right upper side of the tube and is about 6" in length.

NOTE: Photo depicts (SH) for shield, however, the tube is actually just into pad weld criteria.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #26
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Brown M.

General location is Reheater High Pressure, Bank 2 Top, Rear.

Elevation: 137'

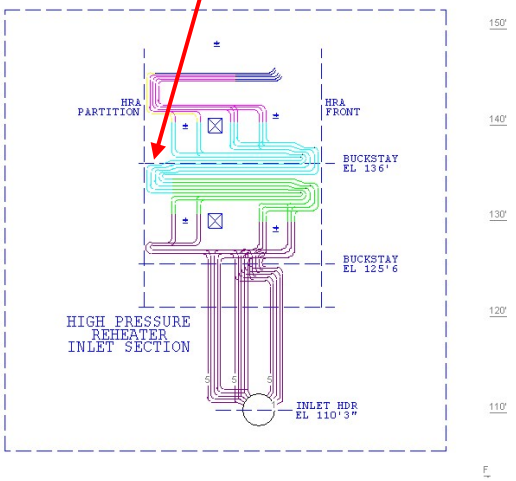
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-213T2

The Final Risk Index Number is 12

Apply pad welds to the following Assemblies/Tubes adjacent to the inside radius bend near the partition wall:

Assemblies/Tubes:
A79/T7-8
A80/T7
A117/T7
A152-153/T7
A167/T2-4



Repair area is where shields have eroded through and appear visually to be in weld repair criteria.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #35
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Brown M.

General location is Reheater High Pressure, Bank 2 Bottom, Rear.

Elevation: 132'

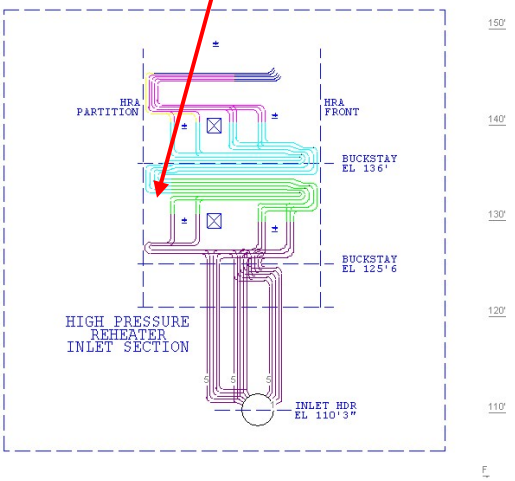
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-213T2

The UT Data is .104

The Final Risk Index Number is 13

Apply one approximate 12" pad weld to Tube 2 at Assembly 102 due to fly ash erosion on a previous weld repair. Repair is on the top side of the tube in the rear blower path.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #27
Action: SHIELD INSTALLATION-P2
Priority #: 2

Inspector: Brown M.

General location is Reheater High Pressure, Bank 2 Top, Rear.

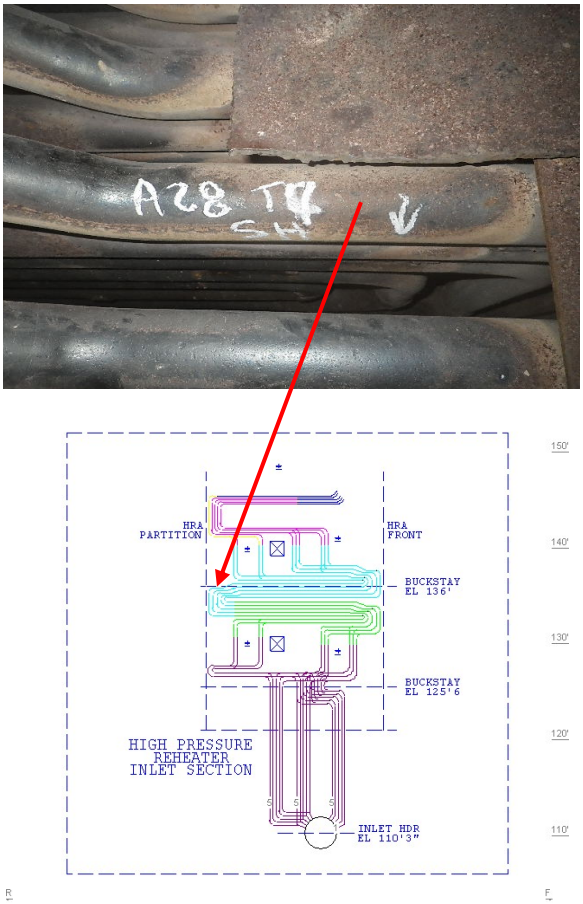
Elevation: 137'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-213T2

The Final Risk Index Number is 8

Possibly as much as 50% of the shields located on the inside radius of Tube 7, near the partition wall, has been eroded through with varying degrees of tube erosion present. Replace shields and evaluate the RWT at the following Assemblies:



Assembly:

A28	A75-76	A133-137
A31	A78-80	A145
A33-39	A82	A152-158
A41	A84-86	A161-165
A43	A88-93	A169-170
A46-50	A98	A174-179
A55-57	A100-101	A183
A59	A103-113	A185
A65	A115-120	A187-188
A67-68	A123-131	A195
A71-73		

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

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P R I O R I T Y # 3 R E P A I R S

==========

Record: #13
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

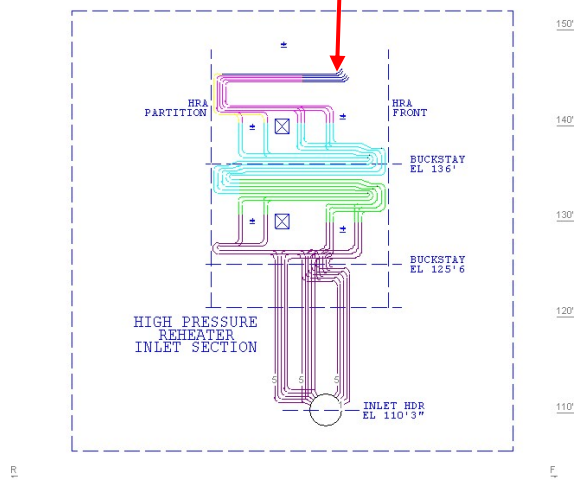
General location is Reheater High Pressure, Bank 1 Top, Front.

Elevation: 145'

Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

Material: 2.25" OD x .240" MWT x SA-213T22

It is recommended that three wear shields be installed on the vertical tubes adjacent to Assembly 113, Tube 1 to halt the abrasion that is occurring there. Shield length should be about 6" in length and may require a radius bend on the lower ends.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #4
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cavote P.

General location is Reheater High Pressure, Bank 1 Top, Rear.

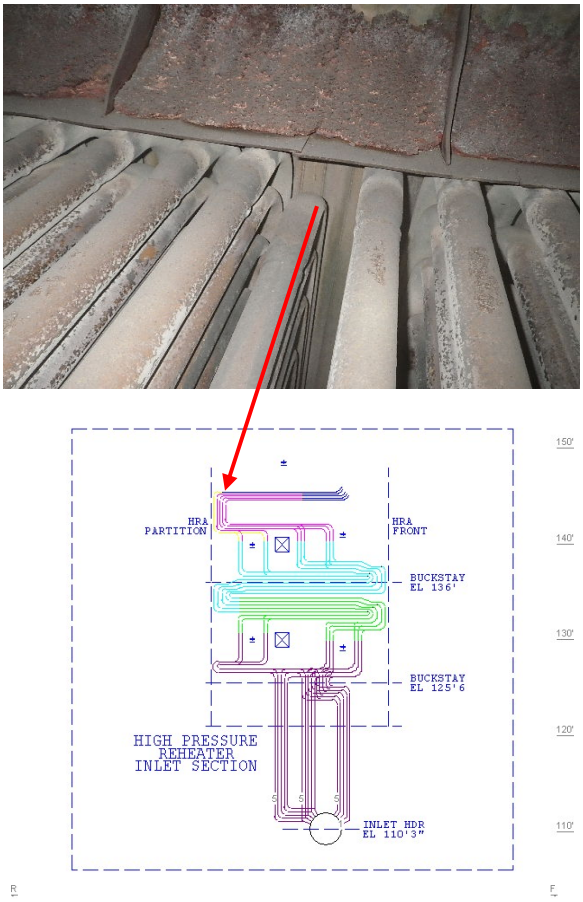
Elevation: 145'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Detached

Material: 2.25" OD x .200" MWT x SA-213T12

The Final Risk Index Number is 7

Several dropped horizontal assemblies have detached from their respective rear wall support bracket at the following assemblies:



Assembly:

A33	A95
A59	A108
A61	A169
A80	A171
A83	A172
A84	A174
A85	A180
A86	A181
A94	A188

Raise these assemblies and reposition them back onto their respective rear wall support brackets.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #5
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cavote P.

General location is Reheater High Pressure, Bank 1 Top, Center.

Elevation: 145'

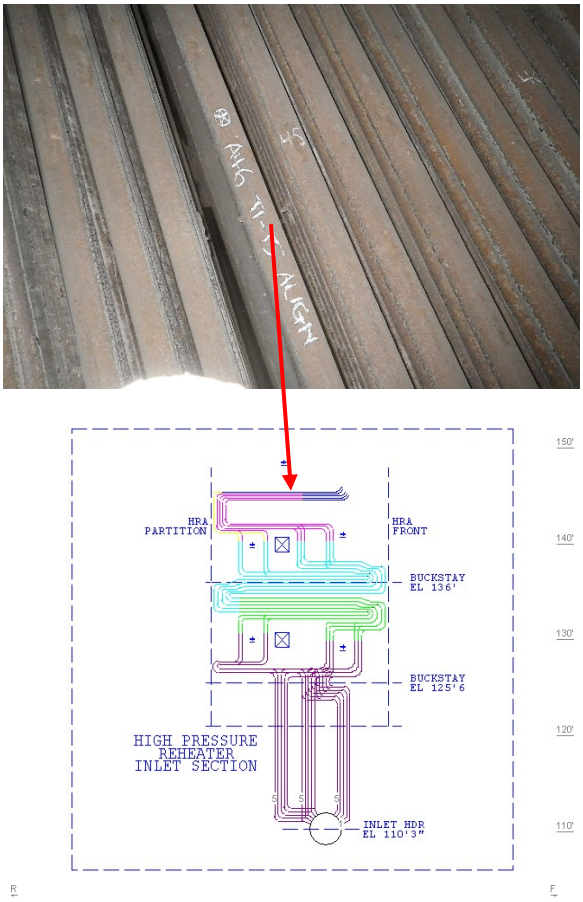
Cause: Fatigue (Thermal/ Vibration)
Appearance: Misaligned

Material: 2.25" OD x .200" MWT x SA-213T12

The Final Risk Index Number is 3

Realign tubes 1-5 of the following assemblies:

Assemblies:
A19
A46
A58
A125
A162
A168
A192
A200
A211



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #15
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Hubbard T.

General location is Reheater High Pressure, Bank 1 Top, Vertical Section.

Elevation: 145'

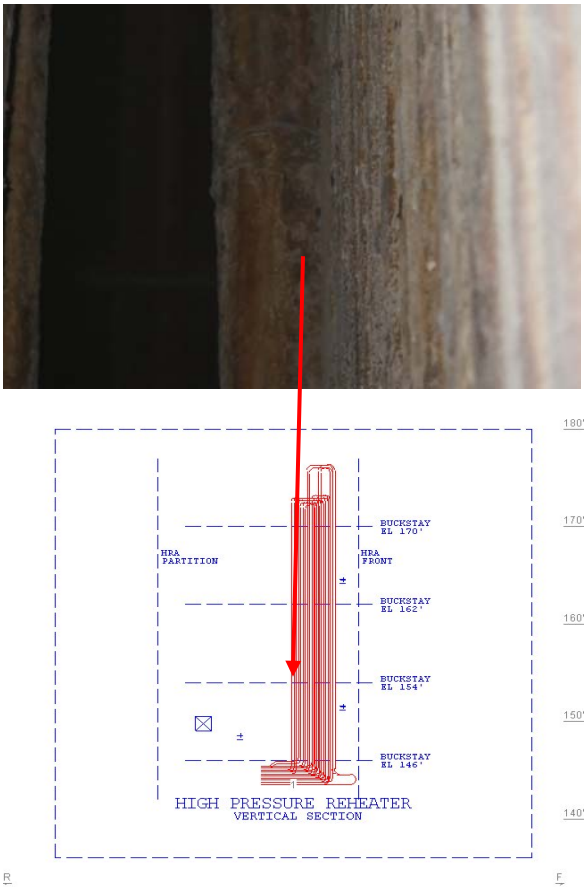
Cause: Thermal Fatigue
Appearance: Misaligned

Material: 2.25" OD x .240" MWT x SA-213T22

The Final Risk Index Number is 2

Reattach and realign the following assemblies/tubes:

Assembly/Tube:
A35/T20
A60/T14
A72/T20
A96/T8-T9,T16,T17,T19



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #7
Action: REFRACTORY INSTALLATION-P3
Priority #: 3

Inspector: Cavote P.

General location is Reheater High Pressure, Bank 1 Top, Rear.

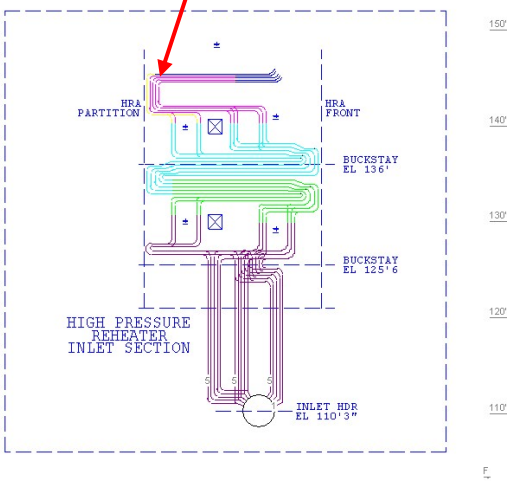
Elevation: 145'

Cause: Erosion (Falling Slag)
Appearance: Missing

The Final Risk Index Number is 1

Replace missing refractory along rear wall at the following horizontal assemblies:

Assemblies:
A55
A60
A65
A190



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #21
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater High Pressure, Bank 1 Top, Rear.

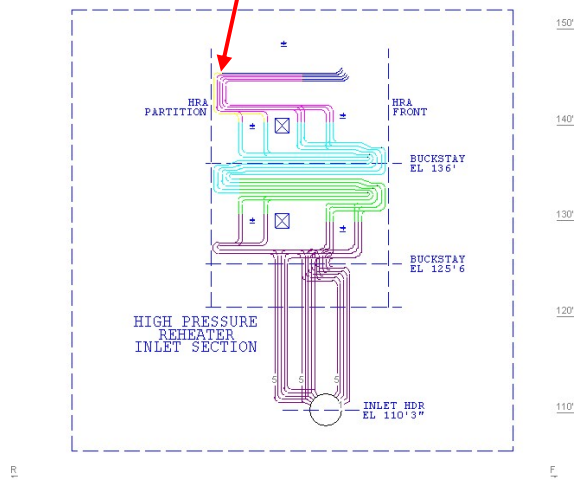
Elevation: 145'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.25" OD x .200" MWT x SA-213T12

The Final Risk Index Number is 5

Install one 6" shield to Tube 3 at Assembly 211 due to fly ash erosion. Repair is at the upper left side of the tube where gouging erosion is occurring. No UT was possible due to tube surface condition.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #30
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater High Pressure, Bank 3 Top, Rear.

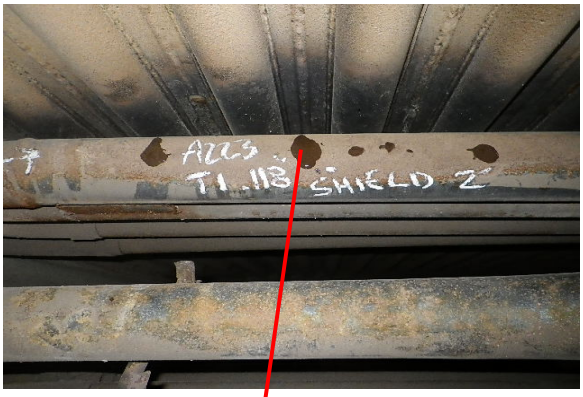
Elevation: 127'

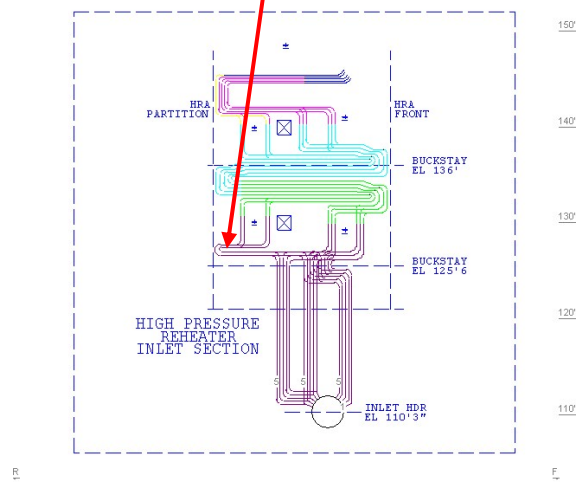
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.5" OD x .150" MWT x SA-178C

The UT Data is .118

Install one 2' shield at Assembly 223 Tube 1 beginning at the partition wall solid baffle plate and extend towards the front for the given length.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #36
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater High Pressure, Bank 2 Bottom, Rear.

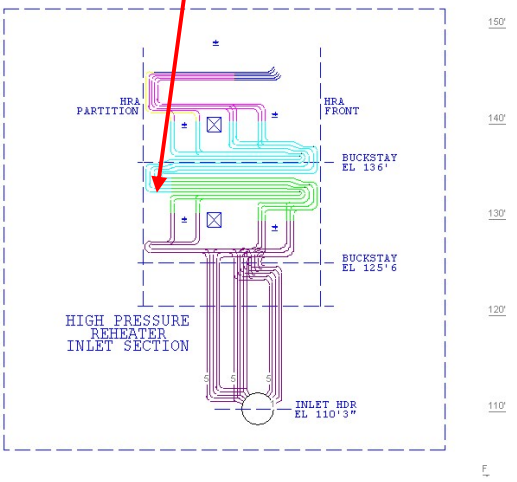
Elevation: 132'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-213T2

The Final Risk Index Number is 6

Install one 12" shield to Tube 2 at Assembly 101 due to fly ash erosion on the top side of the tube. UT readings could not be obtained due to surface profile but visually, appears to be at or near shield criteria.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #31
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cogley S.

General location is Reheater High Pressure, Bank 2 Bottom, Front.

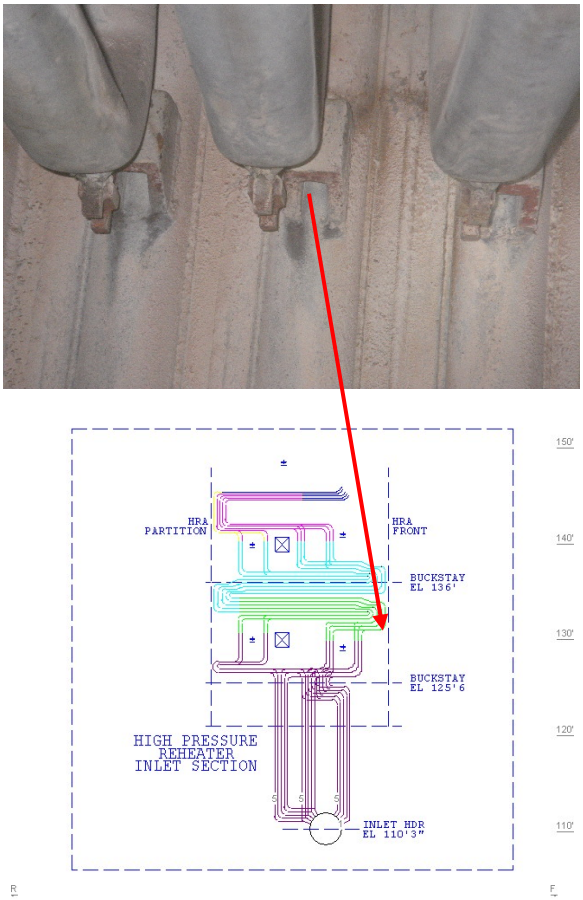
Elevation: 132'

Cause: Fatigue (Vibration)
Appearance: Disengaged

Material: 2.25" OD x .150" MWT x SA-178C

The Final Risk Index Number is 4

Raise, align and attach the support saddles to their associated support bracket on the front HRA wall. Approximately 25% of the assemblies have dislodged from the associated supports.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #16
Action: TRIM REPAIR-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater High Pressure, Bank 1 Top, Rear.

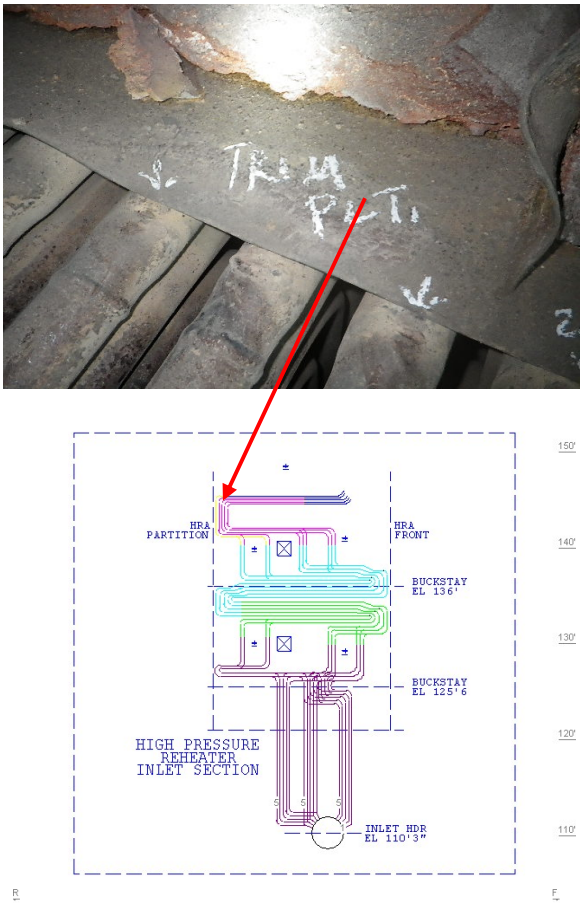
Elevation: 145'

Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

Material: 2.5" OD x .320" MWT x SA-213T12

The Final Risk Index Number is 5

Trim back or replace the solid deflection plate where marked to prevent the abrasion that is occurring from the plate to tube surfaces.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #28
Action: BAFFLE REPLACEMENT-P3
Priority #: 3

Inspector: Brown M.

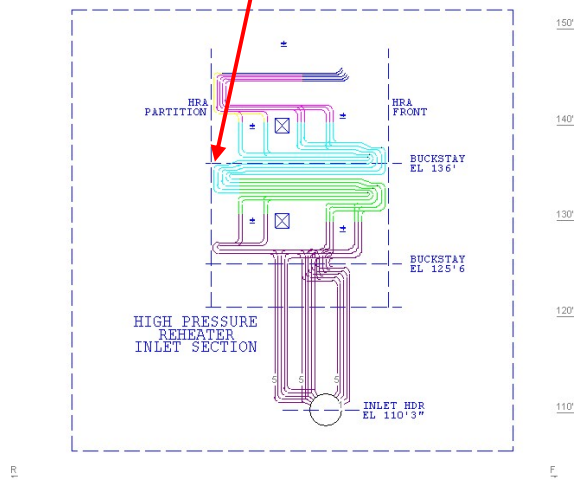
General location is Reheater High Pressure, Bank 2 Top, Rear.

Elevation: 137'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Detached

The Final Risk Index Number is 3

Reattach or replace two (2) sections of solid baffle plate and gussets at the partition wall roughly between assemblies 90-110.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #29
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater High Pressure, Bank 2 Top, Rear.

Elevation: 137'

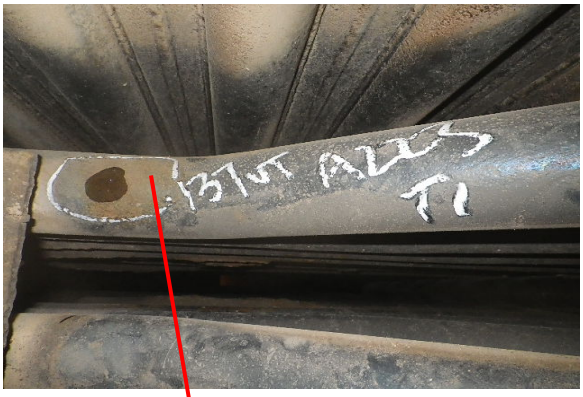
Cause: Erosion (Fly Ash)
Appearance: Eroded

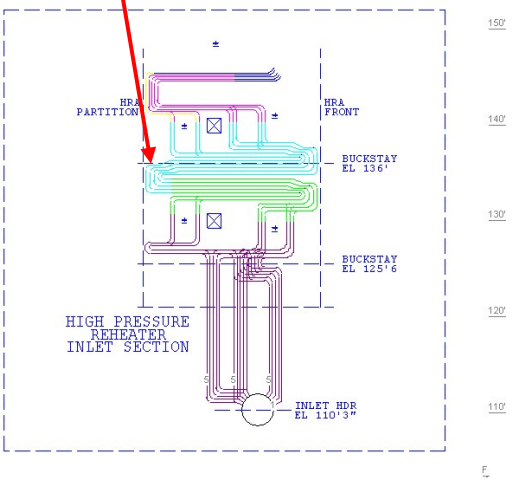
Material: 2.25" OD x .150" MWT x SA-213T2

The UT Data is .137

The Final Risk Index Number is 3

Monitor the area adjacent to the partition wall baffle plate at Assembly 223, Tube 1. UT reading was 0.137 near the plate.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #2
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Hubbard T.

General location is Reheater High Pressure, Bank 2 Top, Front.

Elevation: 137'

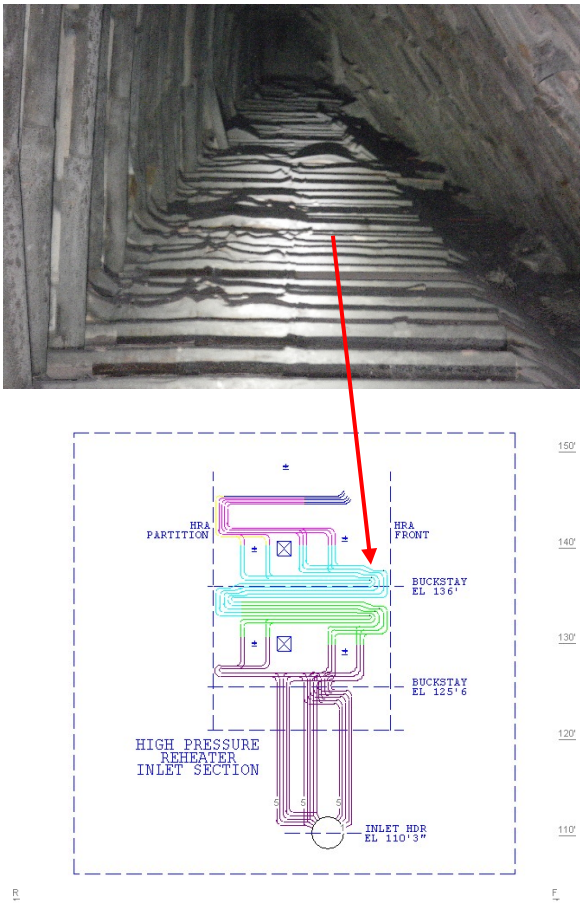
Cause: Erosion (Soot Blower)
Appearance: Deteriorated

Material: 2.25" OD x .150" MWT x SA-213T2

The Final Risk Index Number is 2

Shields are deteriorated from previous soot blower operation. They need to be repaired/replaced if soot blowers are brought back into service.

If soot blowers are not going to be utilized, it is recommended all shields here be removed as they are trapping ash and after wash down contributing to excessive corrosion and pitting.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #8
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Cavote P.

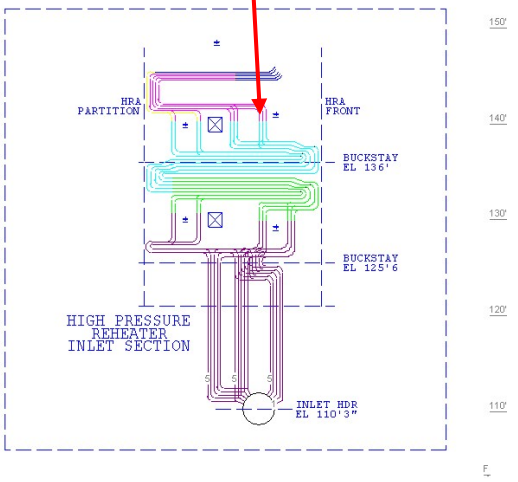
General location is Reheater High Pressure, Bank 1 Bottom, Front.

Elevation: 141'

Cause: Thermal Fatigue
Appearance: Deteriorated

The Final Risk Index Number is 1

Numerous shields are deteriorated, damaged, detached, or missing throughout the entire bank. Replace or reattach shields as needed.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #9
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Brown M.

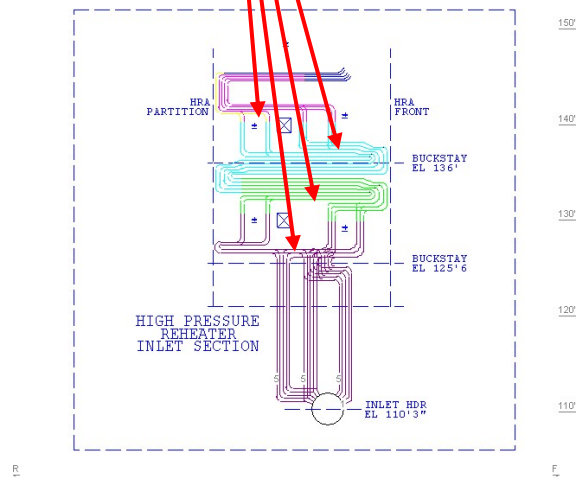
General location is Reheater High Pressure, All Banks.

Elevation: 145'

Appearance: Detached

The Final Risk Index Number is 4

Throughout the HP Banks, the spacer canes where installed, are detached and/or loose causing abrasion potentials to occur to the adjacent tubes. It is recommended that those that are loose either be secured or removed as some do not appear to be offering any benefit to assembly spacing.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #47
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Cogley S.

General location is Reheater High Pressure, Inlet Header.

Elevation: 110'

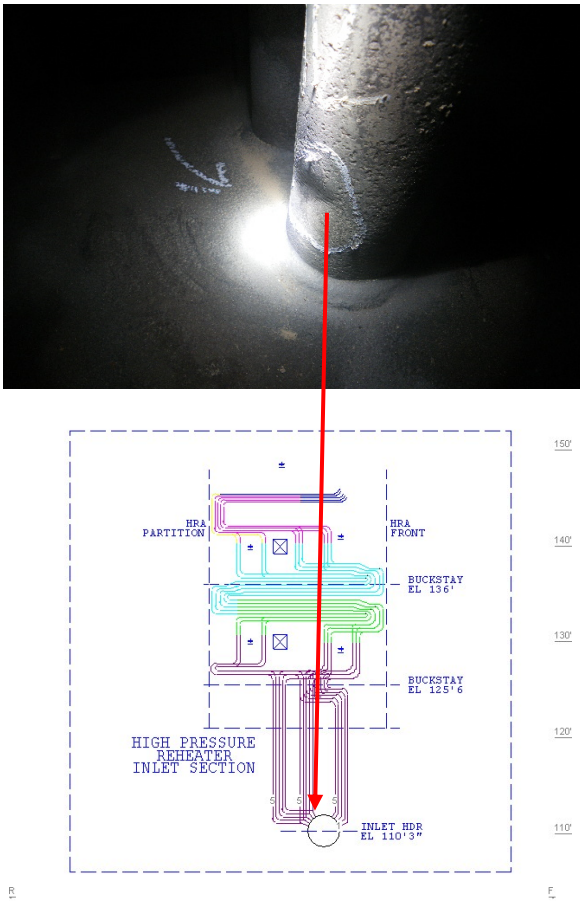
Appearance: Crushed Tube

Material: 2.5" OD x .150" MWT x SA-178C

The Final Risk Index Number is 3

Located on the rear side of the High Pressure Reheat Inlet Header, tube 1 of assembly 90 is dented approximately 2 inches above the header. UT readings are at or above MWT.

Tubes counted front to rear.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 1-Reheater High Pressure

Record: #6
Action: PLAN FOR FUTURE REPLACEMENT-P3
Priority #: 3

Inspector: Cogley S.

General location is HRA Front Wall, Hanger Tube.

Elevation: 155'

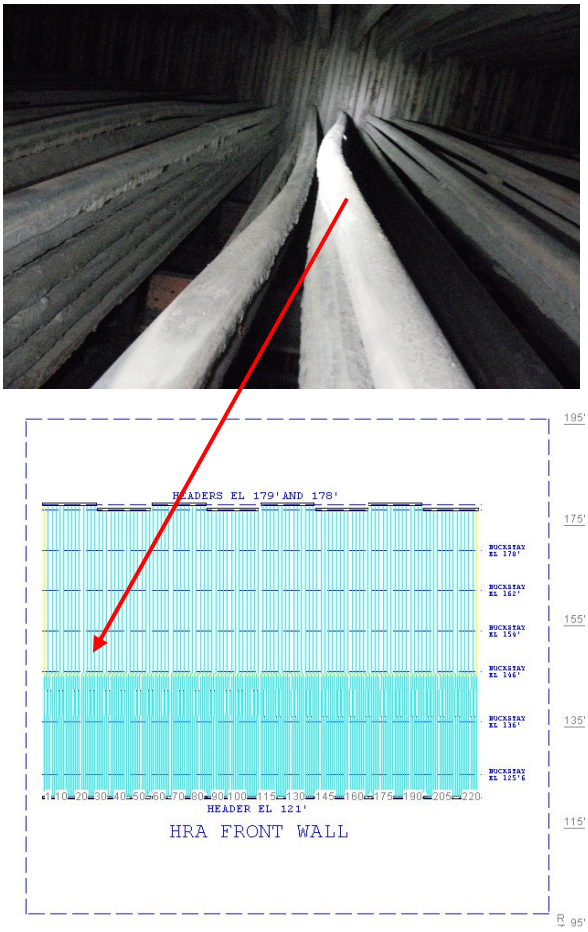
Cause: Fatigue (Thermal)
Appearance: Bowed Tubing

Material: 2.375" OD x .400" MWT x SA-213T2

The Final Risk Index Number is 2

Plan for Future Replacement the following tubes of the HRA Front Wall Hangers due to bowing approximately 1 tube diameter:

Tubes:
T2
T3
T6
T7
T10-13
T16
T17



The replacements would begin 12' above the refractory extending upward approximately 15' into the penthouse.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

AREA: Reheater Low Pressure

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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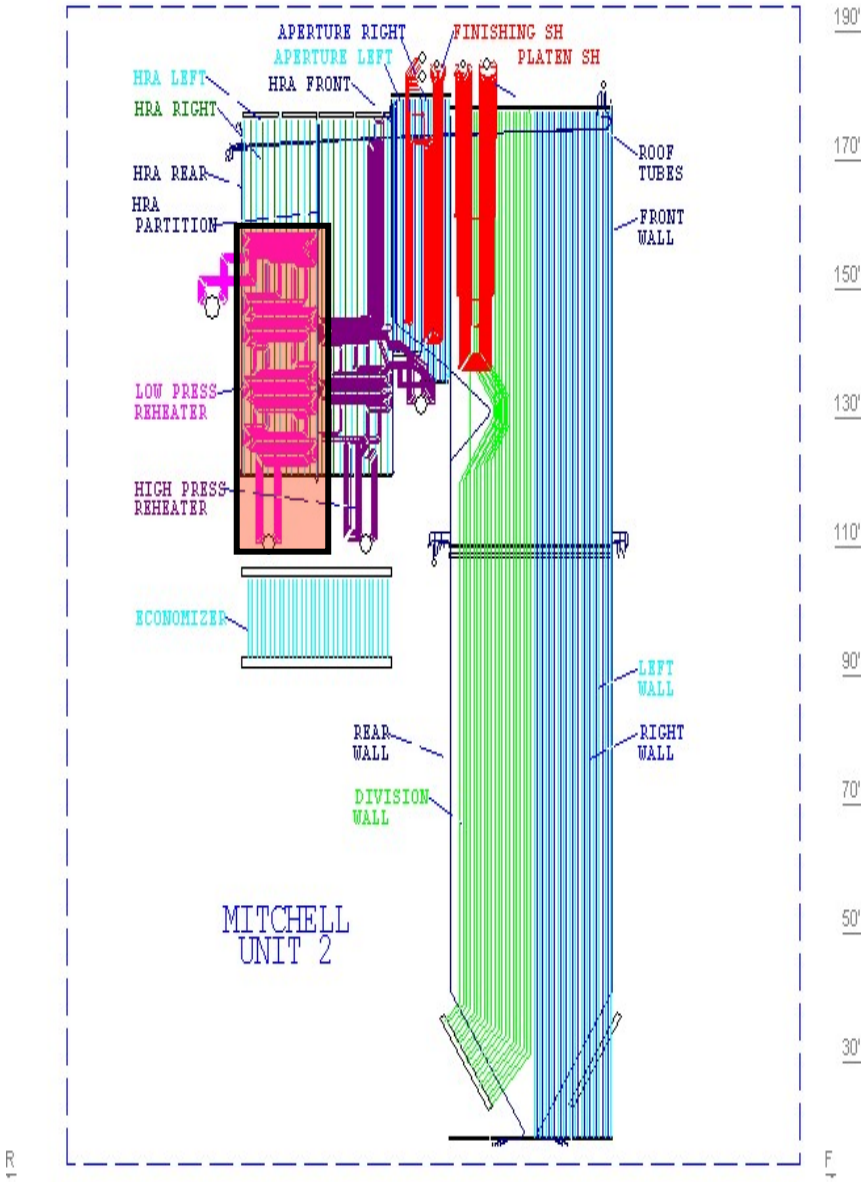

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

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P R I O R I T Y # 1 R E P A I R S

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Record: #49
Action: PROVIDE ACCESS TO INSPECT-P1
Priority #: 1

Inspector: Brown M.

General location is Reheater Low Pressure, Inlet Header, Right.

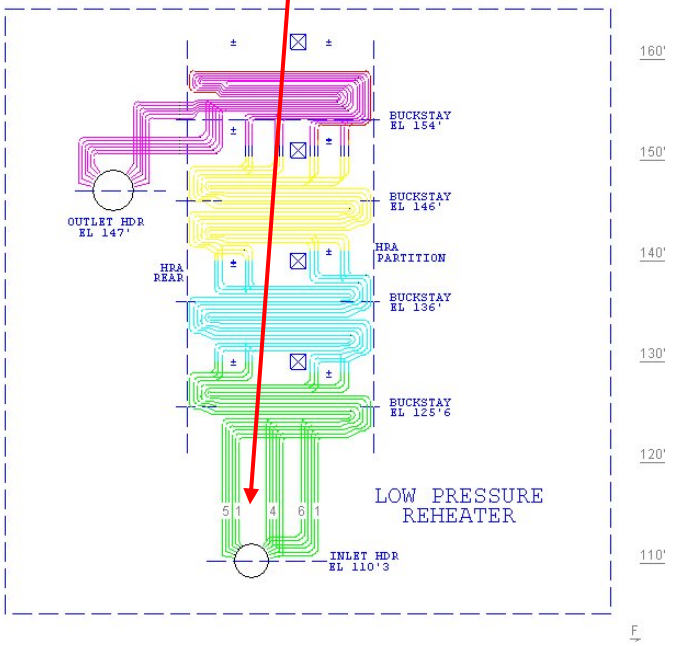
Elevation: 110'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-178C

The Final Risk Index Number is 18

It is recommended that access be provided to the inlet header at the right side wall to inspect for erosion at the offset tubes. The partition baffle wall does not allow for access to this area.



Access Provided:
Tubes are polished however no repairs are present at this time. Monitor during future outages and repair as necessary.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

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P R I O R I T Y # 2 R E P A I R S

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Record: #46
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Brown M.

General location is Reheater Low Pressure, Bank 4 Top, Rear.

Elevation: 127'

Cause: Erosion (Fly Ash)
Appearance: Eroded

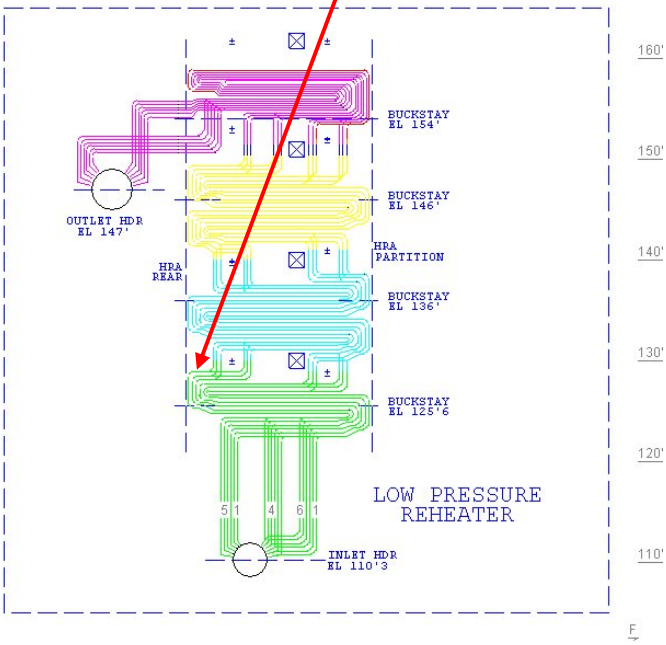
Material: 2.25" OD x .150" MWT x SA-178C

The UT Data is .107-.123-.127

Extend the existing pad weld where marked on front edge of ***Tube 1, Assembly 223 by 1"x2" due to a RWT of 0.107"***.

In addition, install an approximate 2' shield after weld repair as UT readings of 0.123" and 0.127" were on both sides of the existing pad weld.

The shield should begin at the deflection plate and extend to the front for the given length.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #41
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2

Inspector: Brown M.

General location is Reheater Low Pressure, Bank 2 Top, Rear.

Elevation: 148'

Cause: Fatigue (Thermal/ Vibration)or

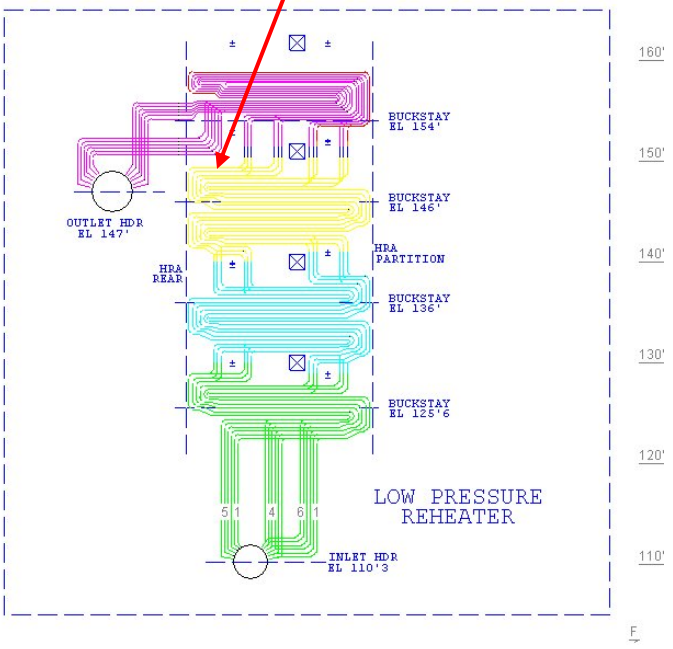
Detached
Appearance: Misaligned

The Final Risk Index Number is 8

Numerous dropped assemblies are present at the top rear side of the unit indicating detachment or broken support clips.

Per OEM dwg's, there are upper and lower support clips for bank 2. Those involved here are the uppers supports as no alignment issues were observed on the bottom side of the bank.

Further research will be required to determine the extent of repair.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

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P R I O R I T Y # 3 R E P A I R S

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Record: #34
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cogley S.

General location is Reheater Low Pressure, Bank 3 Top, Front.

Elevation: 137'

Cause: Erosion (Fly Ash)

Appearance: Eroded

Material: 2.25" OD x .150" MWT x SA-213T2

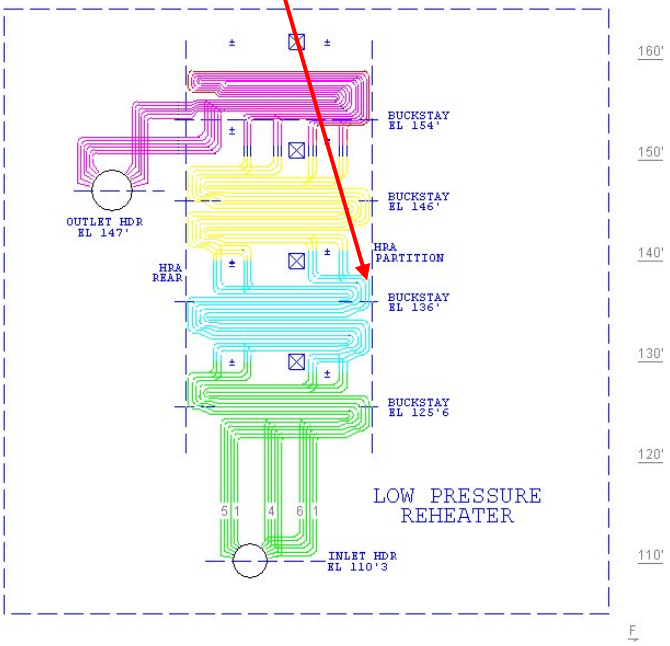
The Final Risk Index Number is 4

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18":

Assembly/Tube(RWT)

A1/T1(0.120"), A2/T1(0.128"), A3/T1(0.128"), A4/T1(0.127"), A5/T1(0.128"), A5/T1(0.128"), A8/T1(0.127"), A221/T1(0.126"), A223/T1(0.115")

The shields will begin 12" to the rear of the partition wall extending toward the front of the boiler encompassing the bends.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #43
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cogley S.

General location is Reheater Low Pressure, Bank 4 Top, Front.

Elevation: 127'

Cause: Erosion (Fly Ash)
Appearance: Eroded

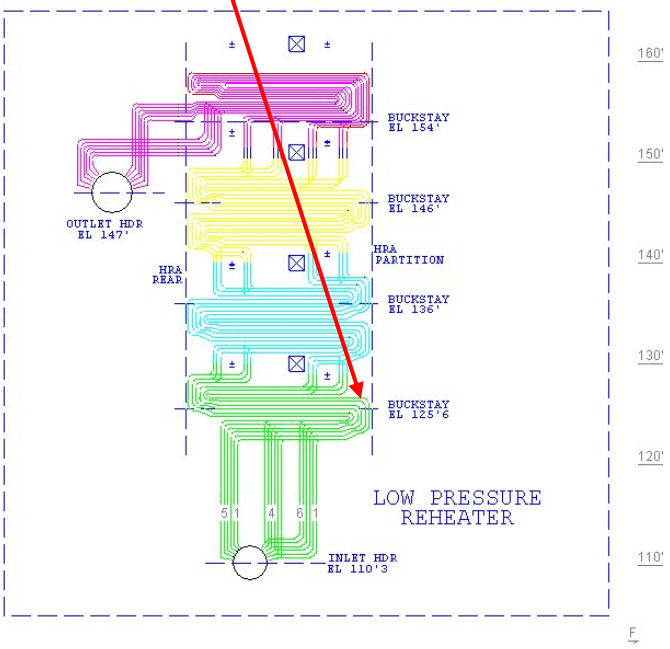
Material: 2.25" OD x .150" MWT x SA-178C

The Final Risk Index Number is 4

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18":

Assembly/Tube(RWT)

A33/T1(0.127"), A34/T1(0.126"), A35/T1(0.125"), A36/T1(0.126"), A37/T1(0.128"), A38/T1(0.125"), A39/T1(0.126"), A43/T1(0.128"), A44/T1(0.125"), A53/T1(0.125"), A54/T1(0.127"), A55/T1(0.128"), A121/T1(0.127"),A122/T1(0.126") A123/T1(0.124")



The shields will begin 12" to the rear of the partition wall extending toward the front of the boiler encompassing the bends. Tube 1 of the remaining assemblies, not covered by the baffles, are at or just above shield criteria. Due to the quantity of shields needed, extending the plate baffle across the top of bank 4 at the partition wall would be an acceptable repair.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #48
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater Low Pressure, Inlet Header.

Elevation: 112'

Cause: Erosion (Fly Ash)
Appearance: Eroded

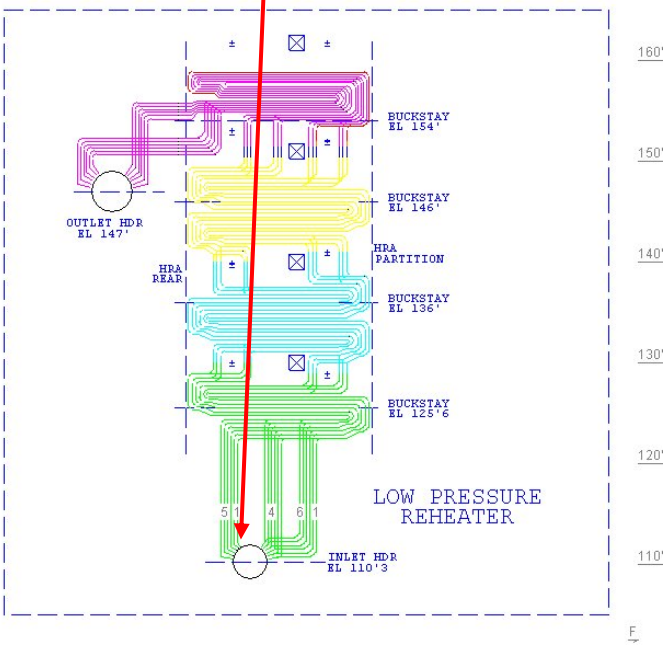
Material: 2.25" OD x .150" MWT x SA-178C

The Final Risk Index Number is 6

Install two (2) 6" shields at Tube 1, Assembly 113 adjacent to the partition baffle wall and above the inlet header.

One is just above the header proper and the second is about at chest level.

NOTE: The tubes may not be in shield criteria at this time, however, due to the obscure location, shielding is recommended.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #20
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cavote P.

General location is Reheater Low Pressure, Bank 1 Top, Rear.

Elevation: 159'

Cause: Fatigue (Thermal/ Vibration)

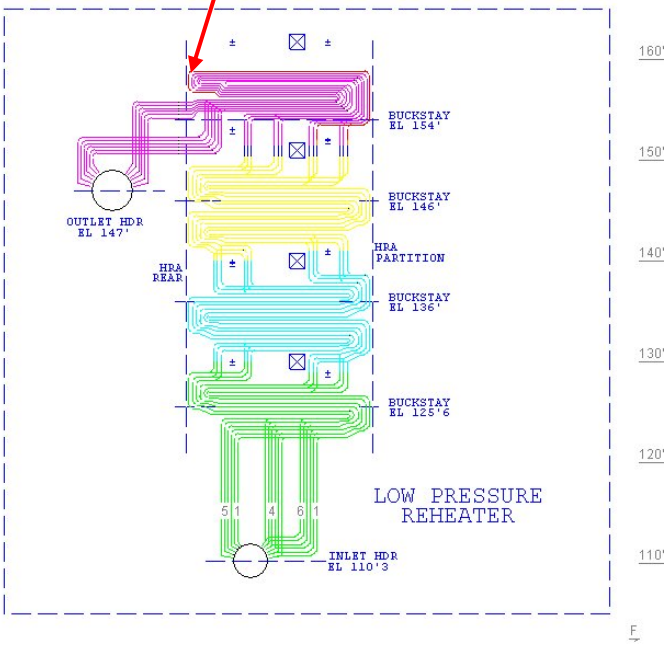
Appearance: Detached

Material: 2.5" OD x .320" MWT x SA-213T91

The Final Risk Index Number is 3

Detached and dropped horizontal ***Assembly 223*** is rubbing against the corner wall at the rear and right walls, creating a concern for abrasion in its current position.

Raise and realign onto its rear wall bracket to prevent abrasion erosion.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #22
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cavote P.

General location is Reheater Low Pressure, Bank 2 Top, Front.

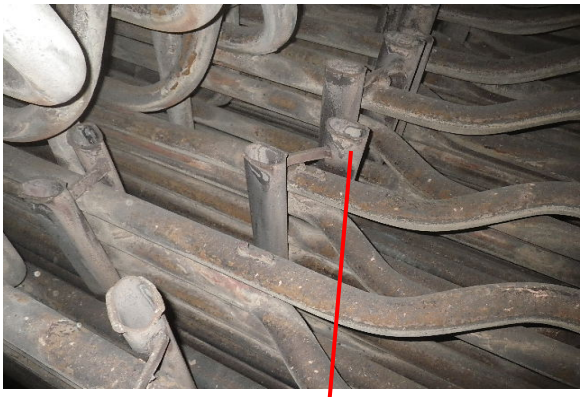
Elevation: 148'

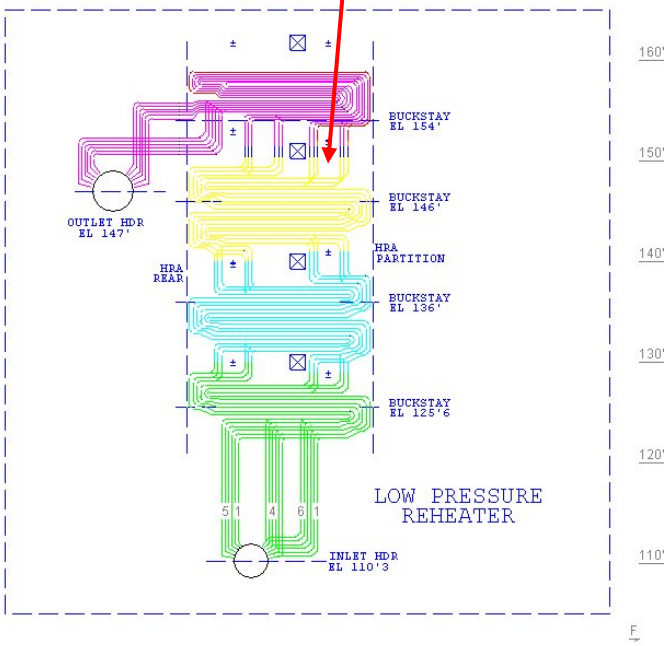
Cause: Fatigue (Vibration)
Appearance: Detached

The Final Risk Index Number is 5

Several spacer canes in the front sootblower path have detached and slid away from their respective attachment brackets, causing potential for abrasion on assembly tubes.

Move the loose canes and properly reattach them back into their attachment brackets.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #24
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cavote P.

General location is Reheater Low Pressure, Bank 1 Top.

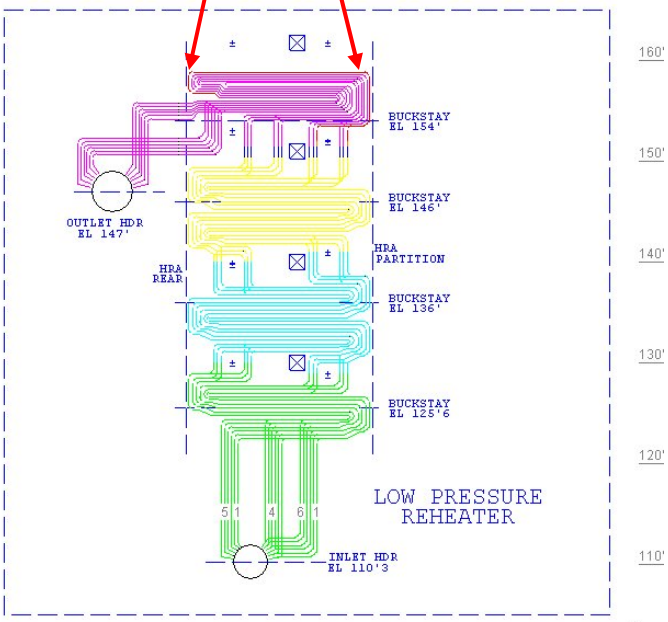
Elevation: 159'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Detached

Material: 2.5" OD x .320" MWT x SA-213T91

The Final Risk Index Number is 4

Several horizontal tube assemblies are dropped as a result of either detaching from the rear end wall brackets or un-attaching at the front end. The following is a list of all horizontal assemblies affected:



Assembly:

A15	A92
A18	A119
A23	A149
A26	A151
A29	A159
A41	A175
A47	A195
A57	A196
A65	A198
A66	A201
A72	A207
A75	A209
A81	A233

Raise and reattach these assemblies onto their respective rear wall brackets and/or front brackets.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #23
Action: REFRACTORY INSTALLATION-P3
Priority #: 3

Inspector: Hubbard T.

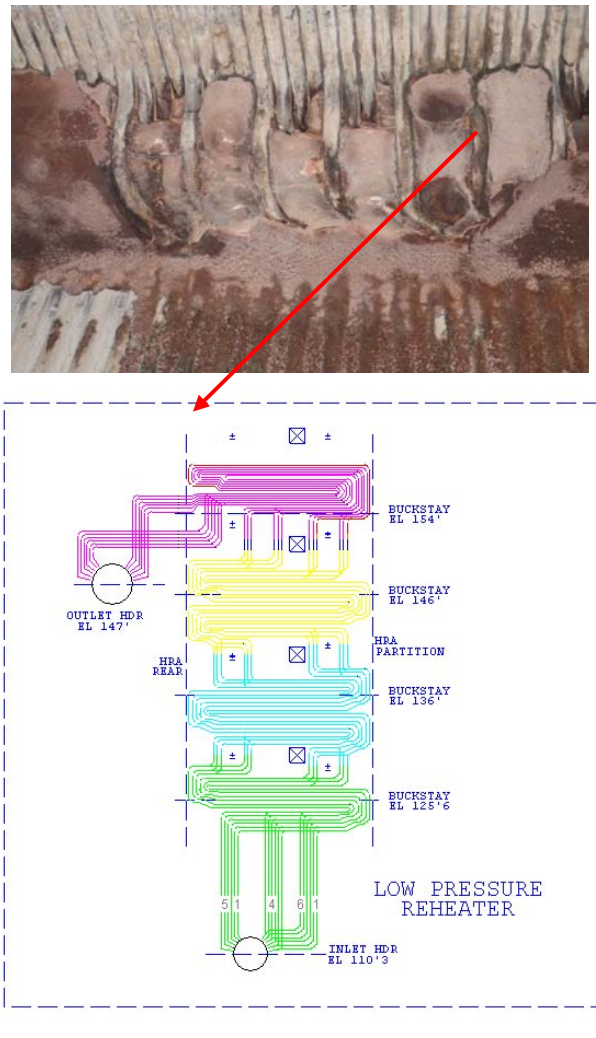
General location is Reheater Low Pressure, Rear Wall.

Elevation: 159'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Missing

The Final Risk Index Number is 1

Replace missing refractory where the HRA rear wall tubes meet the roof tubes.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #45
Action: REFRACTORY INSTALLATION-P3
Priority #: 3

Inspector: Cogley S.

General location is Reheater Low Pressure, Bank 4 Top, Front.

Elevation: 127'

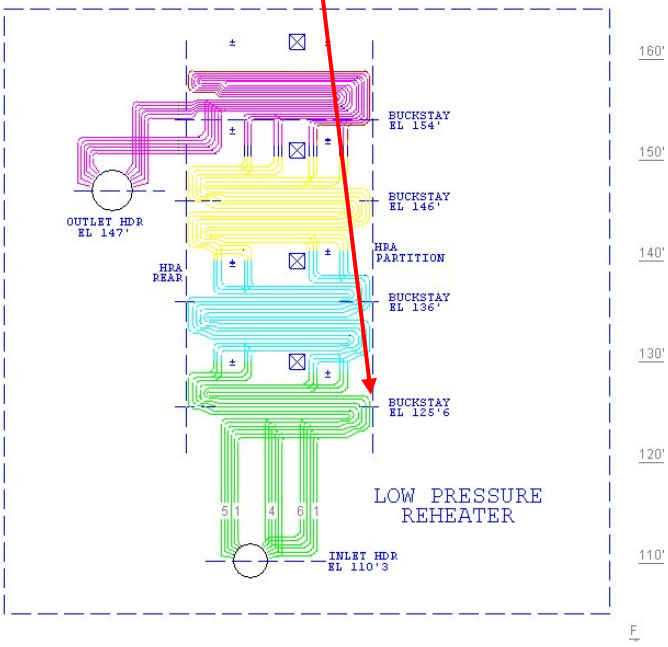
Cause: Erosion (Fly Ash)

Material: 2.25" OD x .150" MWT x SA-178C

The Final Risk Index Number is 1

Replace missing refractory along the front partition wall baffle.

Note: Minor erosion is apparent however no partition wall tubes require repair at this time.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #42
Action: REMOVE ASH AND DEBRIS-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater Low Pressure, Bank 3 Top, Rear.

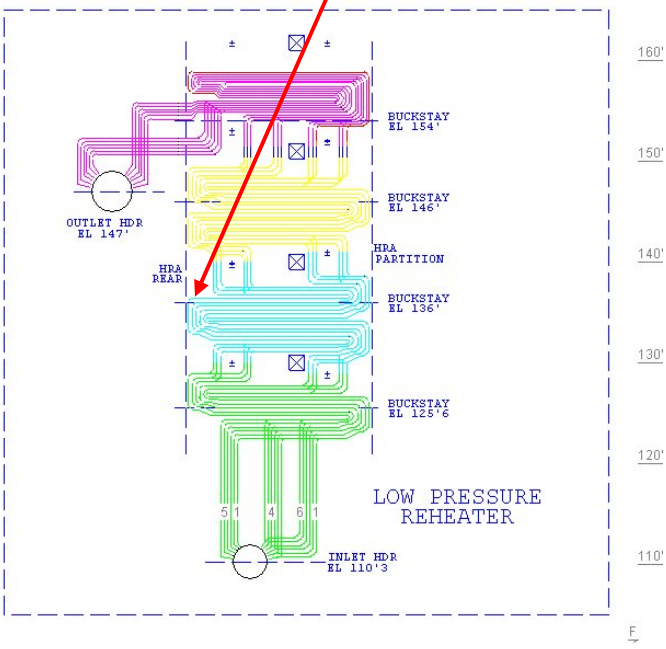
Elevation: 137'

Appearance: Blocked Gas Lane

Material: 2.25" OD x .150" MWT x SA-213T2

The Final Risk Index Number is 3

Remove the debris lodged between ***assemblies 7-8*** (long spacer cane remnant) and ***assembly 194-195*** (refractory) to restore gas flow and eliminate channeled erosion issues.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #25
Action: REMOVE DEBRIS REMNANTS-P3
Priority #: 3

Inspector: Hubbard T.

General location is Reheater Low Pressure, Bank 2 Bottom, Center.

Elevation: 145'

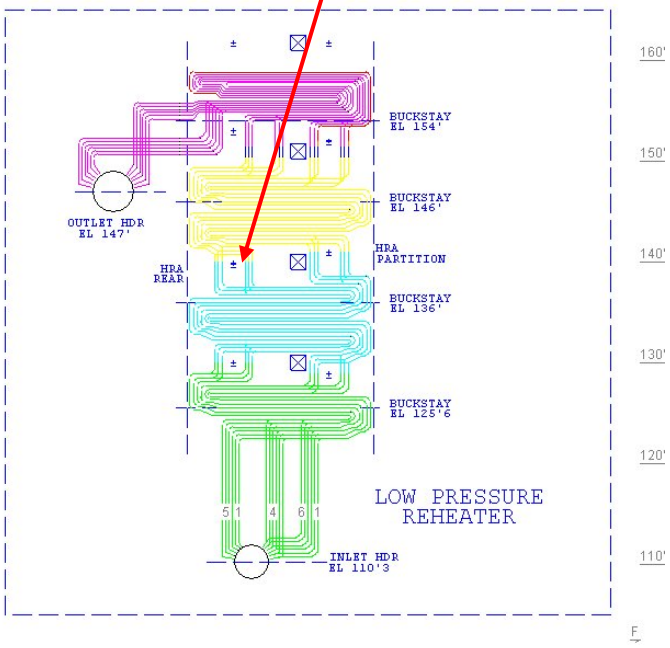
Cause: Fatigue (Thermal/ Vibration)

Appearance: Disengaged

The Final Risk Index Number is 1

The shields in this area are disengaged and trapping ash. During wash down, the moisture and ash create conditions that are conducive to tube corrosion.

It is recommended that any loose or damaged shields in this area be removed.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #33
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Cogley S.

General location is Reheater Low Pressure, Bank 1 Bottom, Front.

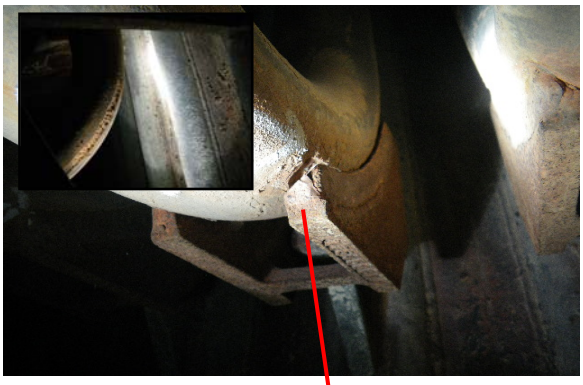
Elevation: 141'

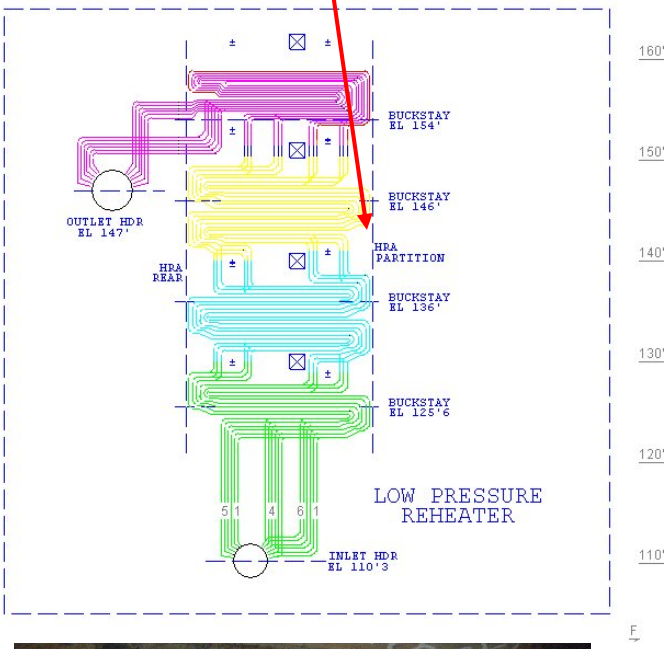
Cause: Fatigue (Stress)
Appearance: Cracked Weld

Material: 2.5" OD x .320" MWT x SA-213T91

The Final Risk Index Number is 6

Add 3210,3208 - As noted during previous inspections, the support lugs at the bottom of the Low Pressure Reheat are beginning to fail. Some loss of tube material is present where welds are completely detached.





In addition, the supplemental "knee" supports are also failing. Continue to monitor and raise, realign and reattach supports as necessary.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #40
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater Low Pressure, Bank 1 Bottom, Center and Rear.

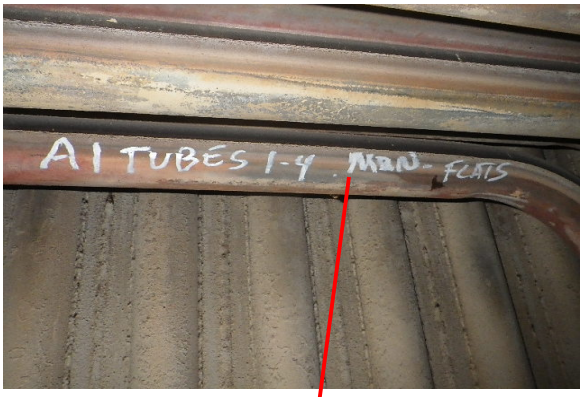
Elevation: 154'

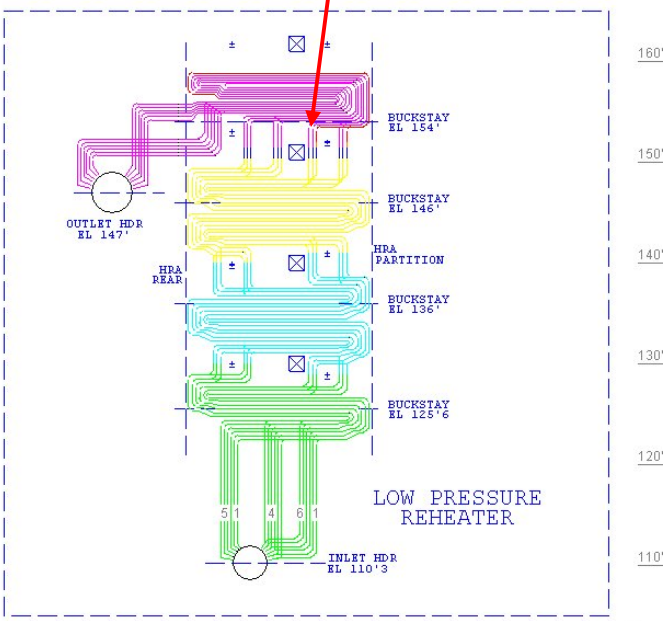
Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

The Final Risk Index Number is 2

Erosion flats could be felt on ***Tubes 1-4*** (counted up) at ***Assembly 1*** from the approximate unit center and near the rear of the unit.

UT measurements at this time do not indicate the need for repair as readings are below the nominal thickness but still above MWT. Monitor at each outage.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #44
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater Low Pressure, Bank 4 Top, Rear.

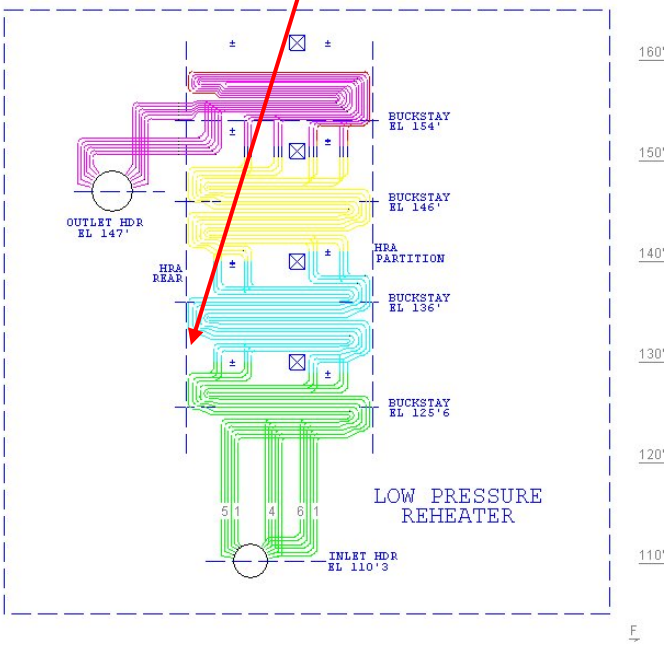
Elevation: 127'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Broken and Missing

The Final Risk Index Number is 1

The refractory seal on the deflection plate at the rear wall is cracked, broken and missing throughout the bank. A gap is present where the plate contacts the crown of the tube.

NOTE: No erosion was observed from channeling. Monitor for erosion at each outage and replace refractory if erosion becomes evident in the future.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #37
Action: PLAN FOR FUTURE REPLACEMENT-P3
Priority #: 3

Inspector: Brown M.

General location is Reheater Low Pressure, Bank 2 Top, Rear.

Elevation: 148'

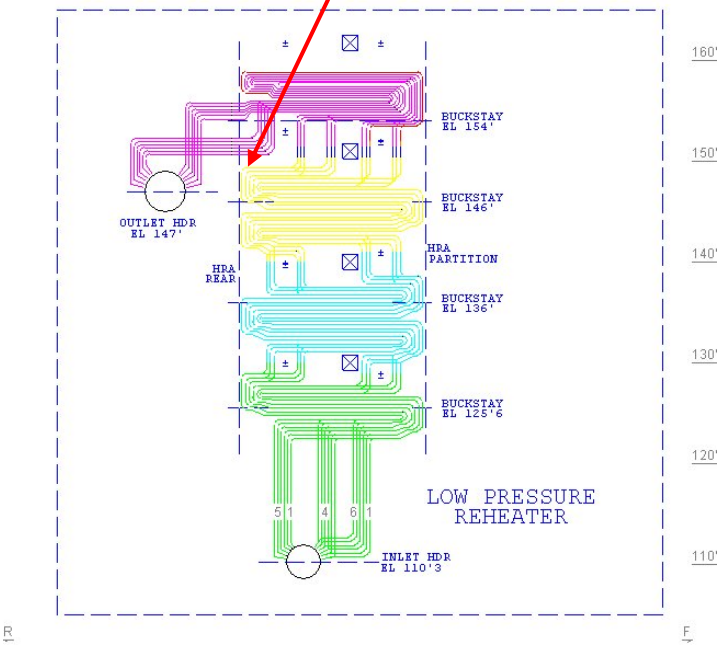
Cause: Fatigue (Thermal/ Vibration)

Appearance: Deteriorated

The Final Risk Index Number is 3

Plan for the replacement of the solid deflection plate located on top of bank 2 at the rear wall.

The plate is deflected in sections along its entire length, however still functional at this time.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #38
Action: PLAN FOR FUTURE REPLACEMENT-P3
Priority #: 3

Inspector: Brown M.

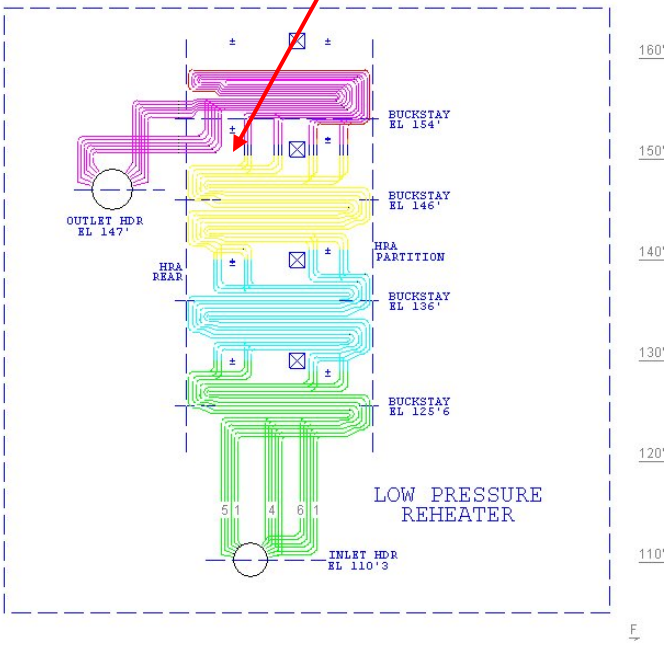
General location is Reheater Low Pressure, Bank 2 Top.

Elevation: 148'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Deteriorated

The Final Risk Index Number is 3

Remove or replace all spacer canes on the top side of bank 2. All have become fatigued, and deteriorated.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 2-Reheater Low Pressure

Record: #39
Action: PLAN FOR FUTURE REPLACEMENT-P3
Priority #: 3

Inspector: Brown M.

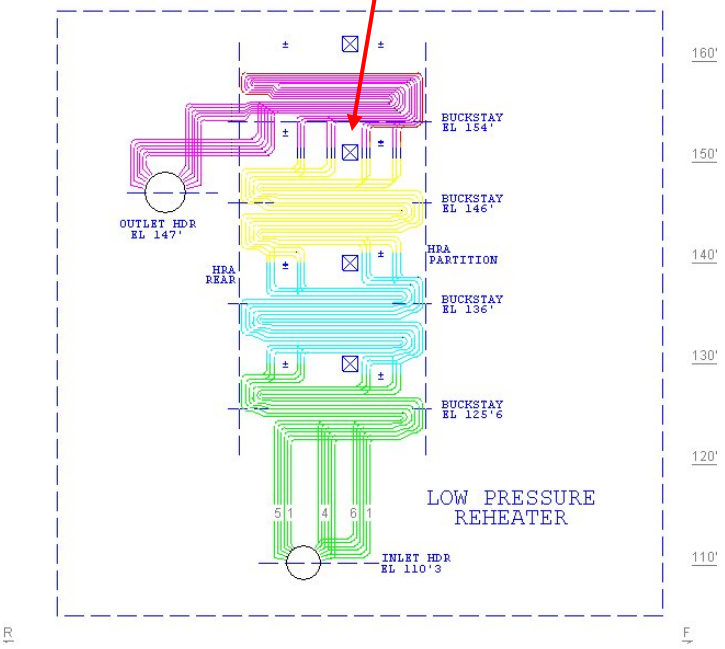
General location is Reheater Low Pressure, Bank 1 Bottom, Center.

Elevation: 154'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Deteriorated

The Final Risk Index Number is 3

After the dropped assemblies have been returned to their intended positions, replace the lower deteriorated edge of the components center ladder bracket throughout the bank.



Work Order: _____ Status: Inspected

AREA: Economizer

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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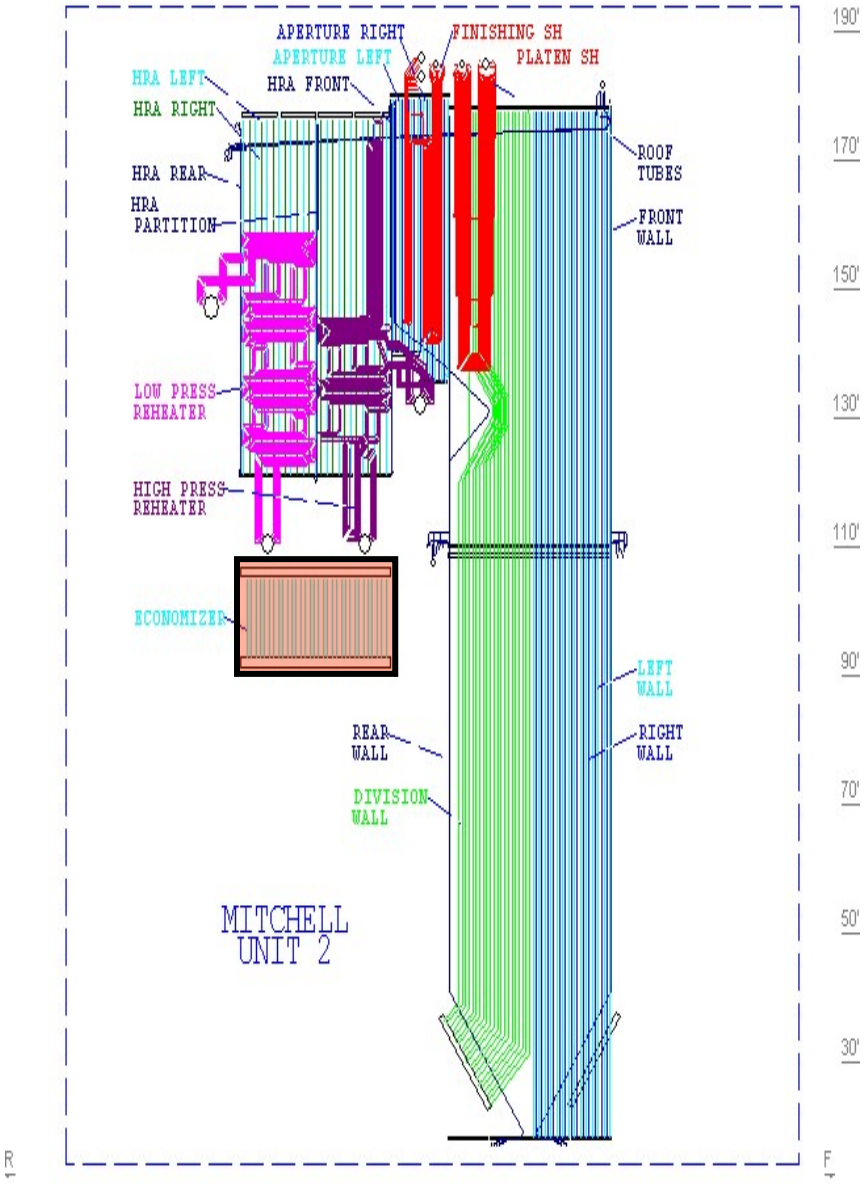

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

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P R I O R I T Y # 1 R E P A I R S

==========

Record: #52
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Cogley S.

General location is High Pressure Side, Bank 1 Top, Right.

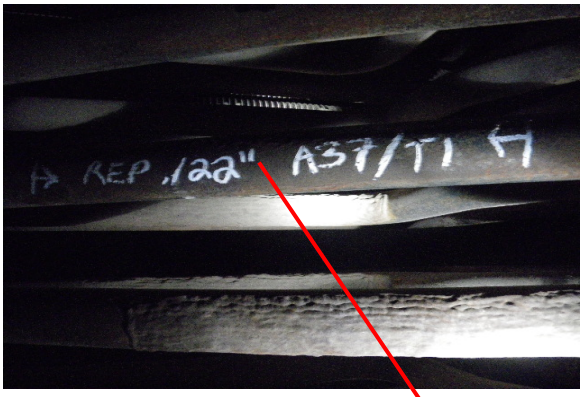
Elevation: 105'

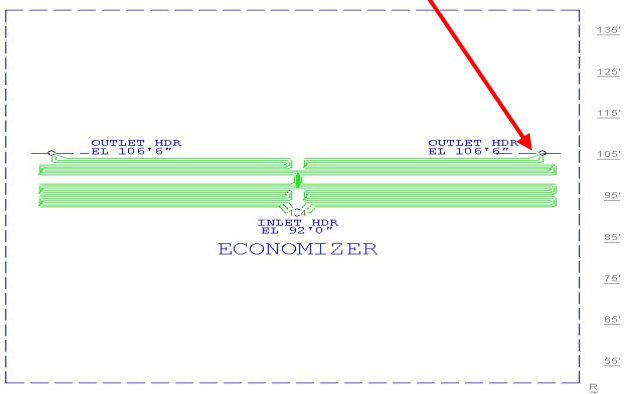
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .122

The Final Risk Index Number is 20





Replace tube 1 of assembly 37 for a length of 2' due to a RWT of 0.122". The replacement is on the header leg and cut lines are marked with white grease stick.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #57
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Brown M.

General location is High Pressure Side, Bank 1 Top, Header Leg.

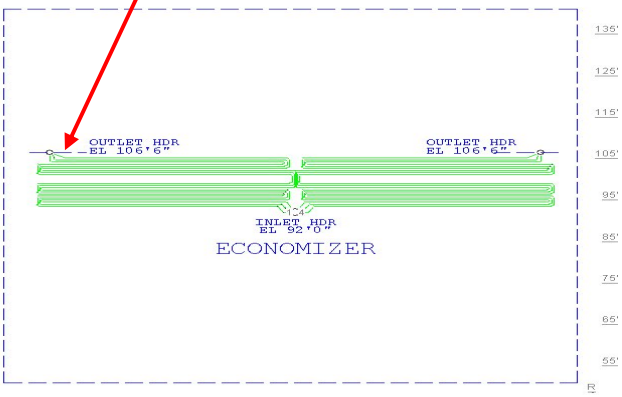
Elevation: 105'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 20

Replace a 1' section of tubing at Assembly 41, Tube 1 located on the right side of the left outlet header. Cut lines should begin at the tube stub and proceed down the given length. The area of least RWT is marked on tube should pad welding be used.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #61
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Brown M.

General location is High Pressure Side, Bank 2 Bottom, Front.

Elevation: 94'

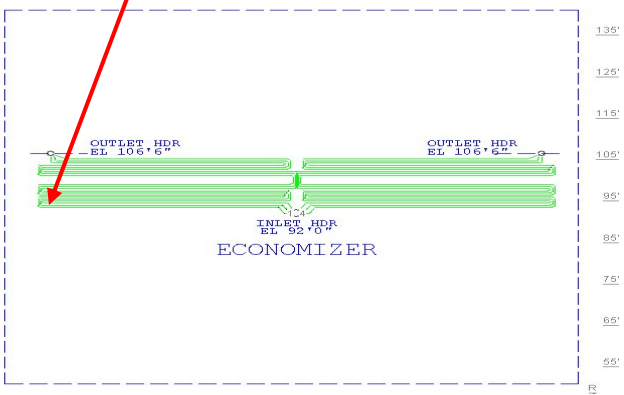
Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .161

The Final Risk Index Number is 25

Due to erosion flat and a ***RWT of 0.161", replace a 1.5' section of Tube 1, Assembly 1*** located in the bottom front corner above the proportioning dampers. Replacement will involve the 90 degree bend with cut-lines equally spaced from the center line of the bend.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

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P R I O R I T Y # 2 R E P A I R S

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Record: #50
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Hubbard T.

General location is High Pressure Side, Bank 1 Top, Center.

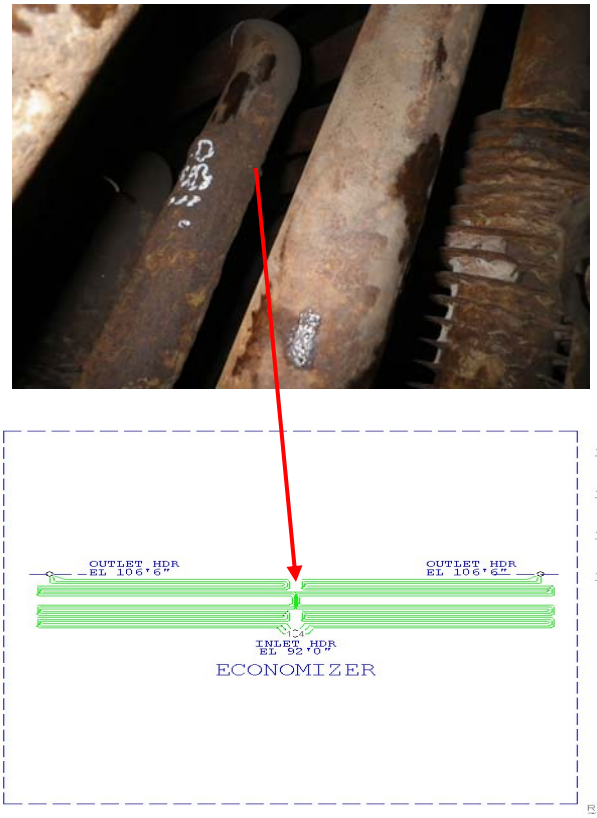
Elevation: 104'

Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:
Assembly/Tube(RWT)Length:



Assembly/Tube(RWT)Length:

A14/T2(0.204")8"
A15/T2(0.205")3"
A16/T2(0.204")8"
A17/T2(0.180")3"
A18/T2(0.204")8"

The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.

Work Order: _____ Status: Inspected

Record: #54
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is High Pressure Side, Bank 1 Top, Right.

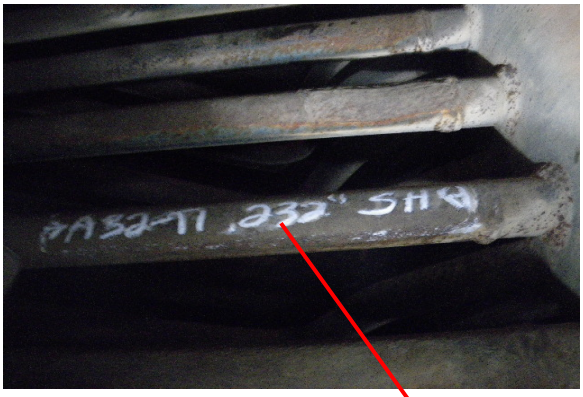
Elevation: 105'

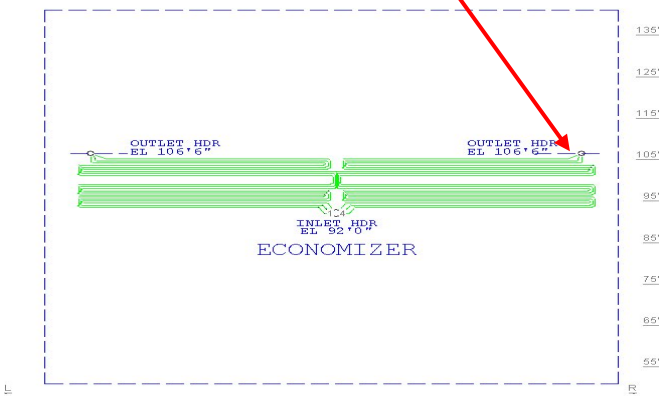
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 6

Due to a remaining wall thickness between 76% to 85% of MWT, the following are within shield criteria for a repair length of 18": Assembly/Tube(RWT):





Assembly/Tube(RWT):

A26/T1(0.232")
A32/T1(0.232")
A41/T1(0.232")

Due to location of repair and consultation with plant personnel, pad weld is the recommended repair.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #55
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is High Pressure Side, Bank 1 Top, Right.

Elevation: 105'

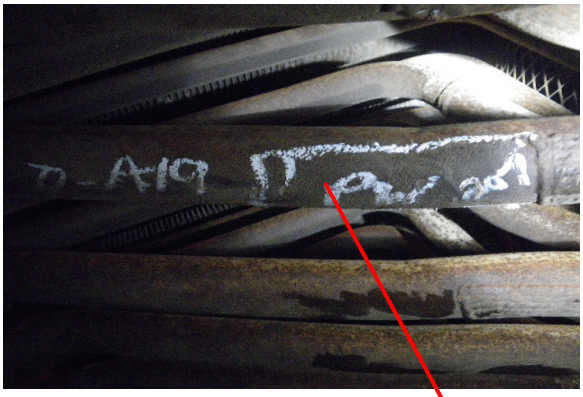
Cause: Erosion (Fly Ash)
Appearance: Eroded

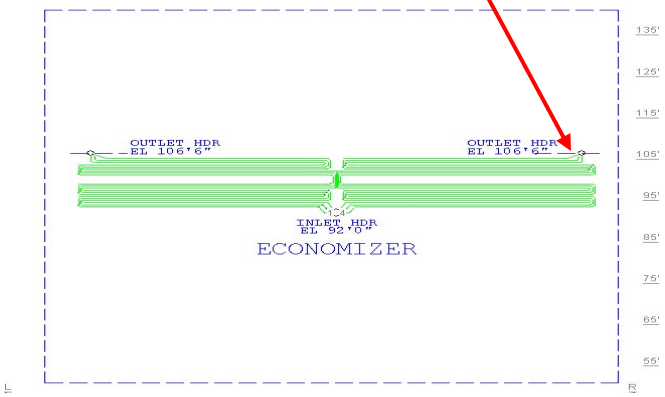
Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .207

The Final Risk Index Number is 13

Extend existing pad weld 8" x 2" on tube 1 of assembly 19 due to a RWT of 0.207".
Pad weld has been denoted by white box.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #56
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Brown M.

General location is High Pressure Side, Bank 1 Top, Left.

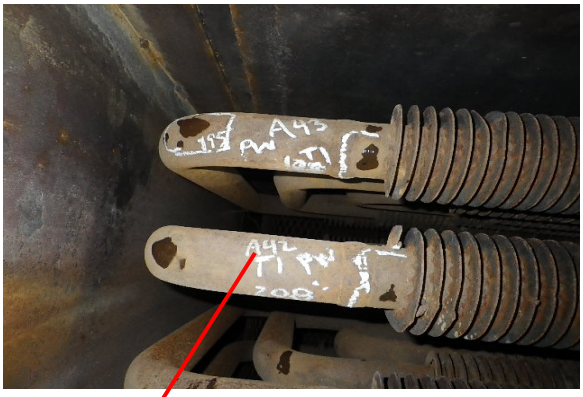
Elevation: 105'

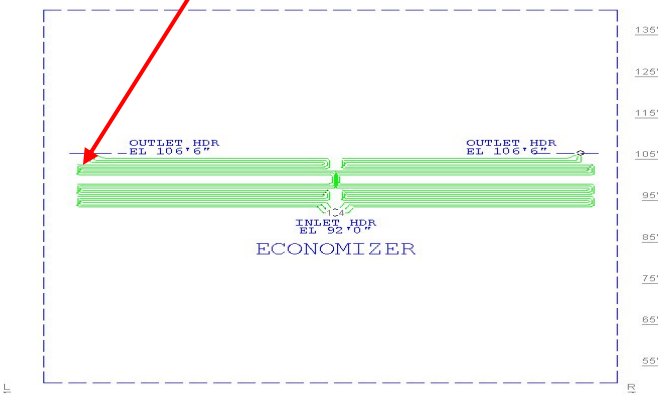
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 13

Apply pad welds to the following Assemblies/Tube/Length between the spiral fins and, where marked on the smooth sections:





Assembly/Tube/Length:
A30/T1/10"
A31/T1/10"
A31/T2/8"
A32/T1/10"
A33/T2/8"
A42/T1/2"
A43/T1/2", 3”

UT measurements, where obtainable, ranged from .180 to .208 on the un-finned sections.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #59
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is High Pressure Side, Inlet Header, Partition Wall.

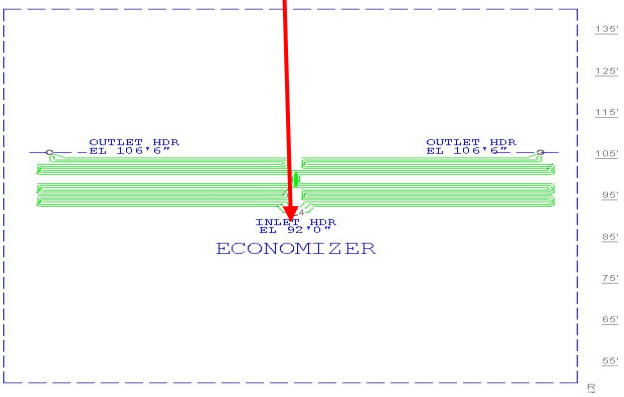
Elevation: 92'

Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .189

The Final Risk Index Number is 13



Restore tube 5 of assembly 43 to MWT by applying a 5" x 2" pad weld due to a remaining wall thickness of 0.189". The repair is located on the rear side of the tube adjacent to the partition wall. The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.

Note: Tubes counted from bottom to top.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #67
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Brown M.

General location is High Pressure Side, Bank 2 Top, Right.

Elevation: 98'

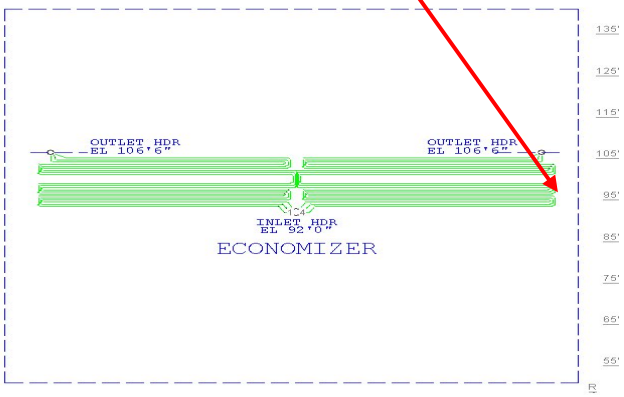
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .193

The Final Risk Index Number is 11

Apply one 2"x4" pad weld at Tube 1 of Assembly 40 adjacent to the right side wall. Repair area is marked on the bend of the tube.



Work Order: _____ Status: Inspected

Inspection Report

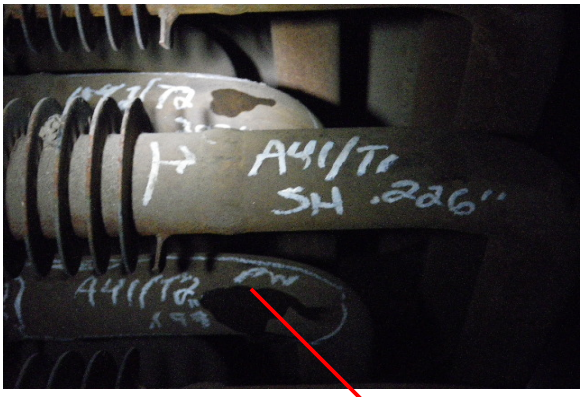
Station: Mitchell Unit: 2 Report Name: 3-Economizer

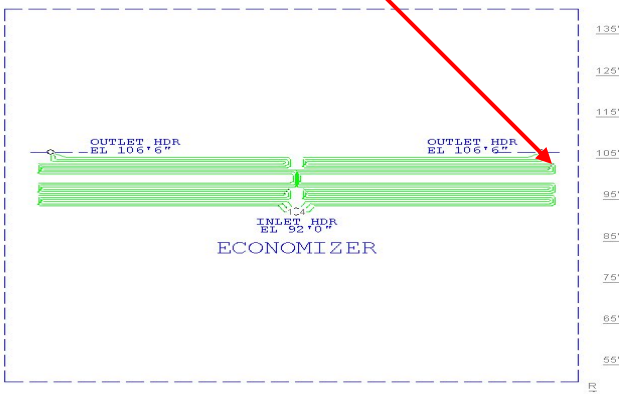
Record: #68
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is High Pressure Side, Bank 1 Top, Right.

Elevation: 105'





Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 11

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:
Assembly/Tube(RWT)Length:

Assembly/Tube/(RWT)Length:
A27/T1(0.199")4"
A28/T1(0.206")6”
A41/T2(0.199")10”
A42/T2(0.202")10”

The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #77
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

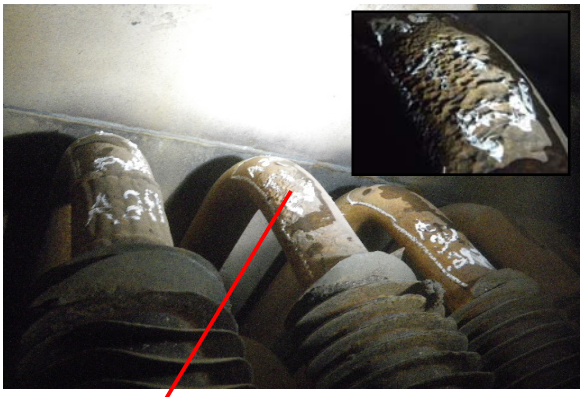
General location is High Pressure Side, Bank 2 Top, Left.
Elevation: 100'

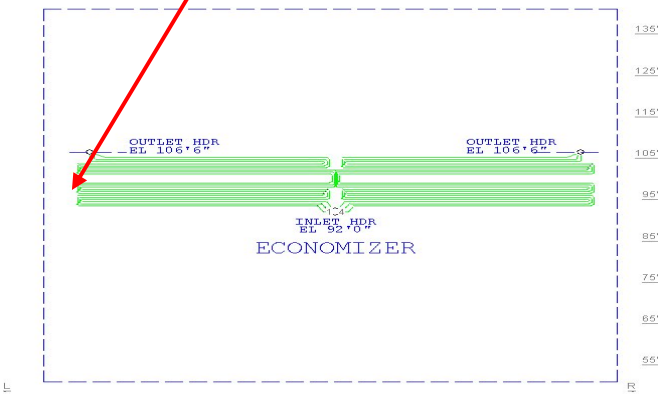
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:
Assembly/Tube(RWT)Length:





Assembly/Tube(RWT)Length:
A24/T1(0.209")8"
A28/T1(0.196")5"
A29/T1(N/A)8"
A30/T1(0.217")8"
A32/T1(0.219")8"

Note: Due to surface condition of the tubes in shield criteria, pad weld is the recommended repair.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #80
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is High Pressure Side, Bank 2 Top, Left.

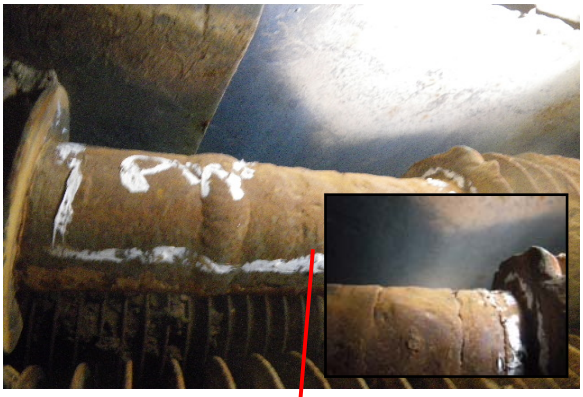
Elevation: 100'

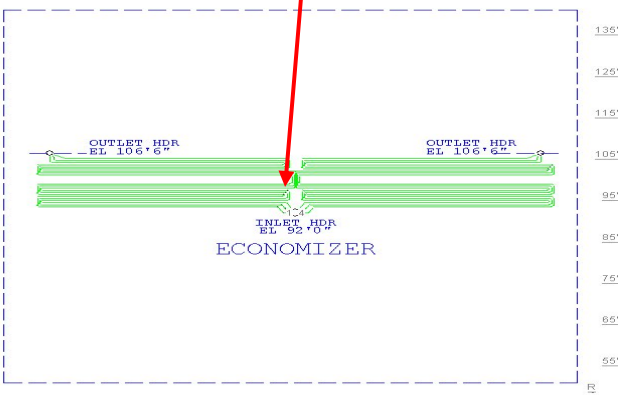
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 13

Restore tube 1 of assembly 43 to MWT by applying an 8" x 2" pad weld. The repair is located 18" to the left of the doglegs at the partition wall. No UT information was obtainable given the surface condition of the tube.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #82
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Brown M.

General location is Low Pressure Side, Bank 1 Top, Left.

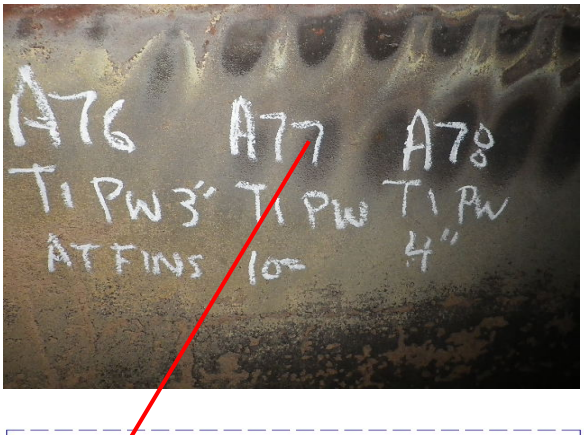
Elevation: 105'

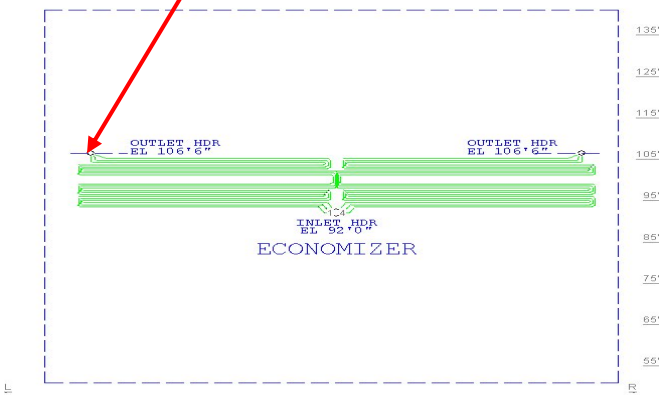
Cause: Erosion (Fly Ash)
Appearance: Erosion Between Spiral Fins

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 10

Apply pad welds between the spiral fins at the following Assemblies/Length of repair located between the left outlet header and side wall:





Assembly/Length:
A7/3"
A77/10"
A78/4"
A84/4"
A85/8"

Repair areas are marked on the spiral fins.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #87
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is Low Pressure Side, Bank 1 Top, Right.

Elevation: 105'

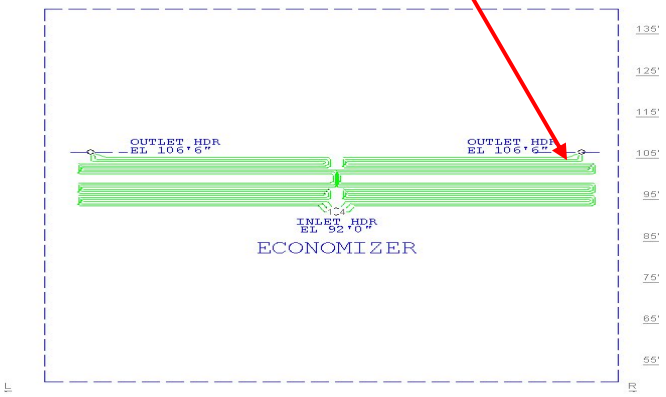
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:
Assembly/Tube(RWT)PW Length:

Assembly/Tube(RWT)Length:
A79/T1(0.210")5"
A81/T1(0.200")10"
A83/T1(0.209")12"



The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #79
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is High Pressure Side, Bank 2 Top, Dog Leg Tube.

Elevation: 100'

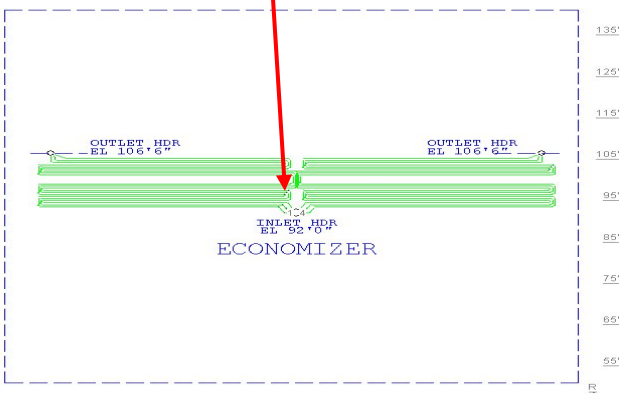
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .206

The Final Risk Index Number is 13

Restore tube 1 of assembly 43 of the left doglegs to MWT by applying a 8" x 2" pad weld due to a RWT of 0.206". The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #73
Action: ALIGN AND ATTACH-P2
Priority #: 2

Inspector: Hubbard T.

General location is High Pressure Side, Bank 1 Top, Center.

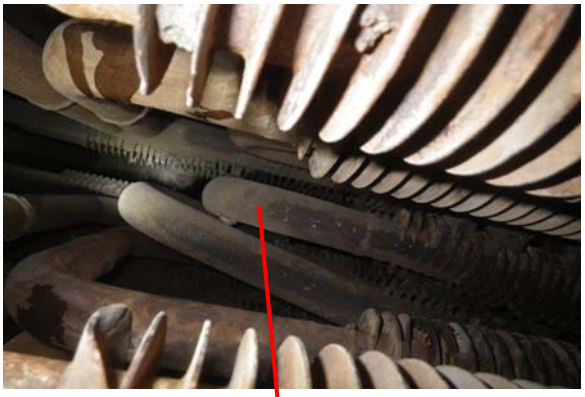
Elevation: 104'

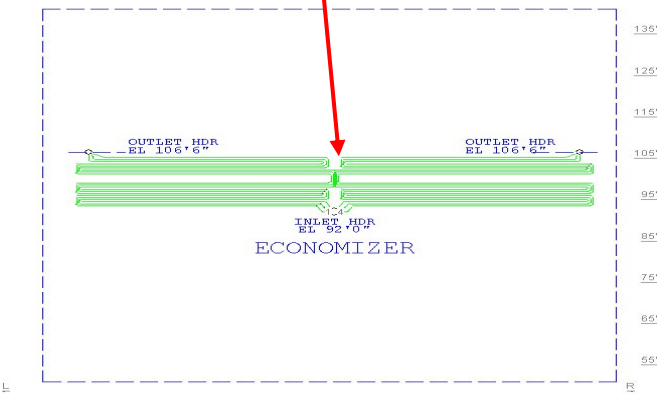
Appearance: Bowed Tubing

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 4

On the top of the economizer assemblies 19 and 20, the center loops are distorted over to assembly 21. Recommend re-aligning these loops to prevent abrading and fly ash erosion.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

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P R I O R I T Y # 3 R E P A I R S

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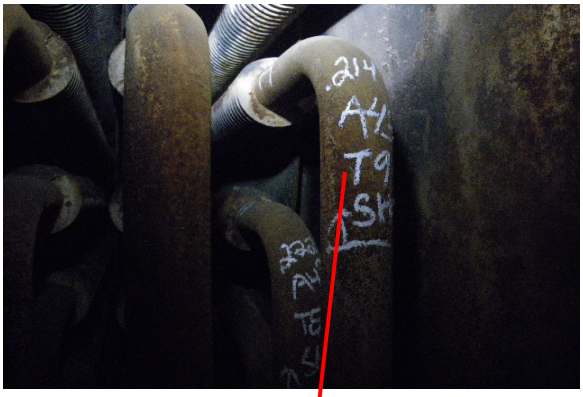
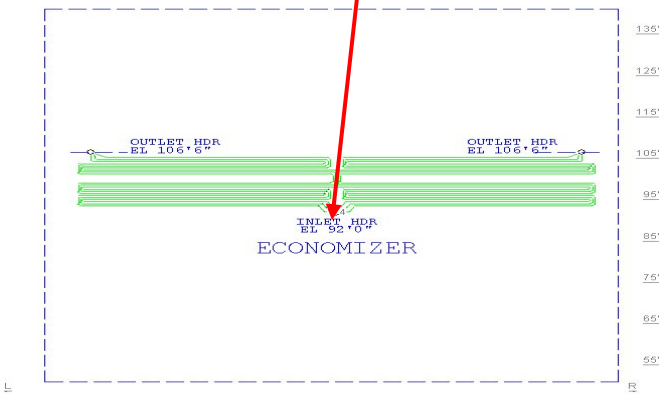
Record: #58
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cogley S.

General location is High Pressure Side, Inlet Header, Partition Wall.

Elevation: 92'





Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 6

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18":

Assembly/Tube(RWT)Intrados/Extrados:
A43/T8(0.222")Ext
A43/T9(0.214")Ext

The shields will abut to the fin and encompass the 90 degree bends. Note: Tubes counted from bottom to top.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #60
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cavote P.

General location is High Pressure Side, Inlet Header, Front.

Elevation: 92'

Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 4

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18":

Assembly/Tube(RWT)Intrados/Extrados:
A1/T4(0.233")Int.

The shields will abut to the fin and encompass the 90 degree bend. Note: Tubes counted from bottom to top.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #63
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is Low Pressure Side, Inlet Header, Front.

Elevation: 92'

Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

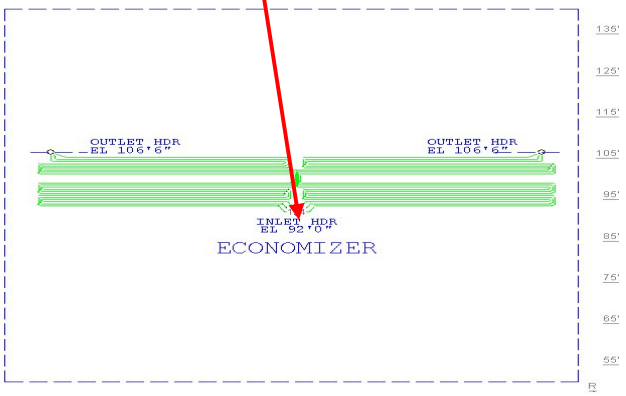
Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 4

Install outer radius shields to the inner most tube of the following assemblies (RWT) above the inlet header:

Upper Right – Assembly/(RWT):
A62/(0.234”)
A82/(0.219”)
A84/(0.229”)

Lower Right- Assembly/(RWT):
A63/(0.229”)



Shields should butt up to the spiral fins to avoid gaps.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #66
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is High Pressure Side, Bank 2 Bottom, Front.

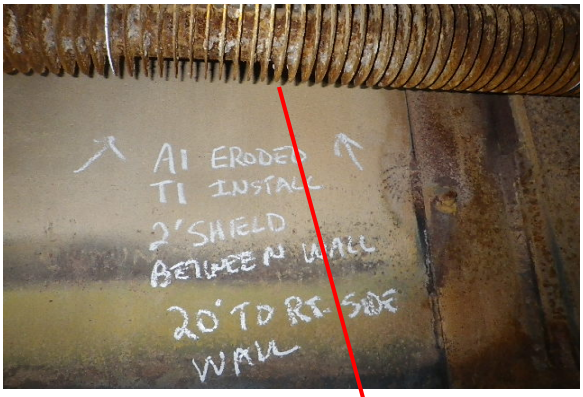
Elevation: 93'

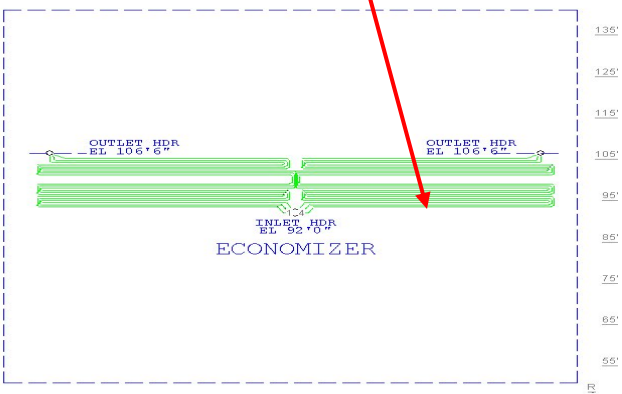
Cause: Erosion (Fly Ash)
Appearance: Erosion Flat

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 6

Install an approximate 2' shield to Tube 1 of Assembly 1 located approximately 20' from the right side wall above the proportioning dampers. The spiral fins are completely eroded away along with some tube material.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #69
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Hubbard T.

General location is High Pressure Side, Bank 2 Top, Left.

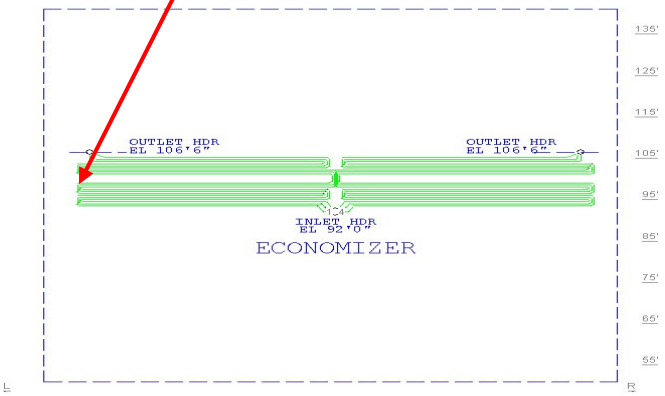
Elevation: 105'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 4

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18" - Assembly/Tube(RWT):



Assembly/Tube(RWT):
A11/T1(0.237")
A13/T1(0.236")
A18/T1(0.237")

The shields will begin at the fin on the horizontal run and extend encompassing the 90 degree bend.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #70
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cogley S.

General location is High Pressure Side, Bank 1 Top, Right.

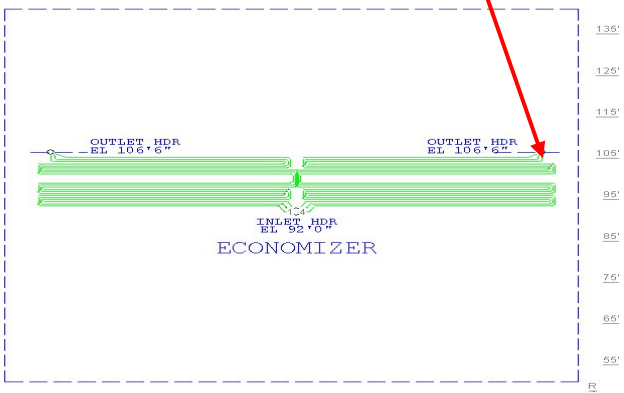
Elevation: 105'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 11

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18" - Assembly/Tube(RWT):



Assembly/Tube(RWT):
A23/T1(0.236")
A24/T1(0.224")
A25/T1(0.226")
A26/T1(0.218")
A29/T1(0.235")
A29/T2(0.230")
A30/T2(0.234")
A40/T1(0.216")
A41/T1(0.226")
A42/T1(0.224")
A43/T1(0.227")
A43/T2(0.224")

The shields will begin at the fin on the horizontal run and extend encompassing the 90 degree bend.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #71
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cavote P.

General location is High Pressure Side, Bank 2 Top, Right.

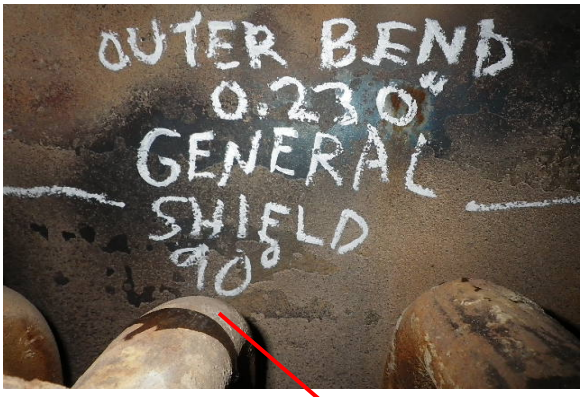
Elevation: 100'

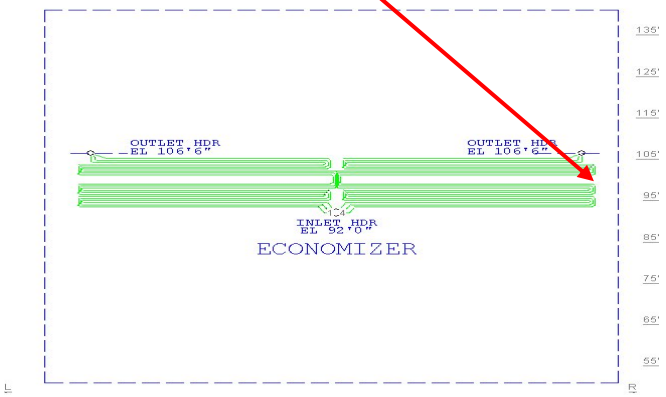
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 4

Install a 90 degree shield on the outer bend of the following Assemblies/Tubes(RWT):





Assembly/Tube(RWT):
A12-19/T1(0.230")
A27/T1(0.236")
A35/T1(0.223")
A36/T1(0.237")
A38/T1(0.233")
A39/T1(0.225")
A40/T2(0.226")
A41/T1(0.230")
A41/T2(0.223")
A42/T1(0.230")
A43/T1(0.221")

The shields will begin at the fin on the horizontal run and extend encompassing the 90 degree bend.

Work Order: _____ Status: Inspected

Record: #81
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cavote P.

General location is Low Pressure Side, Bank 2 Top, Right.

Elevation: 100'

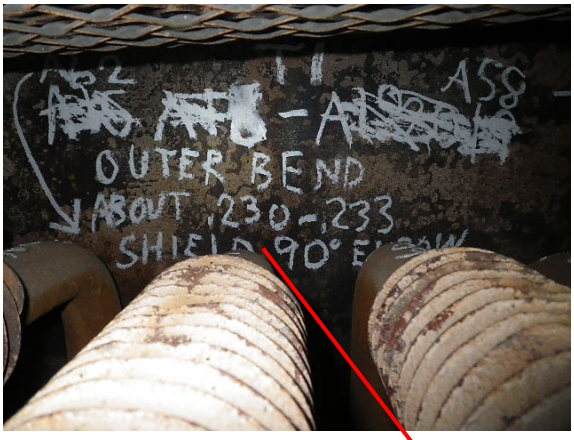
Cause: Erosion (Fly Ash)
Appearance: Eroded

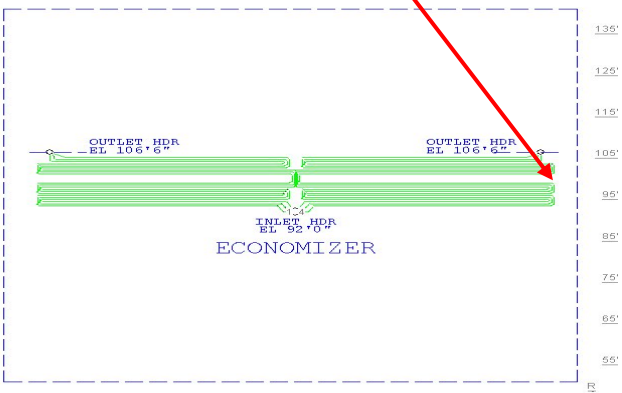
Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 7

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18":

Assembly/Tube(RWT):
A53/T1(0.236")
A54/T1(0.236")
A55/T1(0.217")
A56/T1(0.230")
A58/T1(0.231")
A59/T1(0.233")
A60/T1(0.232")
A61/T1(0.230")
A62/T1(0.232")





The shields will begin at the fin on the horizontal run and extend encompassing the 90 degree bend.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #83
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cavote P.

General location is Low Pressure Side, Bank 2 Top, Left.

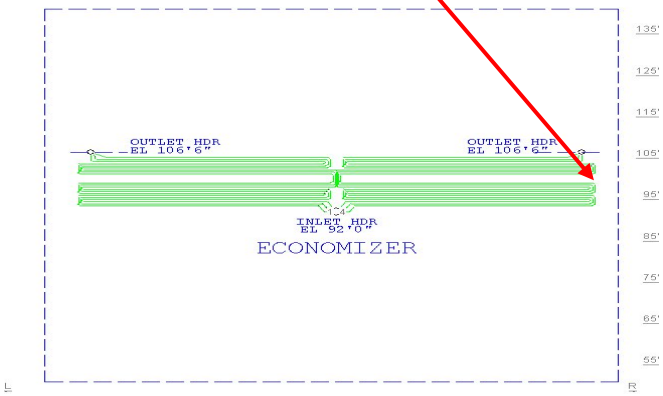
Elevation: 96'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 7

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18" - Assembly/Tube(RWT):



Assembly/Tube(RWT):
A44/T1(0.232”)
A74/T1(0.226")
A75/T1(0.230")
A76/T1(0.232")
A77/T1(0.231")
A79/T1(0.236")
A80/T1(0.233")
A81/T1(0.214")
A82/T1(0.224")
A83/T1(0.232")
A84/T1(0.219")
A85/T1(0.215")
A86/T1(0.235")

The shields will begin at the fin on the horizontal run and extend encompassing the 90 degree bend.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #84
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Cogley S.

General location is Low Pressure Side, Bank 1 Top, Right.

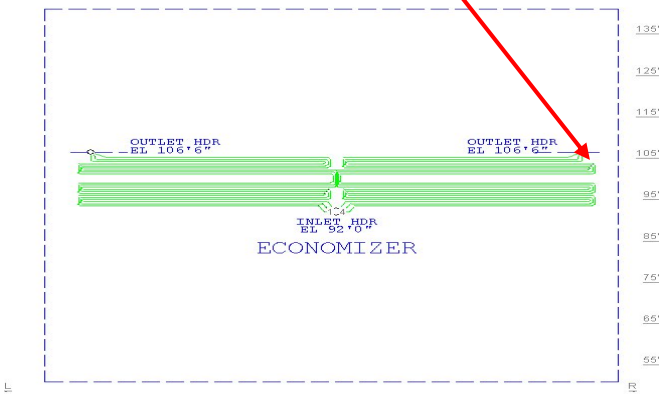
Elevation: 105'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 6

Due to a remaining wall thickness between 76% to 85% of MWT, the following are recommended for shield repair for a length of 18" - Assembly/Tube(RWT):



Assembly/Tube(RWT):
A47/T1(0.236")
A53/T1(0.228")
A86/T1(0.230")
A86/T2(0.231")

The shields will begin at the fin on the horizontal run and extend encompassing the 90 degree bend.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #85
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is High Pressure Side, Bank 1 Top, Rear.

Elevation: 106'

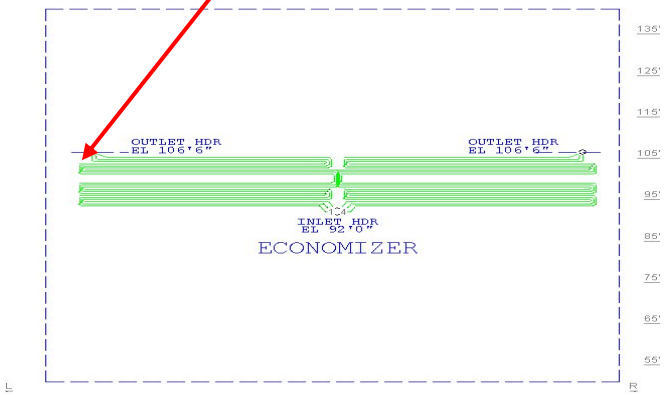
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .220

The Final Risk Index Number is 7

Replace the eroded through shield located at Tube 1 of Assembly 86 at the tubes connection at the rear end of the outlet header.



Work Order: _____ Status: Inspected

Record: #86
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Brown M.

General location is High Pressure Side, Outlet Header, Left.

Elevation: 106'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The UT Data is .218

The Final Risk Index Number is 7

Install 1.5' shields to the following Assemblies/Tubes(RWT) at the outlet header due to fly ash erosion:

Assembly/Tube(RWT):
A79/1-2(N/A)
A80/1-2(0.218")
A81/1(N/A).

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #88
Action: WELD REPAIR-P3
Priority #: 3

Inspector: Cavote P.

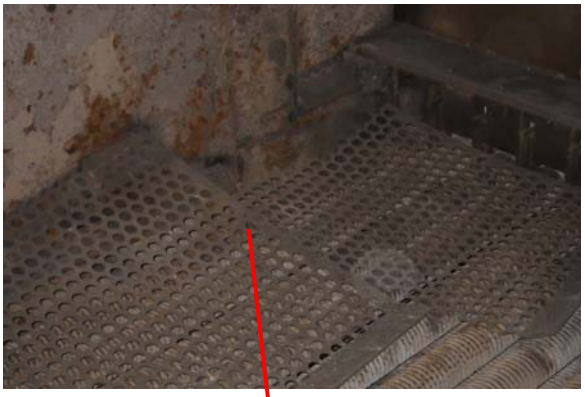
General location is Low Pressure Side, Bank 1 Top, Center.

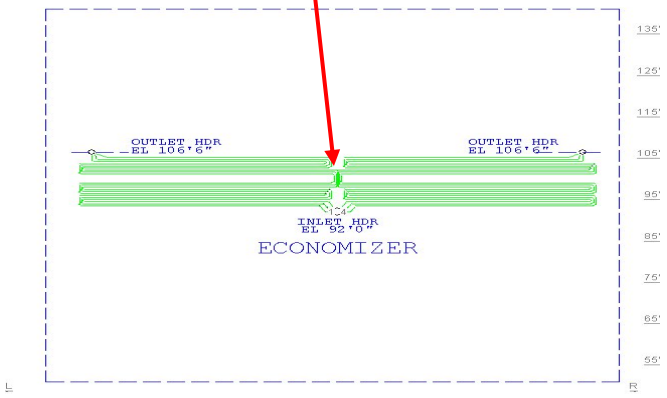
Elevation: 105'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Broken

The Final Risk Index Number is 2

Reattach the perforated plate baffles at the partition wall.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #72
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Hubbard T.

General location is High Pressure Side, Bank 2 Top, Left.

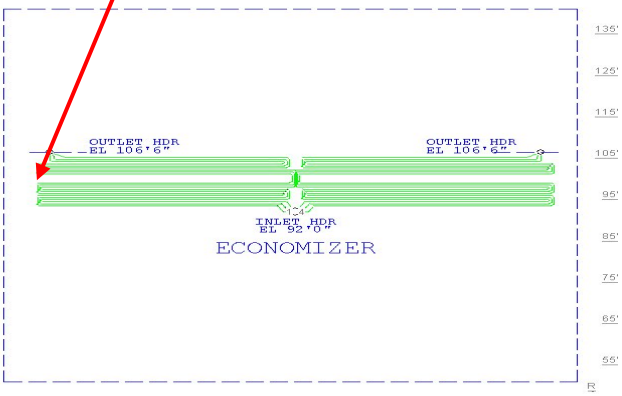
Elevation: 100'

Cause: Fatigue (Stress)
Appearance: Detached

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 4

In the economizer between banks 1 and 2 assemblies 8, 9, and 10 have broken loose from their hangers and dropped down. They need to be pulled up and re-attached to hanger.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #51
Action: BAFFLE REPLACEMENT-P3
Priority #: 3

Inspector: Brown M.

General location is High Pressure Side, Bank 1 Top, Left.

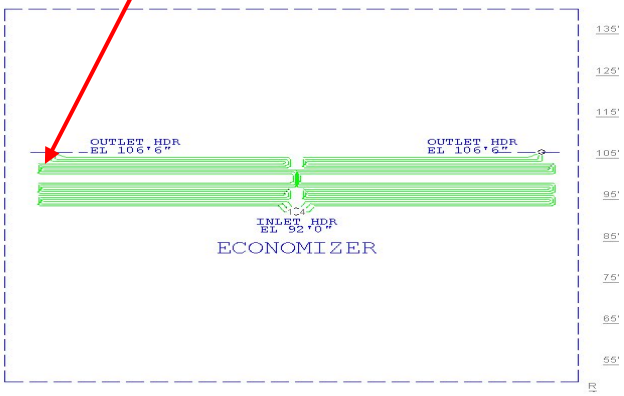
Elevation: 105'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 7

Replace the rear most section of expanded metal baffle at the junction of the left side and partition wall between the outlet header. This area is experiencing aggressive erosion.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #62
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Cavote P.

General location is Economizer, Inlet Header.

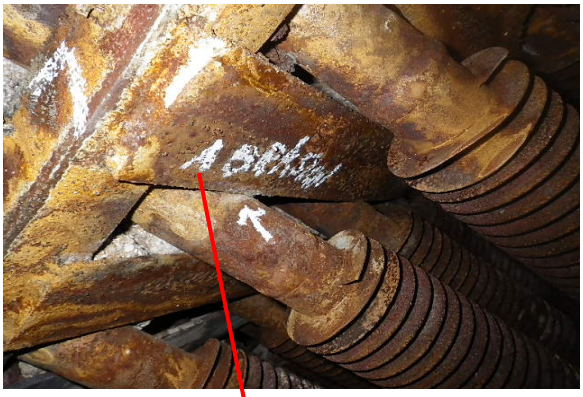
Elevation: 92'

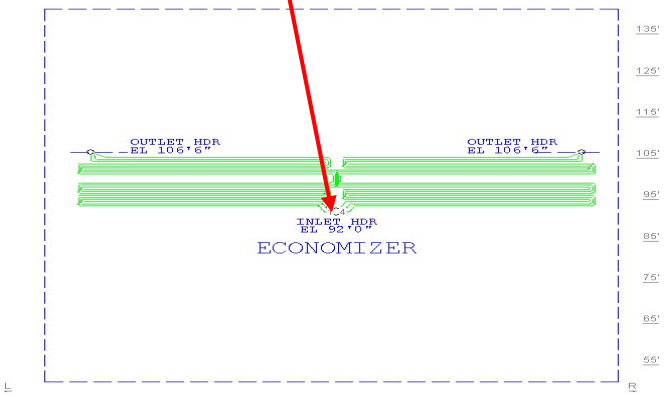
Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 1

Monitor closely abrasion observed on un-finned portions of finned economizer tubes before reaching the tube elbows. Alignment/support plate abrading tubes.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #53
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Brown M.

General location is High Pressure Side, Bank 1 Top, Left.

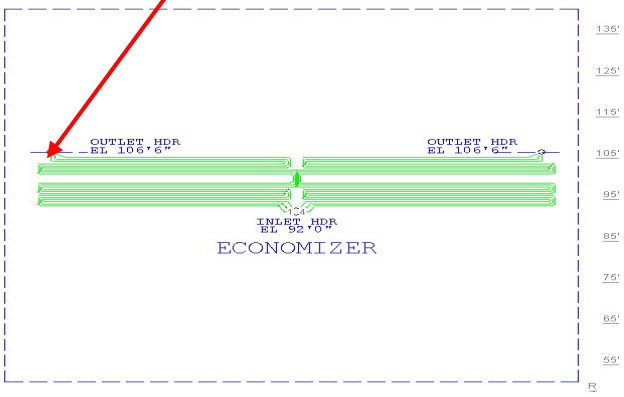
Elevation: 105'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 7

Inspections at the left side wall were restricted by the RH Inlet header scaffolding. It is recommended that this area be inspected after the scaffolding is removed and before the unit is returned to service.



Work Order: _____ Status: Inspected

Inspection Report

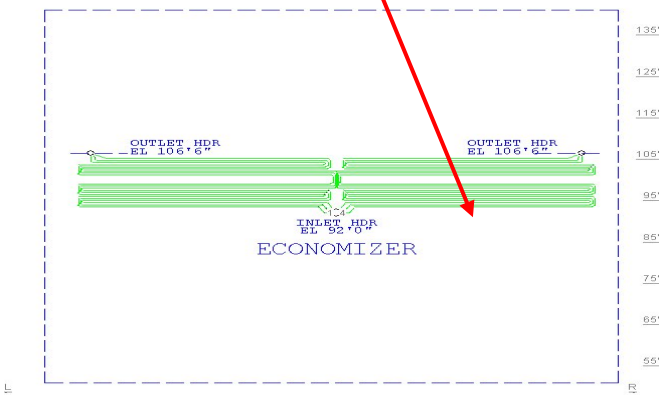
Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #65
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Cavote P.

General location is High Pressure Side, Bank 2 Bottom, Right.

Elevation: 93'



Cause: Thermal Fatigue
Appearance: Out of Alignment

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 3

Above the proportioning dampers, approx. 20' from right wall, at 2nd to last support structure from the right end, finned tubes are improperly bearing onto the support structure in a manner that may be causing abrasion between tube fins. The flat bearing plate is missing or broken at assemblies A10, A12, & A22 causing these assemblies to be dropped down with tubes bearing directly onto the edge of the supporting plate. Further research required to determine the actual condition of these tubes.

After all tubes in question are either determined to be satisfactory or are properly repaired, raise them up into their proper positions and reinstall the proper flat plate under the fins for proper bearing support.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #74
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Cavote P.

General location is High Pressure Side, Bank 2 Top, Right.

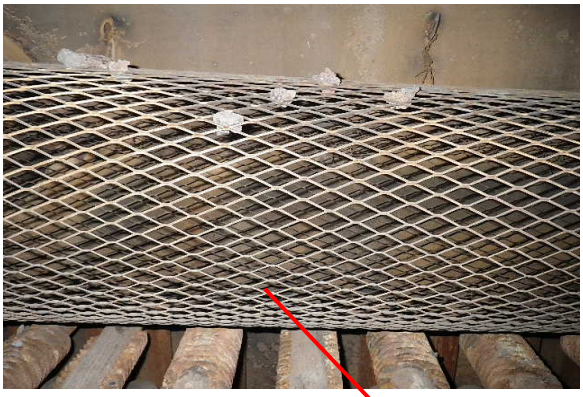
Elevation: 100'

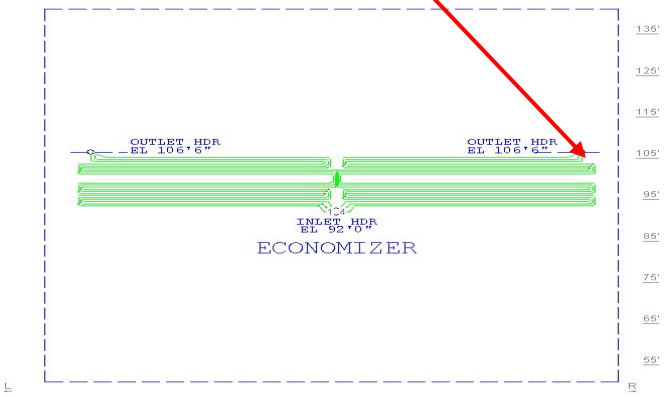
Appearance: Limited or No Access

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 7

Inspection limited on tube 1 of assemblies 1-10 due to expanded metal baffle. It is recommended that baffle be removed to provide access for inspection.





Work Order: _____ Status: Not Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #76
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Cavote P.

General location is Low Pressure Side, Bank 2 Top, Right.

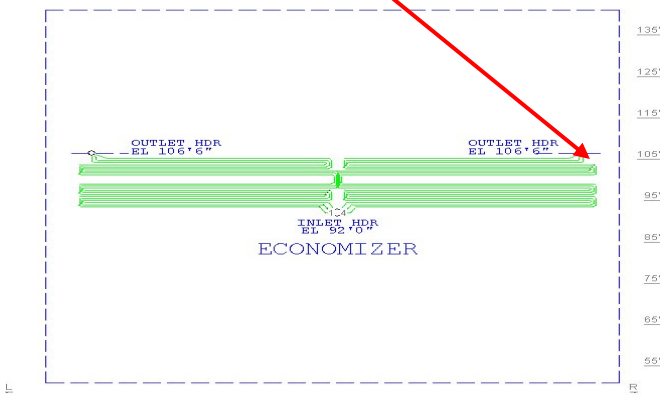
Elevation: 100'

Appearance: Limited or No Access

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 7

Unable to inspect Tube 1 of Assemblies A44 through A49 unable due to expanded metal baffles at the wall corner. Further inspection needed once baffle is removed to check RWT on outer elbows at T1.



Work Order: _____ Status: Not Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 3-Economizer

Record: #78
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Cavote P.

General location is Low Pressure Side, Bank 2 Top, Partition Wall.

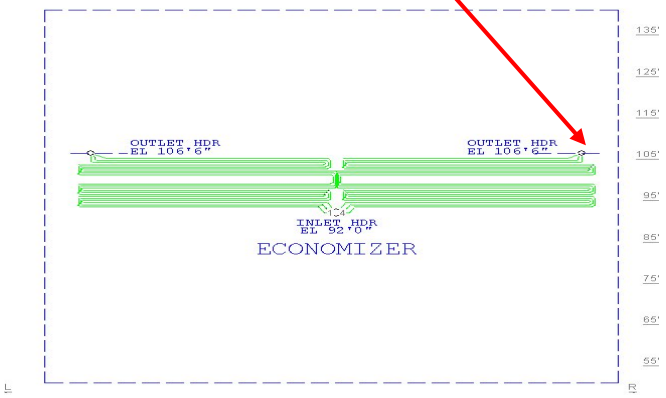
Elevation: 100'

Cause: Undetermined
Appearance: Out of Alignment

Material: 2.0" OD x .279" MWT x SA-210A1

The Final Risk Index Number is 2

Reposition and secure the access door securely on the partition wall.



Work Order: _____ Status: Inspected

AREA: Platen Superheater

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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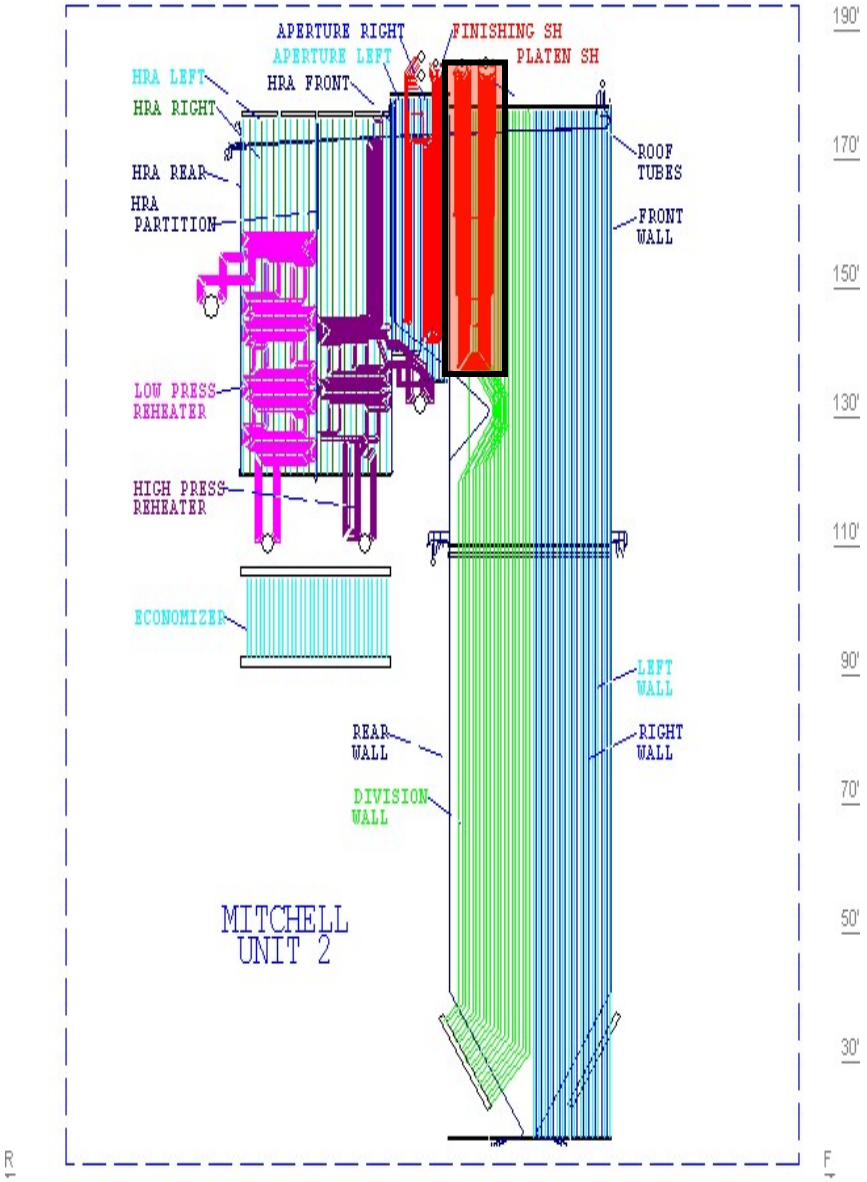

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

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P R I O R I T Y # 1 R E P A I R S

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Record: #91
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Cogley S.

General location is Rear Water Wall Hangers, Trailing Side, Slope.

Elevation: 138'

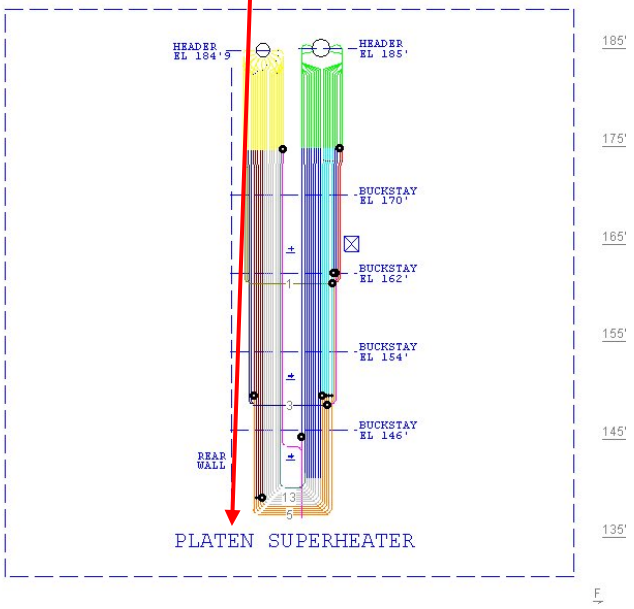
Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 1.625" OD x .396" MWT x SA-213T22

The Final Risk Index Number is 20

The RWWH tubes are eroded at the slope penetration. Obtainable UTs were taken on ***tubes 49 and 50 of 0.217" and 0.222" respectively, putting them in replacement criteria.***

It is recommended that all hanger tubes have refractory removed, be assessed and repair as needed. Note: If replacement is not an option, pad weld would be the recommended repair.



If the tube is load bearing (hanger tube), temporarily support the tube before replacement is made. Verify replacement material before removing old tube section.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

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P R I O R I T Y # 2 R E P A I R S

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Record: #89
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is Platen Superheater, Trailing Side.

Elevation: 140'

Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

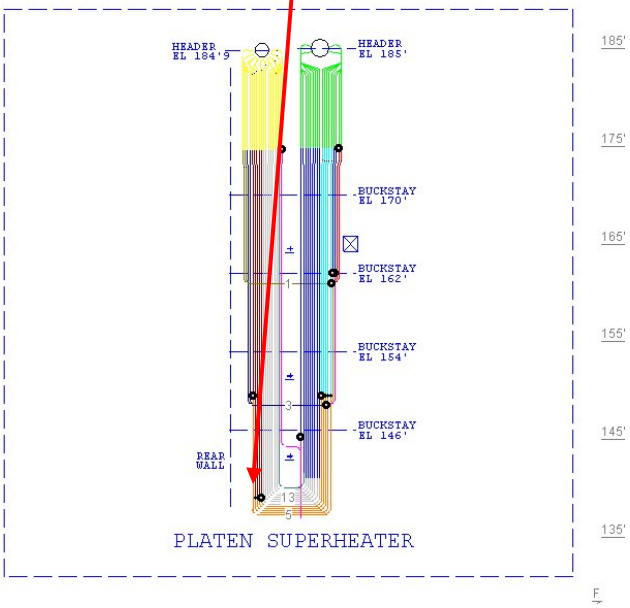
Material: 2.125" OD x .320" MWT x SA-213TP321H

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:
Assembly/Front-Rear Tube(RWT)PW Length:

Assembly/Front-Rear Tube(RWT)PW Length:
A10/R-T5(0.237)24"
A13/R-T5(0.231")6"

The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #90
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Hubbard T.

General location is Platen Superheater, Wrapper Tube.

Elevation: 148'

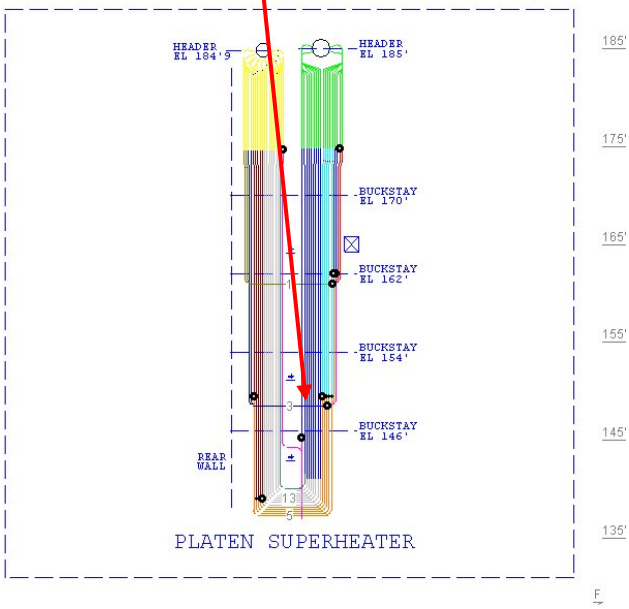
Cause: Erosion (Soot Blower)
Appearance: Eroded

Material: 2.25" OD x .540" MWT x SA-213T22

The Final Risk Index Number is 14

The wrapper tube has severe soot blower erosion on following assemblies/tubes:

Assemblies/Tubes:
A17-T3,T4
A18-T4
A19-T4
A20-T4
A23-T4



This area is too rough for accurate UT but depth is estimated over 0.125" up to 0.187" deep. With other pad welds in this area it is recommended to restore these areas to MWT.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #96
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Hubbard T.

General location is Platen Superheater, Front Panel, Center.

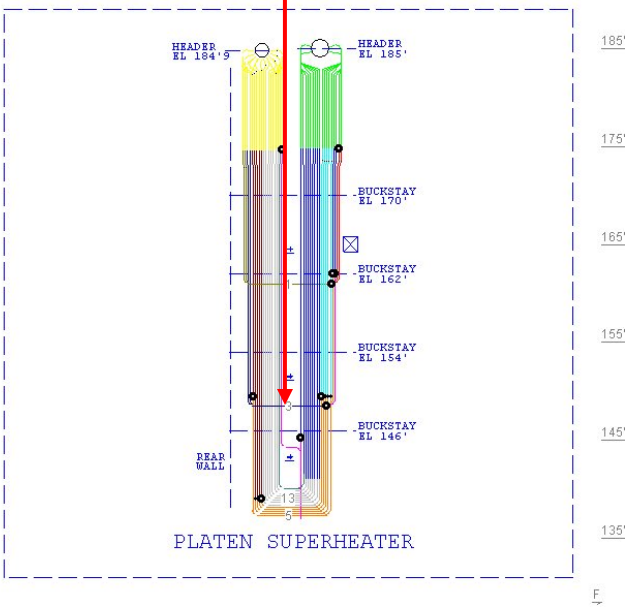
Elevation: 164'

Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

Material: 2.5" OD x .628" MWT x SA-213T22

The Final Risk Index Number is 13

Tube 15 of assembly 15 on the front half of platen center, has severe erosion on an existing pad weld. Surface finish makes UT inaccurate but visually tube is dished out and in need of ***pad weld restoration in a 3" x 14"*** area as marked with white grease marker.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #99
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cavote P.

General location is Platen Superheater, Trailing Side.

Elevation: 146'

Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

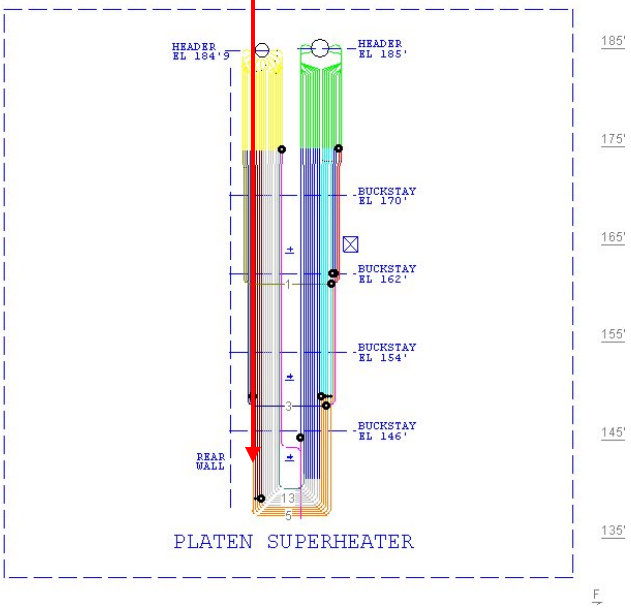
Material: 2.125" OD x .320" MWT x SA-213TP321H

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:
Assembly/Front-Rear Tube(RWT)PW Length:

Assembly/Front-Rear Tube(RWT)PW Length:
A2/R-T5(0.225")4"
A4/R-T5(0.214")6"
A8/R-T3(0.238")6"
A14/R-T5(0.218")14"

The pad weld will encompass the area of wall loss which has been denoted on tubing by a white box.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #103
Action: WELD REPAIR-P2
Priority #: 2

Inspector: Brown M.

General location is Platen Superheater, Wrapper Tube, Center.

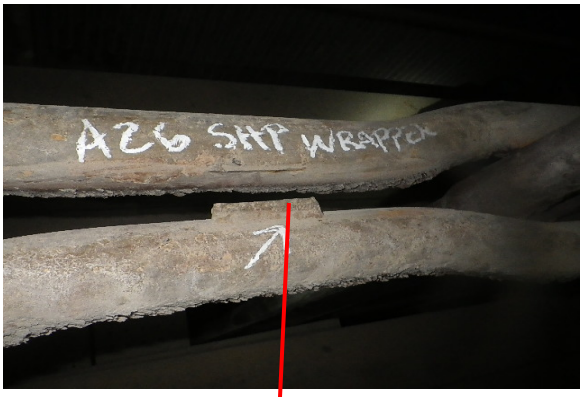
Elevation: 148'

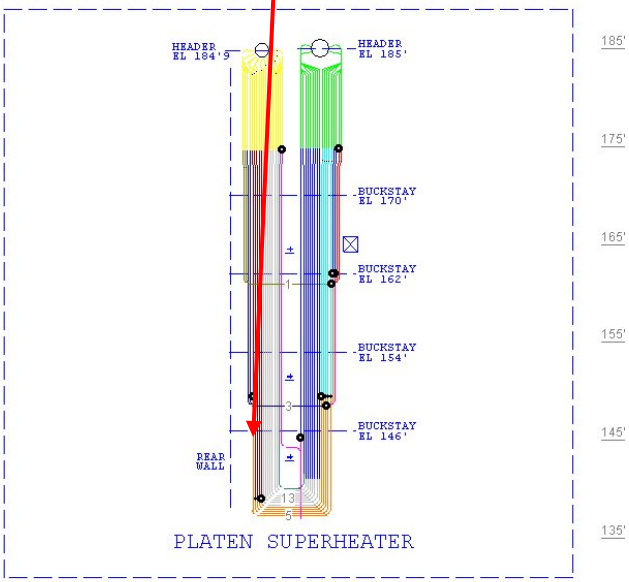
Cause: Fatigue (Thermal/ Vibration)
Appearance: Broken

Material: 2.25" OD x .540" MWT x SA-213T22

The Final Risk Index Number is 8

Weld repair the broken wrapper tube attachment located in the center of Assembly 26.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #104
Action: BLOWER LANCE RE-ALIGNMENT-P2
Priority #: 2

Inspector: Brown M.

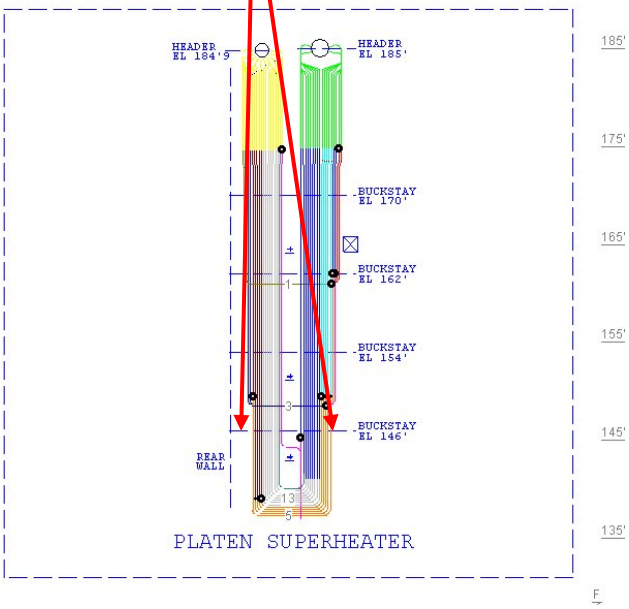
General location is Platen Superheater, Side Walls.

Elevation: 143'

Appearance: Abraded

The Final Risk Index Number is 9

The blower sleeves of IK-1 and 2 at the lower leading side of the Platen appear abraded from the blower lance and/or pre-blowing of the system. Check alignment of the lances and correct as necessary and install new wall sleeves.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #94
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2

Inspector: Cogley S.

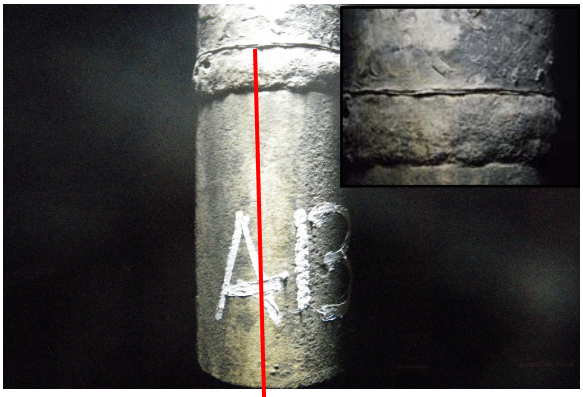
General location is Platen Superheater, DMW

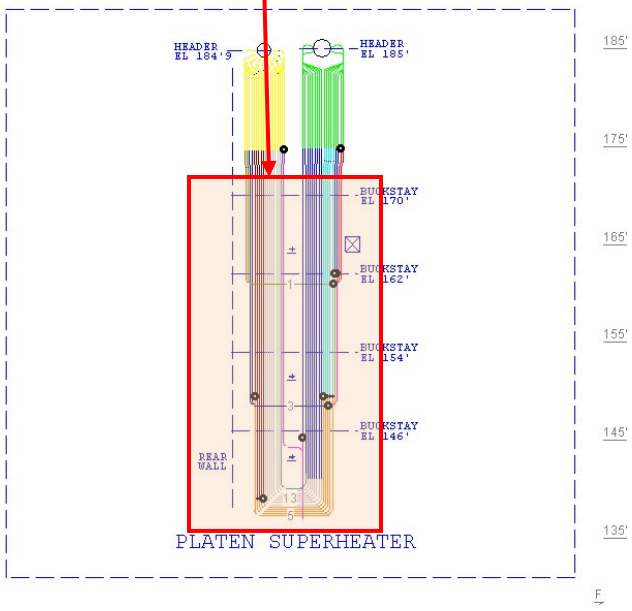
Elevation: 148'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Linear Indication

The Final Risk Index Number is 15

The DMWs are beginning to show signs of fatigue and possible end of life. It is recommended that further NDE testing (X-Ray, LPA) be completed to determine the severity of the fatigue and remaining life.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

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P R I O R I T Y # 3 R E P A I R S

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Record: #93
Action: SHIELD INSTALLATION-P3
Priority #: 3

Inspector: Hubbard T.

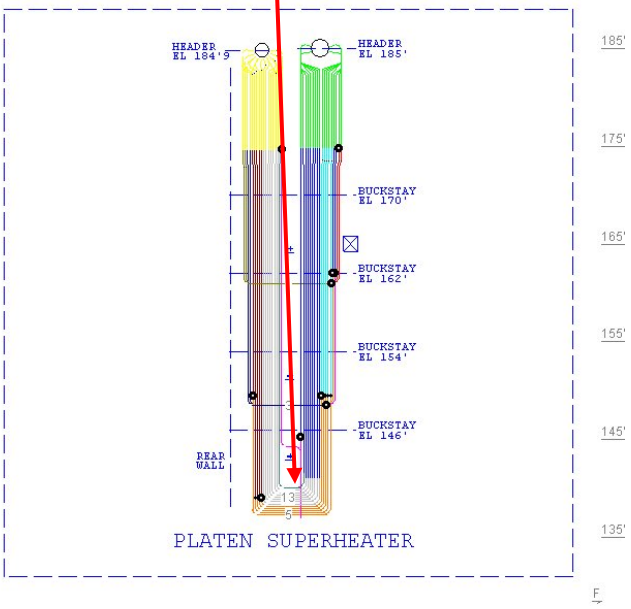
General location is Platen Superheater, Front Panel, Center.

Elevation: 138'

Cause: Overheat (Long Term)
Appearance: Deteriorated

Material: 2.5" OD x .336" MWT x SA-213T2

The shields on Assembly 17 T17 on the horizontal and vertical sections of tube are distorted and disengaged due to long-term overheat. It is recommended that these shields be replaced.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #100
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cogley S.

General location is Platen Superheater, Trailing Side.

Elevation: 148'

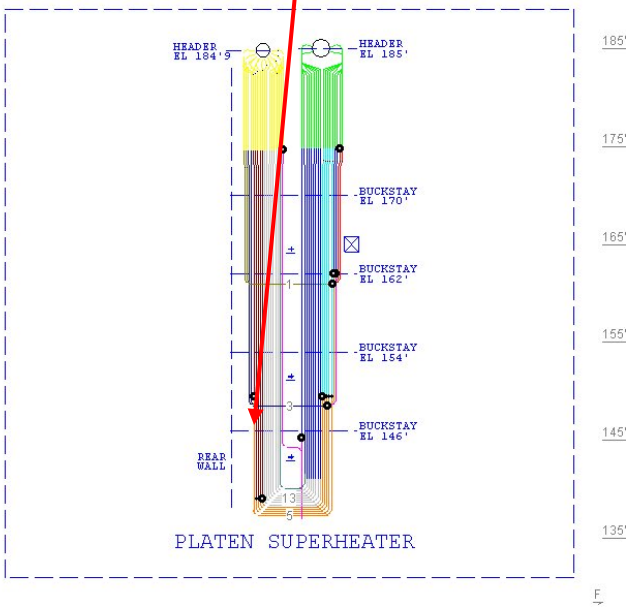
Cause: Fatigue (Thermal)
Appearance: Bowed Tubing

Material: 2.125" OD x .320" MWT x SA-213TP321H

The Final Risk Index Number is 4

Realign and reattach the following assemblies/tubes - Assembly/Tube:

Assembly/Tube:
A1/T5
A5/T5
A11/T5
A12/T5
A13/T5
A14/T5
A15/T5
A16/T5
A26/T5



Work Order: _____ Status: Inspected

Record: #92
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Cogley S.

General location is Platen Superheater, Trailing Side.

Elevation: 140'

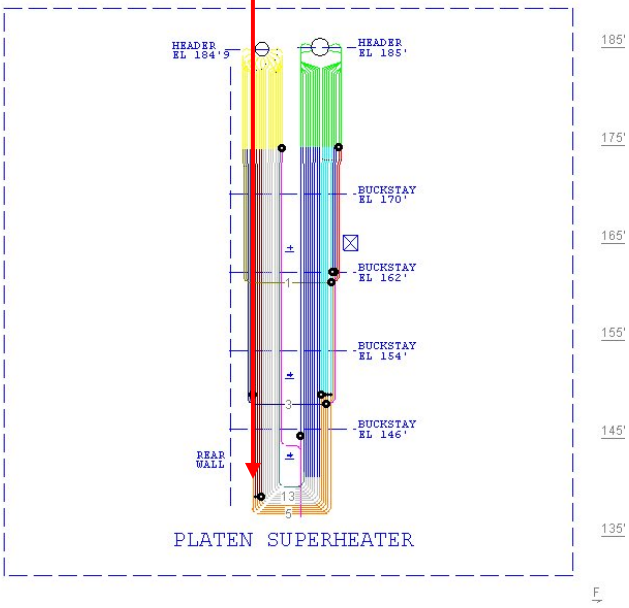
Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

Material: 2.125" OD x .320" MWT x SA-213TP321H

The Final Risk Index Number is 9

Due to a remaining wall thickness between 76% to 85% of MWT, monitor the following tubes/assemblies during future outages - Assembly/Front-Rear Tube(RWT):

Assembly/Front-Rear Tube(RWT):
A1/R-T5(0.245)
A3/R-T5(0.260)
A7/R-T5(.265)
A8/R-T5(.252)
A9/R-T5(.252)
A16/R-T5(0.263")
A16/R-T6(0.258")
A19/R-T5(0.270)



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #97
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Hubbard T.

General location is Platen Superheater, Front Panel, Center.

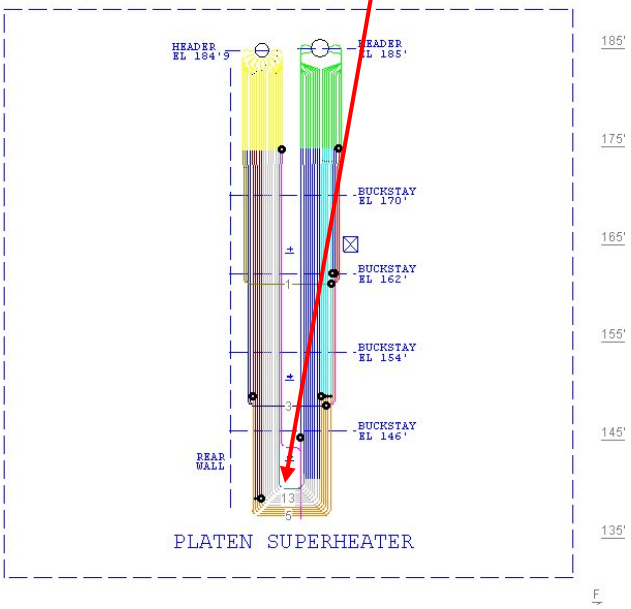
Elevation: 140'

Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

Material: 2.5" OD x .552" MWT x SA-213T22

The Final Risk Index Number is 2

Monitor tube 16 of assembly 17 during future outages. Tube 16 is not in shield criteria however erosion is apparent.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #101
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Cavote P.

General location is Platen Superheater, Trailing Side.

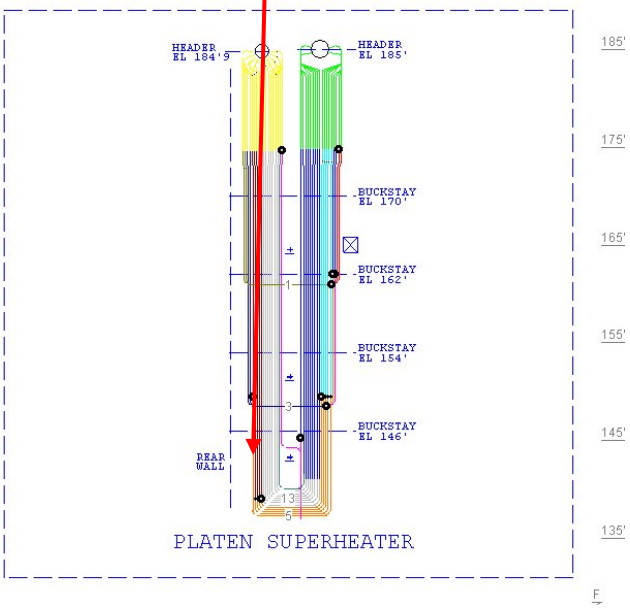
Elevation: 146'

Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

Material: 2.125" OD x .320" MWT x SA-213TP321H

The Final Risk Index Number is 6

Due to a remaining wall thickness between 76% to 85% of MWT, monitor the following tubes/assemblies during future outages:
Assembly/Front –Rear Tube(RWT):



Assembly/Front –Rear Tube(RWT):
A4/R-T5(0.245")
A5/R-T5(0.251")
A6/R-T5(0.248")
A7/R-T3(0.264”)
A9/R-T3(0.264”)
A20/R-T5(0.245”)
A21/R-T5(0.250")
A22/R-T5(0.242")

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #102
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Brown M.

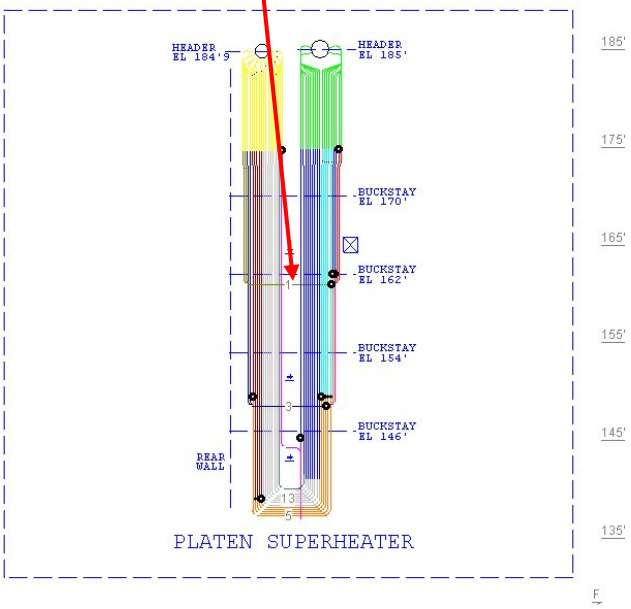
General location is Platen Superheater, Wrapper Tube.

Elevation: 161'

Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

The Final Risk Index Number is 3

Light abrasion could be found in several locations throughout the platens where tubes are in contact with the upper wrapper. Assembly 3, Tubes 3&4F are typical of the more severe; however the tubes appear to be above any repair criteria.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #106
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Brown M.

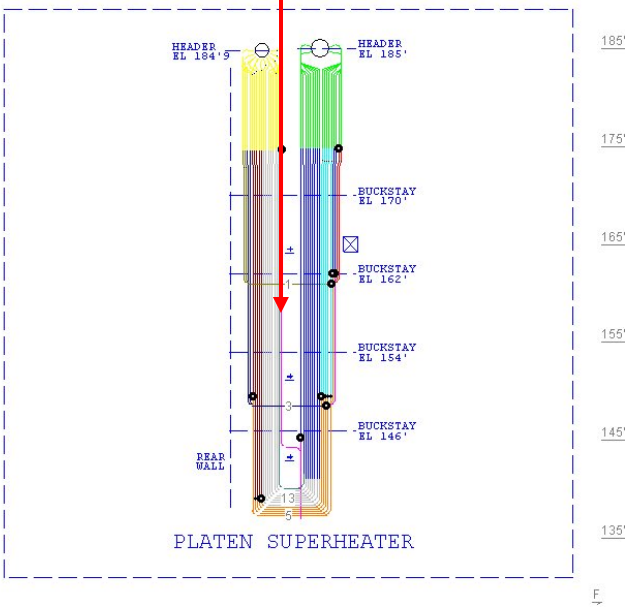
General location is Platen Superheater, Rear Panel, Center.

Cause: Erosion (Soot Blower)
Appearance: Flat on Tube

Material: 2.0" OD x .495" MWT x SA-213T22

The Final Risk Index Number is 22

Wrapper tube 1 on assemblies A19 and A20 have soot blower erosion flats between the pendants. It is not in pad weld criteria but it is only occurring here at these two locations and needs to be monitored during future outages.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #98
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Cogley S.

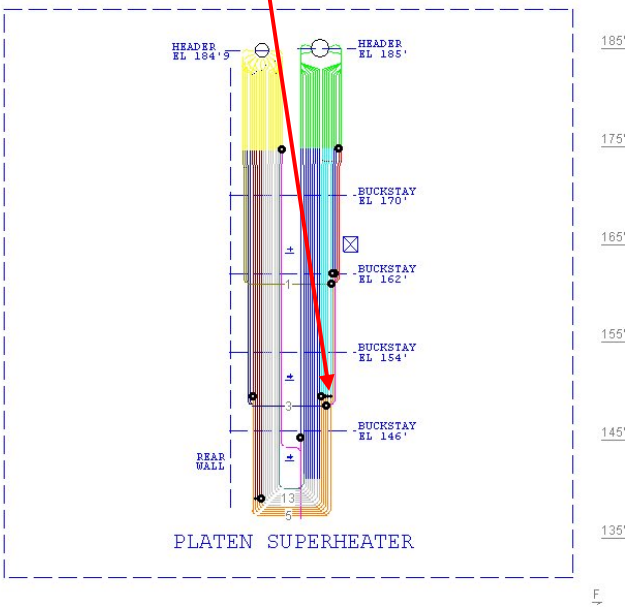
General location is Platen Superheater, Leading Edge.

Elevation: 148'

Cause: Work Quality (Welding Flaws)
Appearance: Weld Undercut

The Final Risk Index Number is 9

Upon inspection of the DMWs, Tube 1-Front of Assembly 16 appears to have been undercut during application. It is recommended that further NDE testing (X-Ray, LPA) be completed to determine the integrity of the weld.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 4-Platen Superheater

Record: #95
Action: PLAN FOR FUTURE REPLACEMENT-P3
Priority #: 3

Inspector: Cogley S.

General location is Platen Superheater.

Elevation: 148'

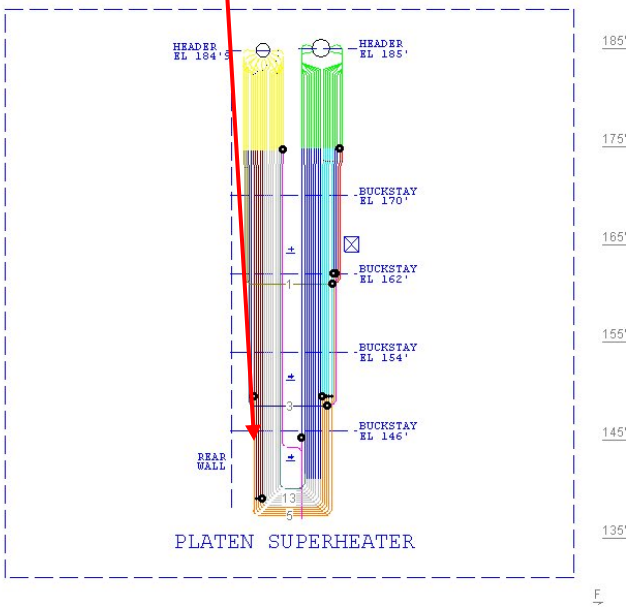
Cause: Fatigue (Thermal/ Vibration)
Appearance: Bowed Tubing

Material: 2.5" OD x .628" MWT x SA-213T22

The Final Risk Index Number is 4

Plan for future replacement of the following assemblies/tube/length due to excessive bowing equal to or greater than 1 tube diameter -

Assemblies/Tube/Length:
A13/T14/14'



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

AREA: Finishing Superheat Inlet

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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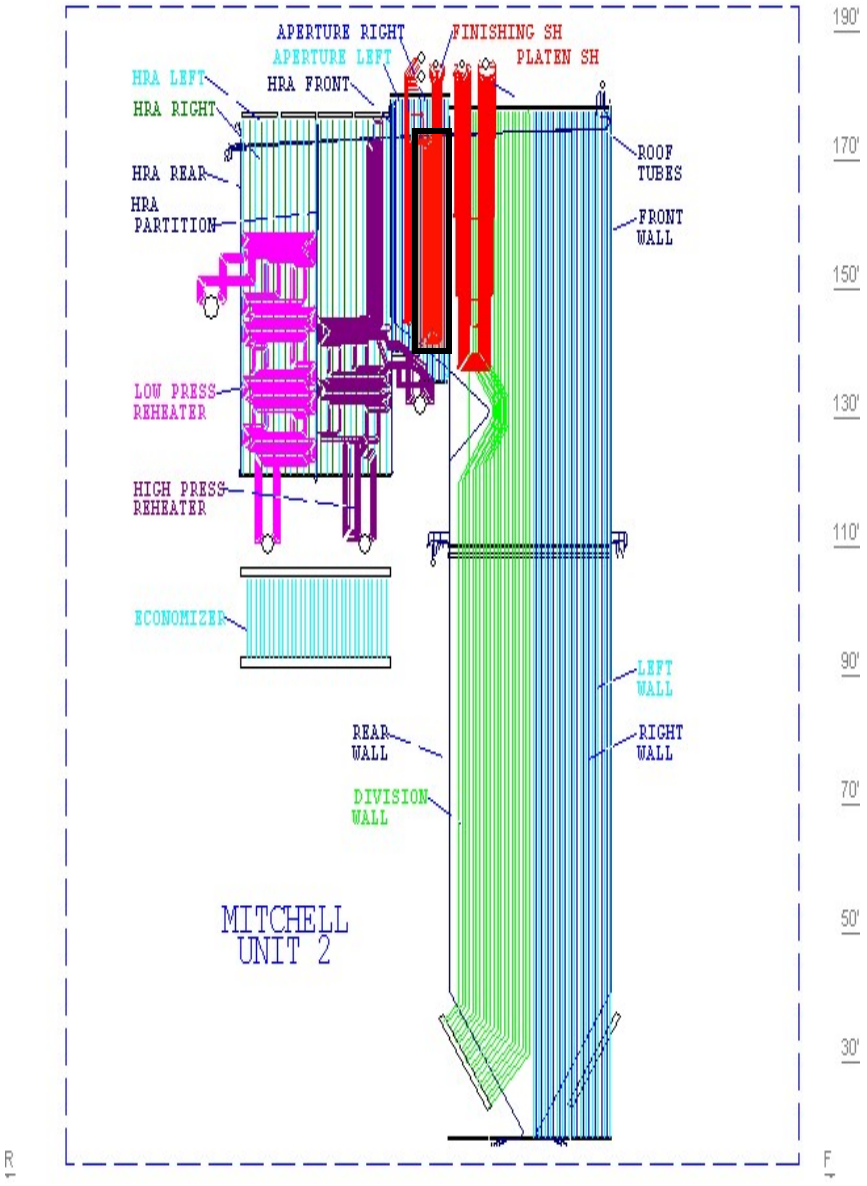

Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

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P R I O R I T Y # 1 R E P A I R S

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Record: #105
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Hubbard T.

General location is Finishing Superheat Inlet, Leading Edge, Bottom.

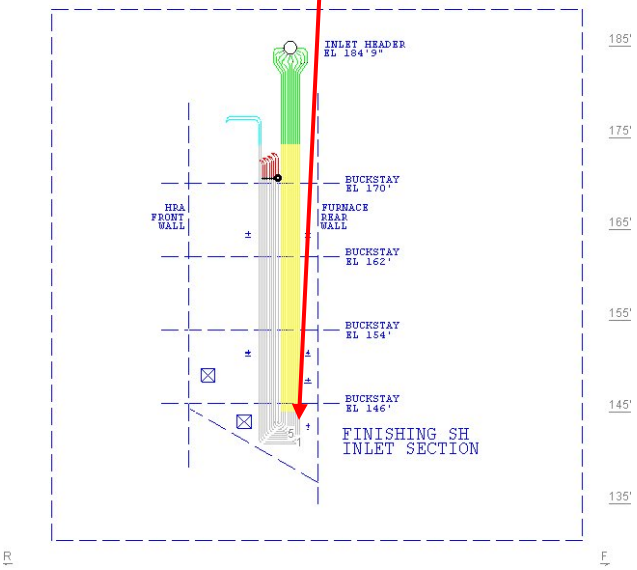
Elevation: 143'

Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

Material: 2.25" OD x .611" MWT x SA-213T22

The Final Risk Index Number is 20

Due to a RWT at or less than 65% of MWT, the following are recommended for replacement for a length of 3' on the verticals and 2' on the horizontal legs:
Assembly/Tube(RWT):



Assembly/Tube(RWT):
A27/T2(0.361")
A30/T1(0.380")
A30/T2(0.231")
A30/T3(No UT)
A30/T4(0.254")
A31/T1(0.266")
A32/T2(0.334")
A32/T3(0.327")

Cut lines will extend up 3' and horizontal 2' for a total length of 5' encompassing the bend.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

Record: #108
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Brown M.

General location is Finishing Superheat Inlet, Leading Edge, Lower.

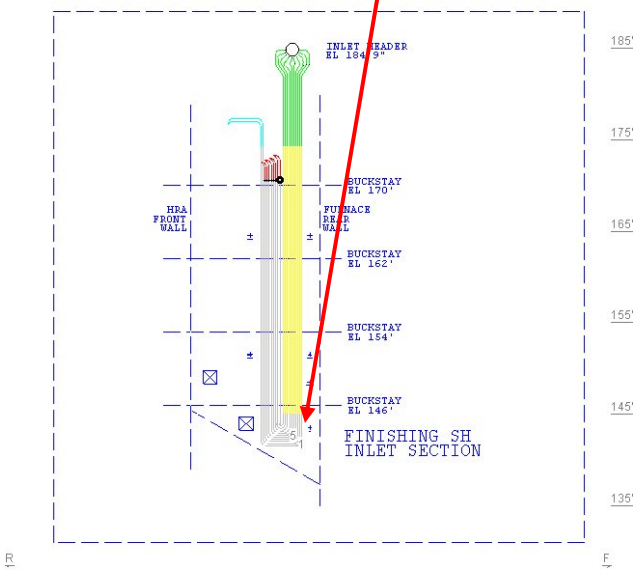
Elevation: 143'

Cause: Soot Blower
Appearance: Quench Cracked Tube

Material: 2.25" OD x .611" MWT x SA-213T22

The Final Risk Index Number is 20

Replace an approximate 5' section of Tube 1, Assembly 56 on the lower leading edge due to apparent quenching from IK-7/8. This tube is also experiencing erosion from the soot blower. Cut-lines are marked on the tube and will involve the lower bend.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

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P R I O R I T Y # 2 R E P A I R S

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Record: #110
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is Finishing Superheat Inlet, Leading Edge, Lower.

Elevation: 143'

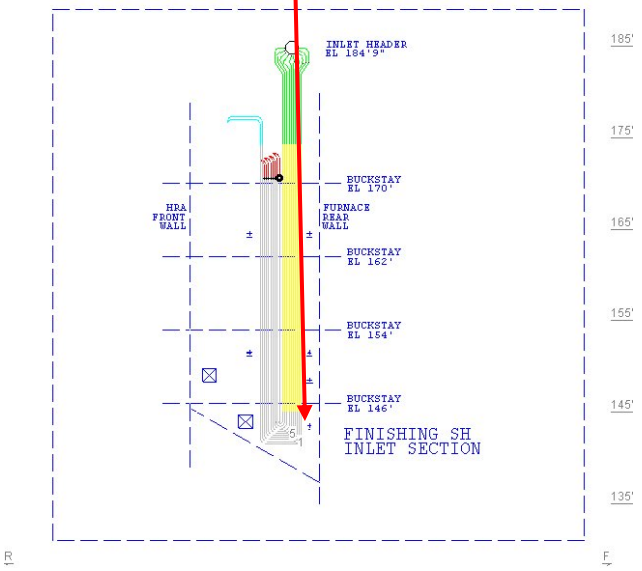
Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

Material: 2.25" OD x .611" MWT x SA-213T22

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair:
Assembly/Front-Rear Tube(RWT)PW Length:

Assembly/Front-Rear Tube(RWT)PW Length:
A7/F-T3(0.457")18"
A23/F-T1(0.444")12"
A24/F-T1(0.422")12"
A25/F-T1(0.414")14"
A25/F-T3(0.498")14"
A26/F-T2(0.461")16"



The pad weld will encompass the area of wall loss which has been denoted on tubing by white box.

Use vertical stringers and feather (taper) by grinding all four of the edges at top, bottom, right and left orientations. Do not horizontal weave pad weld.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

Record: #107
Action: ALIGN AND ATTACH-P2
Priority #: 2

Inspector: Brown M.

General location is Finishing Superheat Inlet, Lower Slope.

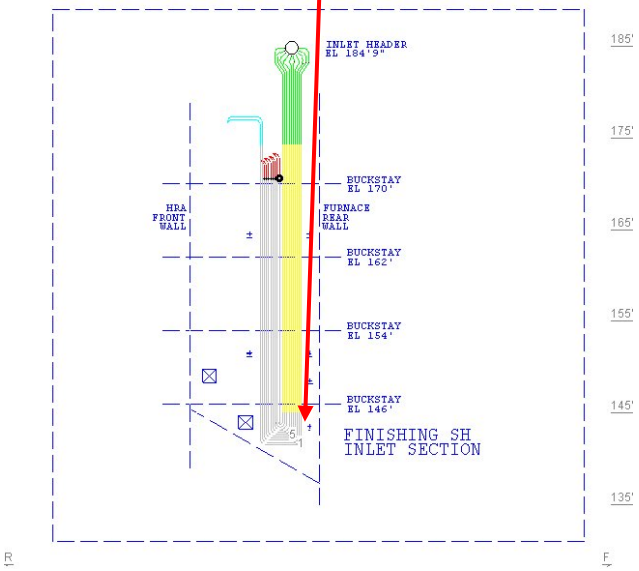
Elevation: 140'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Misaligned

Material: 2.25" OD x .611" MWT x SA-213T22

The Final Risk Index Number is 7

The greater majority of pendants have varying degrees of misalignment by as much as one tube diameter in the lower sections. Broken and deteriorated slip spacers and handcuffs are contributing to this condition.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

Record: #112
Action: BLOWER HEAD REPLACEMENT-P2
Priority #: 2

Inspector: Cogley S.

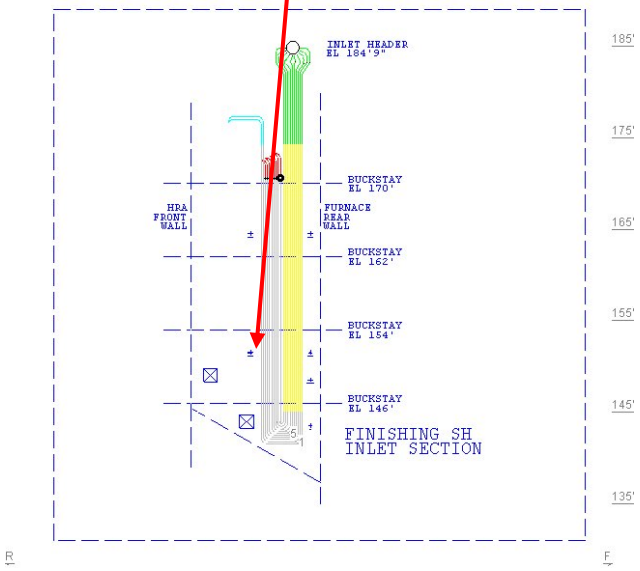
General location is Finishing Superheat Inlet, Left Side Wall, IK-13.

Elevation: 151'

Appearance: Missing

The Final Risk Index Number is 11

Replace missing blower head on IK-13 between the Finishing Superheater Pendants.



Work Order: _____ Status: Inspected

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Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

Record: #114
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2

Inspector: Brown M.

General location is Finishing Superheat Inlet, Leading Edge, Lower.

Elevation: 143'

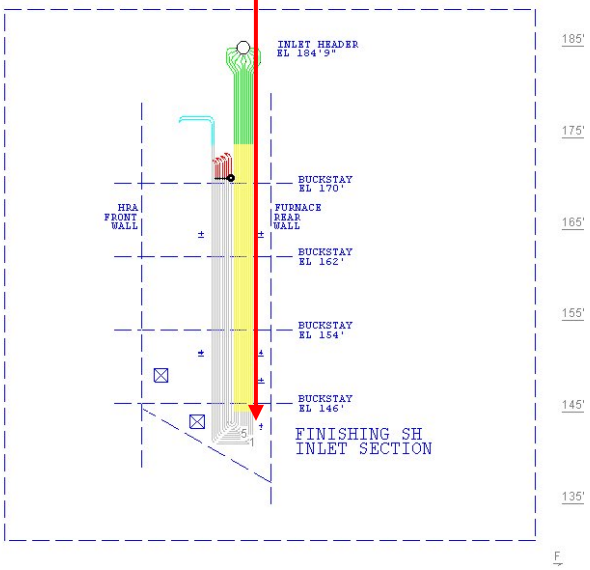
Cause: Erosion (Soot Blower)
Appearance: Eroded

Material: 2.25" OD x .611" MWT x SA-213T22

The Final Risk Index Number is 12

Heavy soot blower erosion is occurring throughout the IK-7/8 path impacting mostly Tubes 1-5. Wall loss on the order of 1/8" and greater is present on some tubes. As numerous and multiple weld repairs have been conducted, it is recommended that this area be closely monitored.

It is recommended that the blowers are evaluated for proper maintenance, operation and a plan established to address probable future tube replacements.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 5-Finishing Superheat Inlet

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P R I O R I T Y # 3 R E P A I R S

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Record: #109
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Cogley S.

General location is Finishing Superheat Inlet, Leading Edge, Lower.

Elevation: 143'

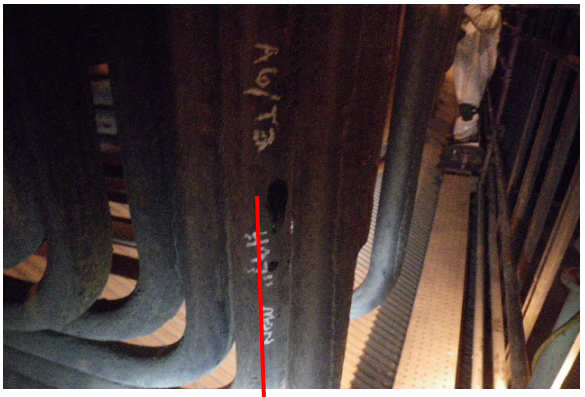
Cause: Erosion (Soot Blower)
Appearance: Eroded

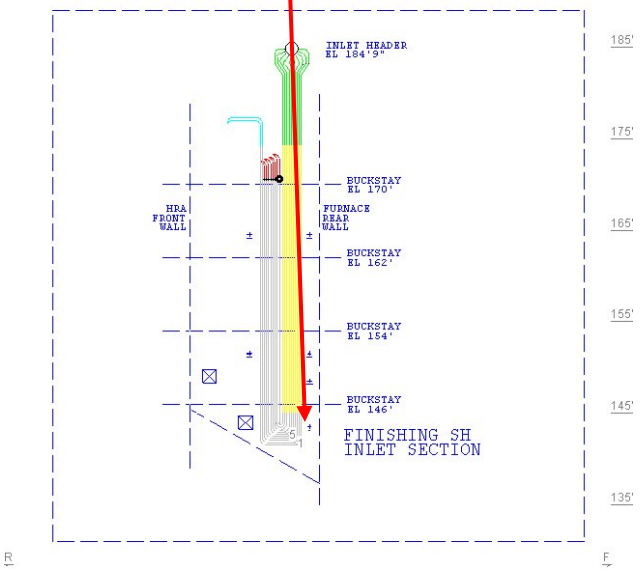
Material: 2.25" OD x .611" MWT x SA-213T22

The Final Risk Index Number is 6

Due to a remaining wall thickness between 76% to 85% of MWT, monitor the following tubes/assemblies during future outages:
Assembly/Front-Rear Tube(RWT):

Assembly/Front-Rear Tube(RWT):
A6/F-T2(0.497")
A15/F-T2(0.468")
A15/F-T3(0.502")
A22/F-T1(0.512")





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 6-Finishing Superheat Outlet

AREA: Finishing Superheat Outlet

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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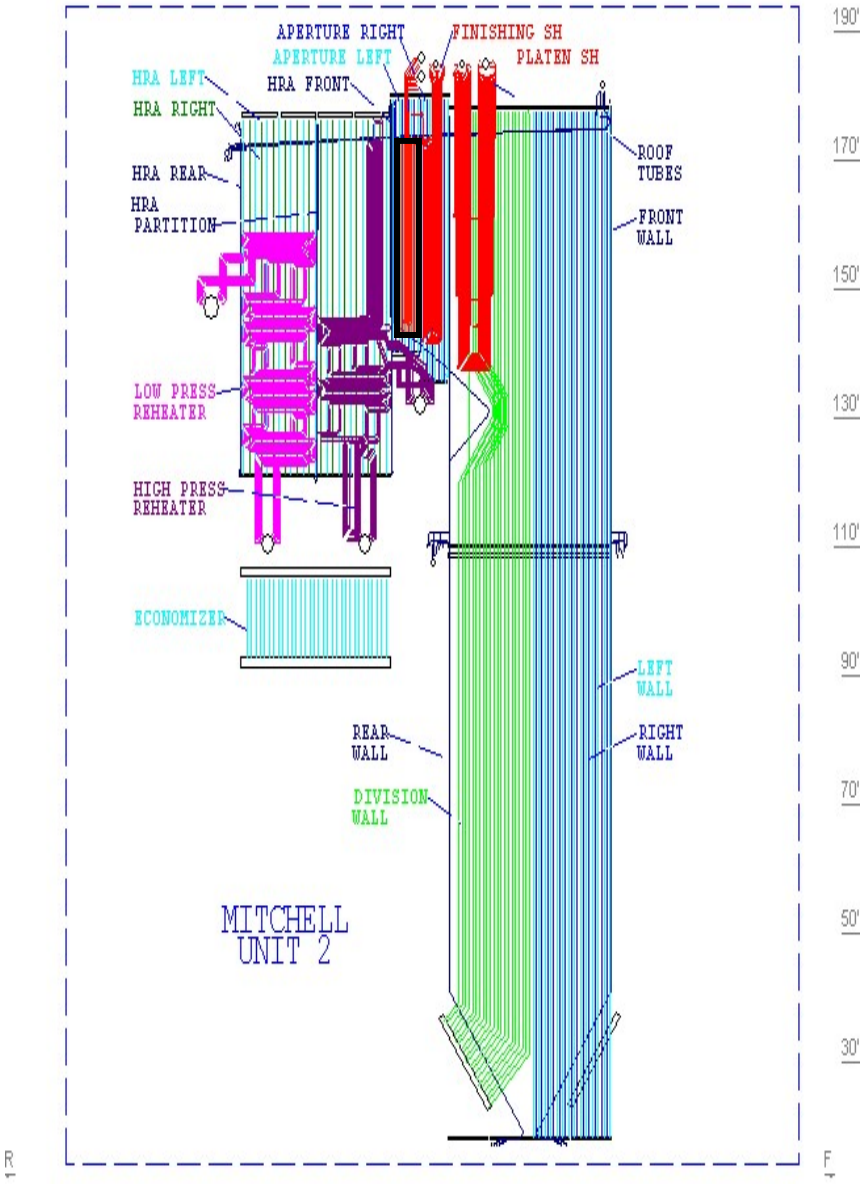


Inspection Report

Station: Mitchell Unit: 2 Report Name: 6-Finishing Superheat Outlet

==========

P R I O R I T Y # 2 R E P A I R S

==========

Record: #116
Action: SPLIT RING CASTING INSTALL-P2
Priority #: 2

Inspector: Cavote P.

General location is Finishing Superheat Outlet, Lower Slope, Front.

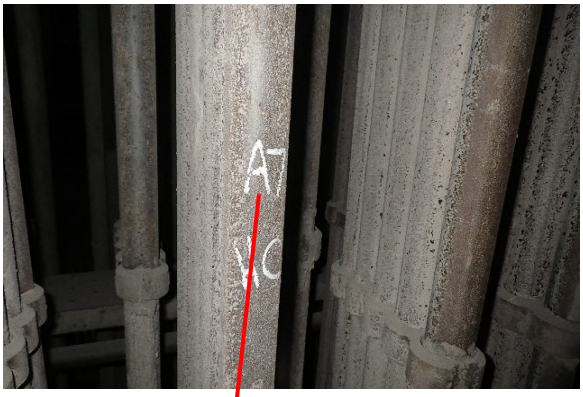
Elevation: 165'

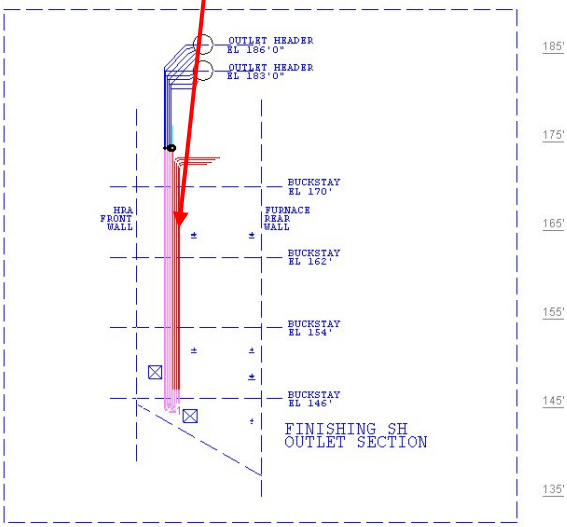
Cause: Fatigue (Thermal/ Vibration)
Appearance: Missing

Material: 1.875" OD x .295" MWT x SA-213TP304H

The Final Risk Index Number is 10

Handcuff split ring alignment brackets are missing or broken off at the following assemblies: Assembly/Front Rear:





Assembly/Front-Rear:

A7F	A21F	A48F	A63F
A10F	A23F	A49R	A66-67F-R
A11F	A25R	A50F	A68R
A11R	A26F	A51F	A74-75R
A12F	A30F-R	A53F	A78-79F
A13R	A34F	A54F	A85F
A14F	A35F	A55F	A90R
A15F	A39R	A57F	A98F
A16F	A41F	A60F	A101F
A18F	A43F	A61F-R	A102FR
A19F	A44R	A62F-R	A104-106F

Install new handcuff split ring castings at these locations.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 6-Finishing Superheat Outlet

Record: #118
Action: SPLIT RING CASTING INSTALL-P2
Priority #: 2

Inspector: Cavote P.

General location is Finishing Superheat Outlet, Lower Slope, Front.

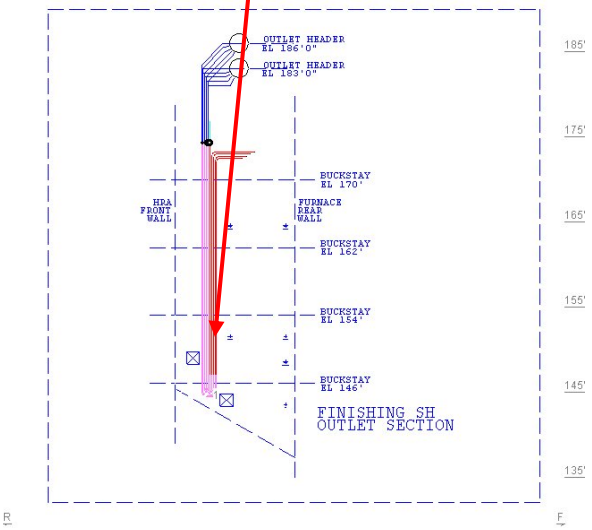
Elevation: 149'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Missing

Material: 1.875" OD x .295" MWT x SA-213TP304H

The Final Risk Index Number is 10

Several handcuff split ring castings are missing or broken off at over half of all assembly locations. Install new handcuff split ring castings at these locations.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 6-Finishing Superheat Outlet

Record: #115
Action: ALIGN AND ATTACH-P2
Priority #: 2,

Inspector: Cogley S.

General location is Finishing Superheat Outlet.

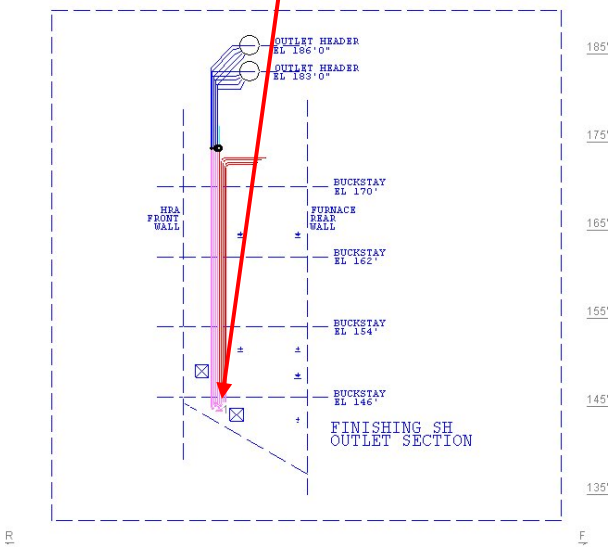
Elevation: 145'

Cause: Fatigue (Thermal)
Appearance: Bowed Tubing

Material: 1.875" OD x .323" MWT x SA-213TP304H

The Final Risk Index Number is 11

The assemblies of the Finishing Superheat Outlet pendant are severely out of alignment to where the assemblies are intertwined. It is recommended that these assemblies be realigned to where they are in plane with the leading tube.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 6-Finishing Superheat Outlet

==========

P R I O R I T Y # 3 R E P A I R S

==========

Record: #120
Action: PLAN FOR FUTURE REPLACEMENT-P
Priority #: 3

Inspector: Brown M.

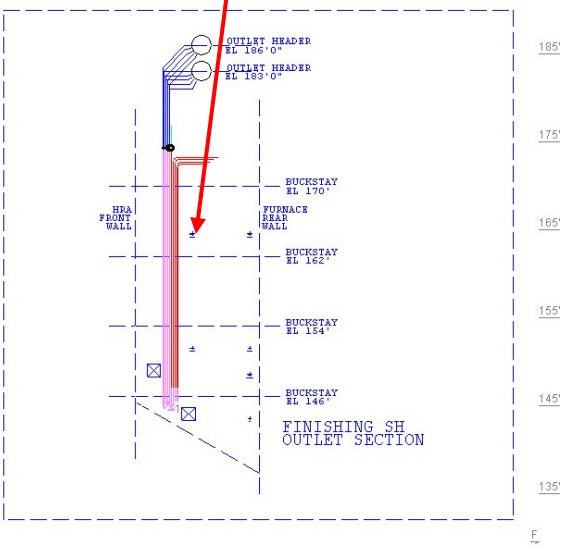
General location is Finishing Superheat Outlet, Left Side Wall.

Elevation: 164'

Cause: Fatigue (Thermal)
Appearance: Possible Crack

The Final Risk Index Number is 8

One small star-like crack was observed in the upper left side (IK-15) soot blower lance head, however it still appears to be in serviceable condition. Re-inspect at next outage.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 6-Finishing Superheat Outlet

Record: #117
Action: ALIGN AND ATTACH-P3
Priority #: 3

Inspector: Cogley S.

General location is Finishing Superheat Outlet, Roof.

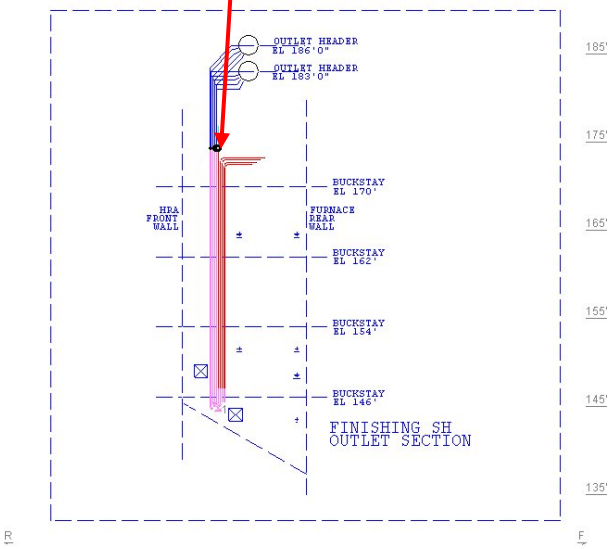
Elevation: 172'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Bowed Tubing

The Final Risk Index Number is 6

The roof tubes adjacent to the left and right walls have dropped and are out of alignment.

It is recommended that they be pulled back into plane beginning to the front of the Finishing Superheater Inlet Pendant and extending approximately 25' to the rear of the Rear Water Wall Screen Tubes.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 7-Furnace Front Wall

AREA: Furnace Front Wall

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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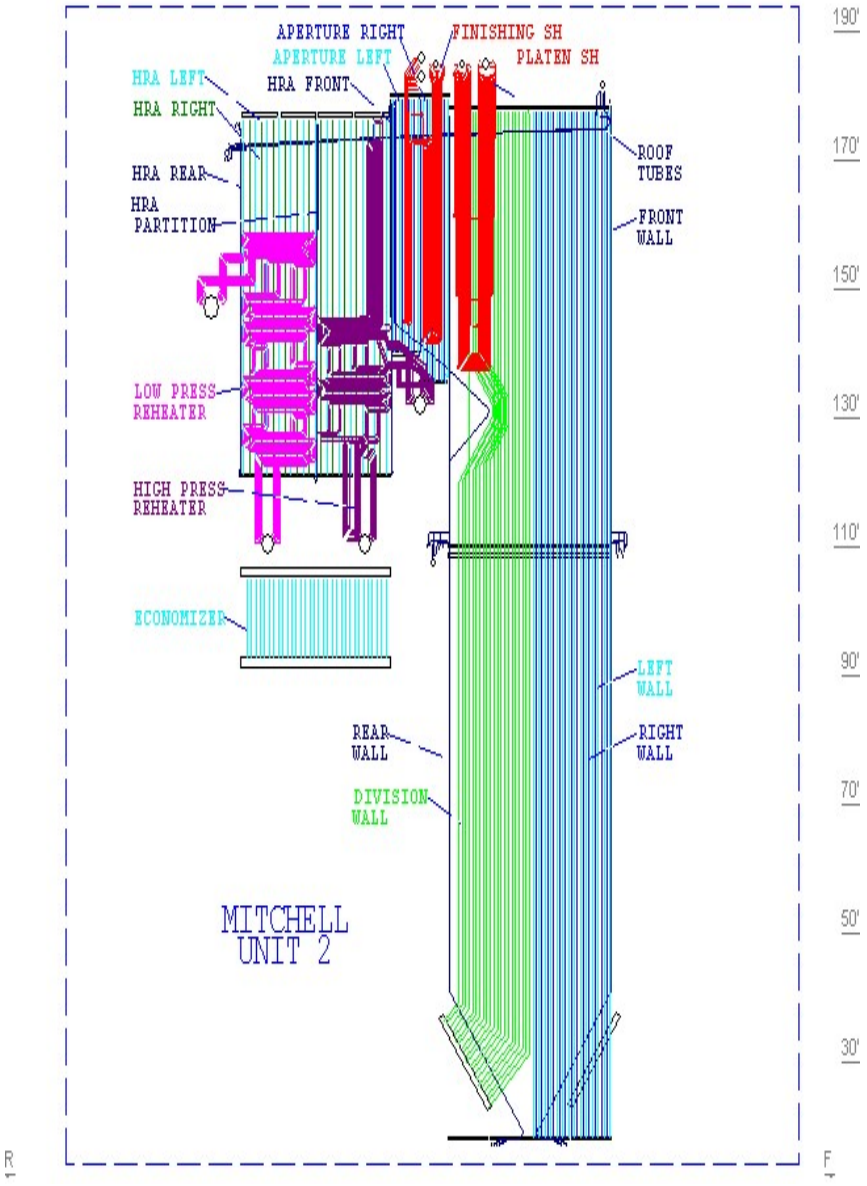


Inspection Report

Station: Mitchell Unit: 2 Report Name: 7-Furnace Front Wall

==========

P R I O R I T Y # 1 R E P A I R S

==========

Record: #119
Action: TUBE REPLACEMENT-P1
Priority #: 1

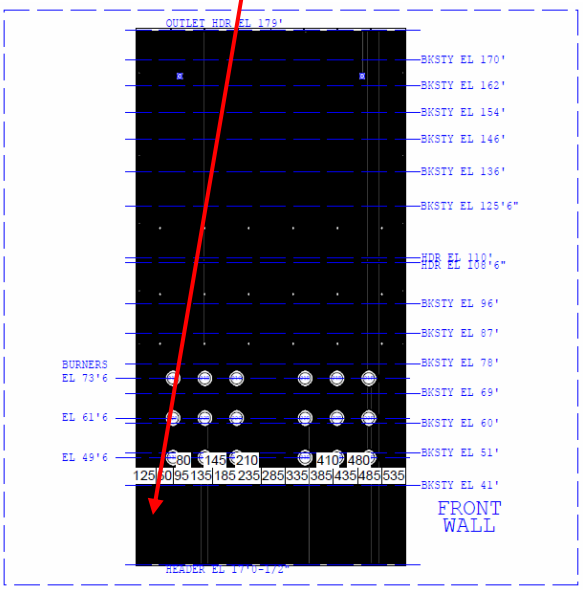
Inspector: Hubbard T.

General location is Furnace Front Wall, Upper Slope, Slope.

Cause: Work Quality (Maintenance Damage)
Appearance: Gouged Tube

Material: 1.50" OD x .250" MWT x SA-213T2

Install a 1' dutchman Tube #554 on the front wall slope 2' below the transition due to a grinder cut approximately 0.062" wide. RWT is unobtainable, however the grinder cut is into the membrane and mineral deposits around this area are indicative of a leak.



Work Order: _____ Status: Inspected

Gtrack v 3.5.3

Inspection Report

Station: Mitchell Unit: 2 Report Name: 7-Furnace Front Wall

Record: #122
Action: FURTHER RESEARCH REQUIRED-P1
Priority #: 1

Inspector: Hubbard T.

General location is Furnace Front Wall, Front Wall, Left.

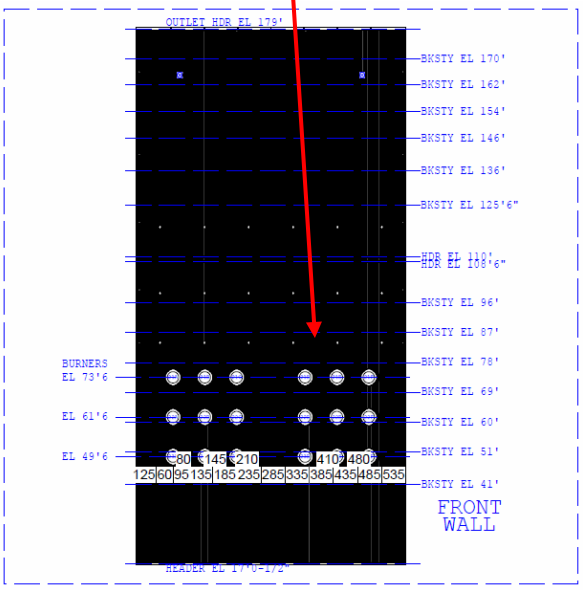
Elevation: 84'

Appearance: Crack Indication

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 15

Between tubes 111 and 112 the membrane is built up higher than the rest of the area and there are ***two (2) indications of a possible leak***. Recommend grinding membrane at this spot and investigating for possible holes or cracks in tube/tubes. There were mineral deposits around this area indicative of a leak.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 7-Furnace Front Wall

Record: #126
Action: FURTHER RESEARCH REQUIRED-P1
Priority #: 1

Inspector: Cogley S.

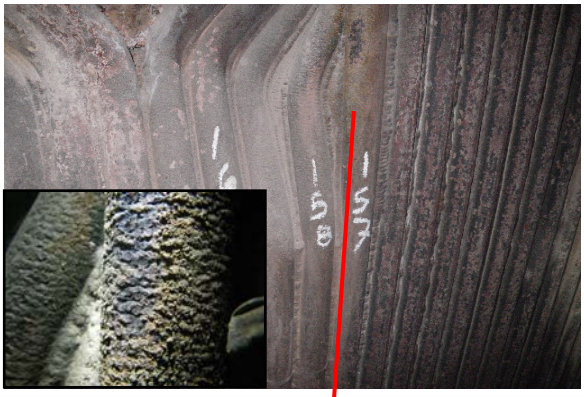
General location is Furnace Front Wall, Water Cannon, Left.

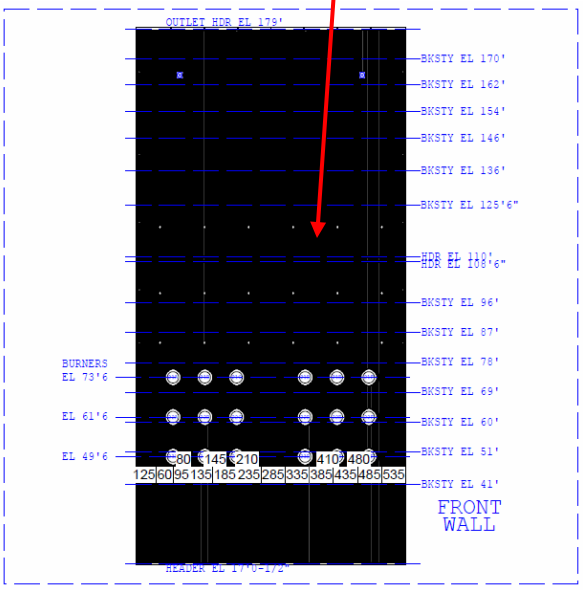
Appearance: Quench Cracked Tube

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 17

Tubes 157-159 are showing signs of quench cracking just below the left water cannon on the front wall. It is recommended that tubes be ground down to contour to determine RWT and repair as needed.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 7-Furnace Front Wall

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P R I O R I T Y # 2 R E P A I R S

==========

Record: #128
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is Furnace Front Wall.

Elevation: 98'

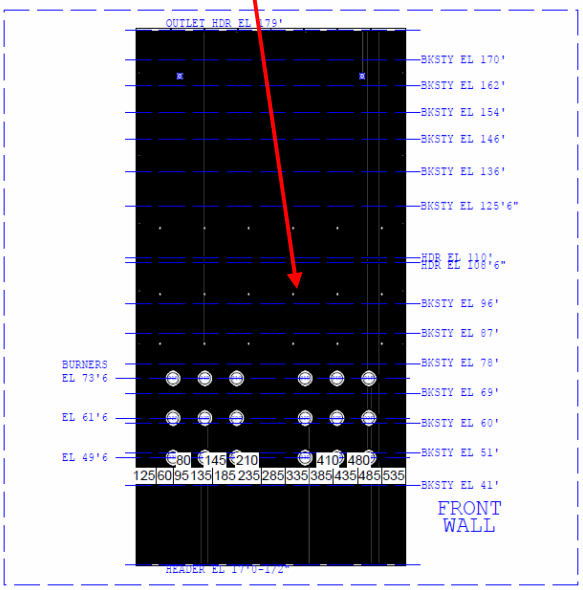
Cause: Erosion (Soot Blower)
Appearance: Erosion Flat

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 12

Restore tubes 231-232 to RWT by applying a 1" x 3" pad weld as denoted by white box. The IR blowers are no longer in service however pad weld repair is recommended based on visual inspection.

Note: RWT was unobtainable due to condition of the tube surface.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 7-Furnace Front Wall

Record: #123
Action: REFRACTORY INSTALLATION-P2
Priority #: 2

Inspector: Cogley S.

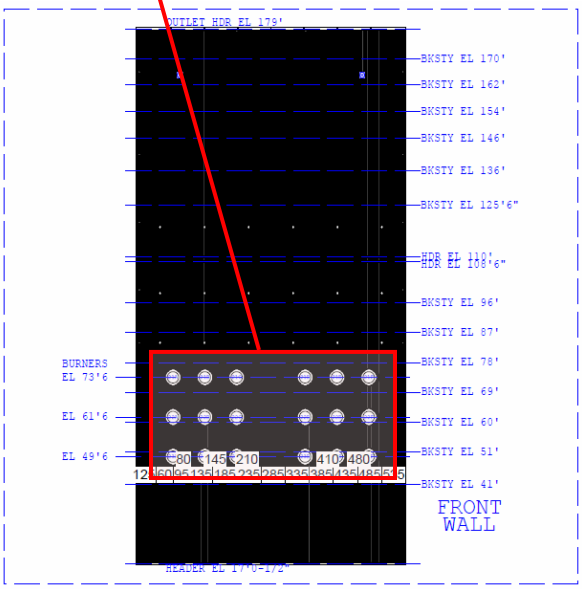
General location is Furnace Front Wall, At Burners.

Cause: Fatigue (Thermal)
Appearance: Missing

The Final Risk Index Number is 10

Replace missing refractory around all of the front water wall burner ports. Although all of the burners are in need of refractory repair, the following are the most severe exposing tube material and expanded metal:

Burners:
21A
21D
21E
21F
22B
22C
22D
22E



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 7-Furnace Front Wall

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P R I O R I T Y # 3 R E P A I R S

==========

Record: #124
Action: REPLACE CERAMIC TILE - P3
Priority #: 3,

Inspector: Cogley S.

General location is Furnace Front Wall, At Burners.

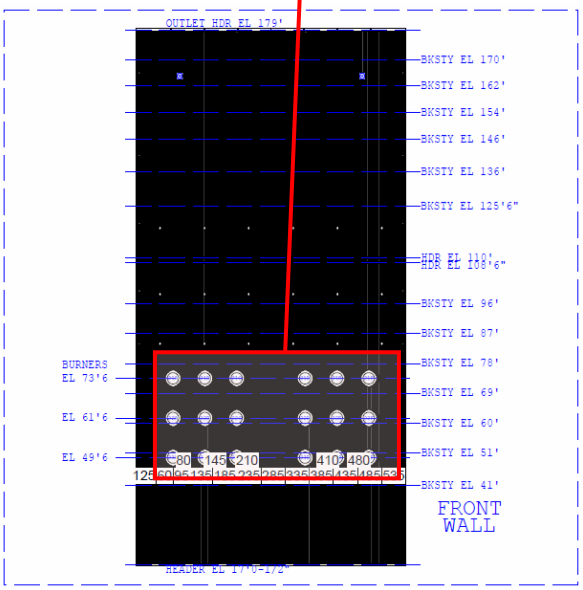
Cause: Thermal Fatigue
Appearance: Missing

The Final Risk Index Number is 7

Replace the ceramic tile at the following front wall burners:

Burners:
21D
21E
22B
23F

The remaining burner tiles are in good condition and no conical diffusers need repair.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

AREA: Furnace Rear Wall

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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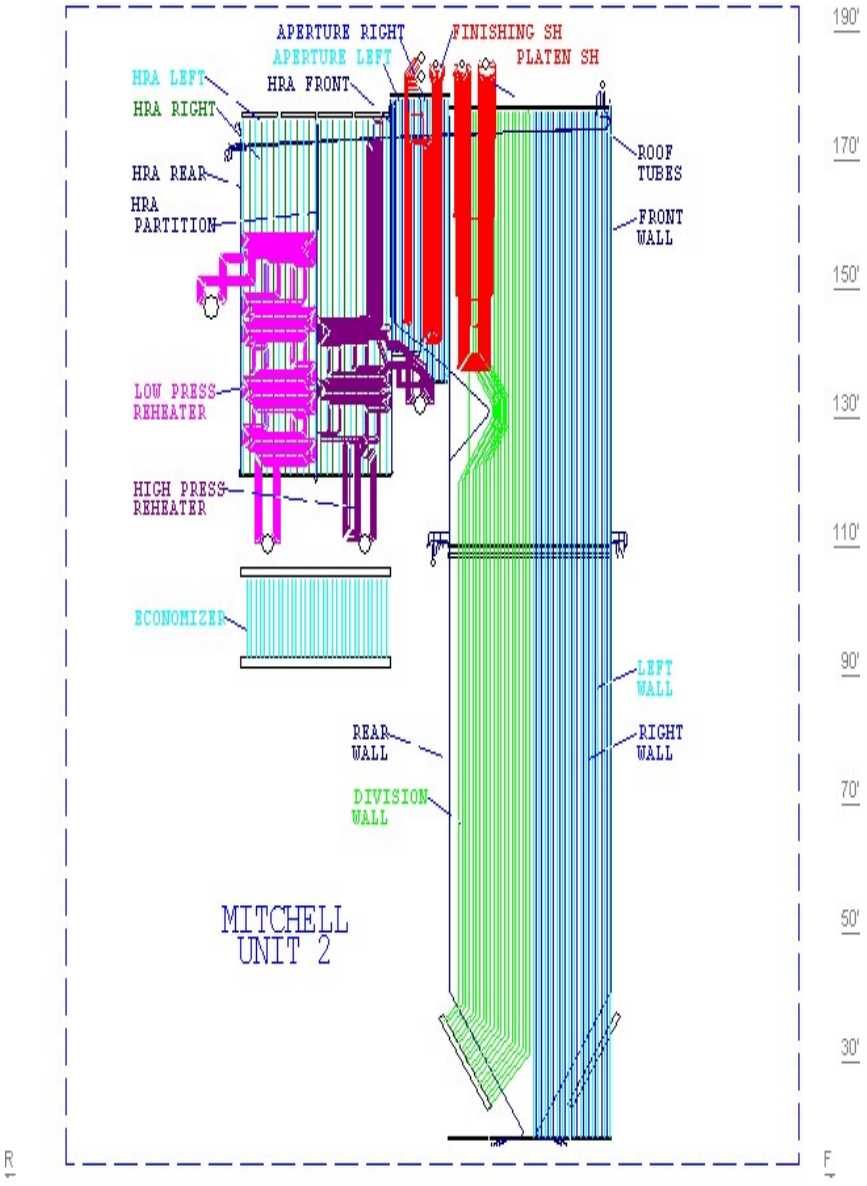


Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

==========

P R I O R I T Y # 2 R E P A I R S

==========

Record: #135
Action: Tube Restoration Weld – P2
Priority #: 2

Inspector: Brown M.

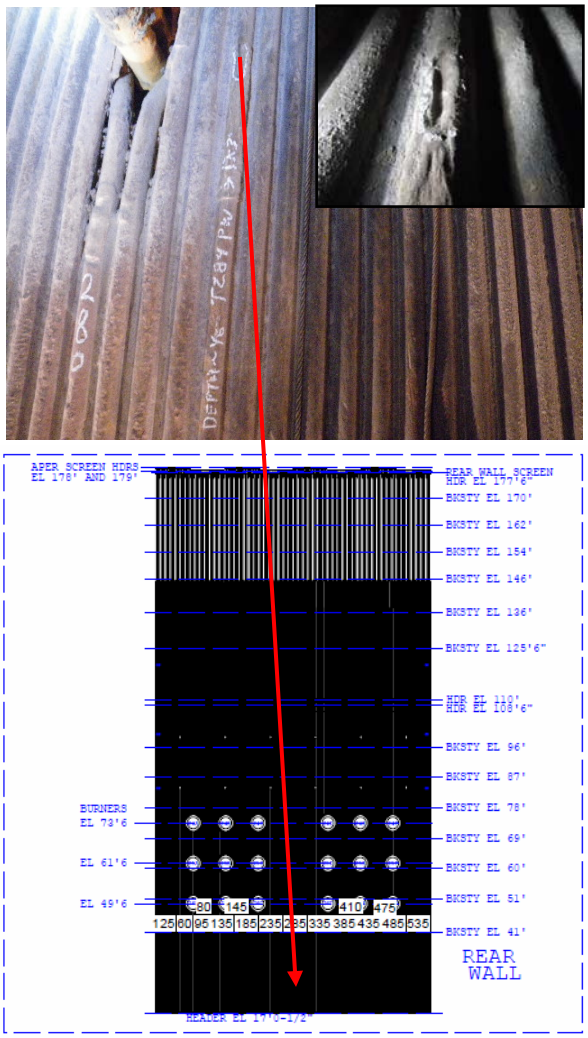
General location is Furnace Rear Wall, Lower Slope.

Elevation: 25'

Appearance: Gouged tube

The Final Risk Index Number is 13

Restore ***tube 284 of the lower slope to MWT by applying a 1" x 3" pad weld***. Existing pad weld has a tube gouge approximately 1/8" of an inch depth.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

Record: #127
Action: Refractory Installation – P2
Priority #: 2

Inspector: Brown M.

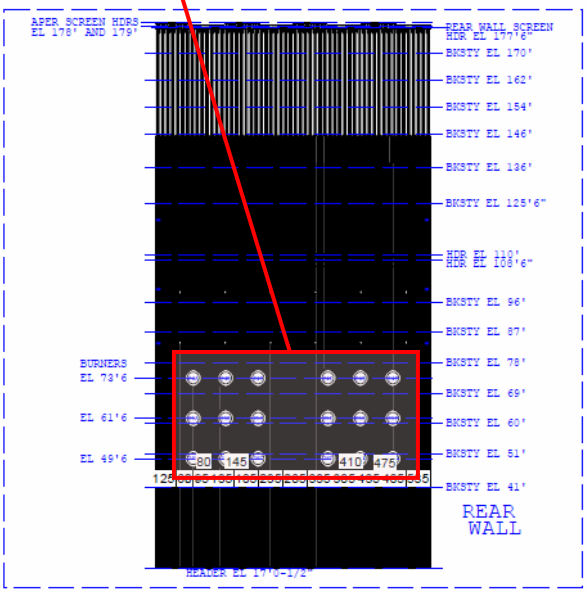
General location is Furnace Rear Wall, Above Burners.

Cause: Fatigue (Thermal/ Vibration)
Appearance: Missing

The Final Risk Index Number is 10

Replace missing refractory around all of the front water wall burner ports. Although all of the burners are in need of refractory repair, the following are the most severe exposing tube material and expanded metal:

Burners:
24A
24F
25A
26A-B



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

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P R I O R I T Y # 3 R E P A I R S

==========

Record: #133
Action: REFRACTORY INSTALLATION-P3
Priority #: 3

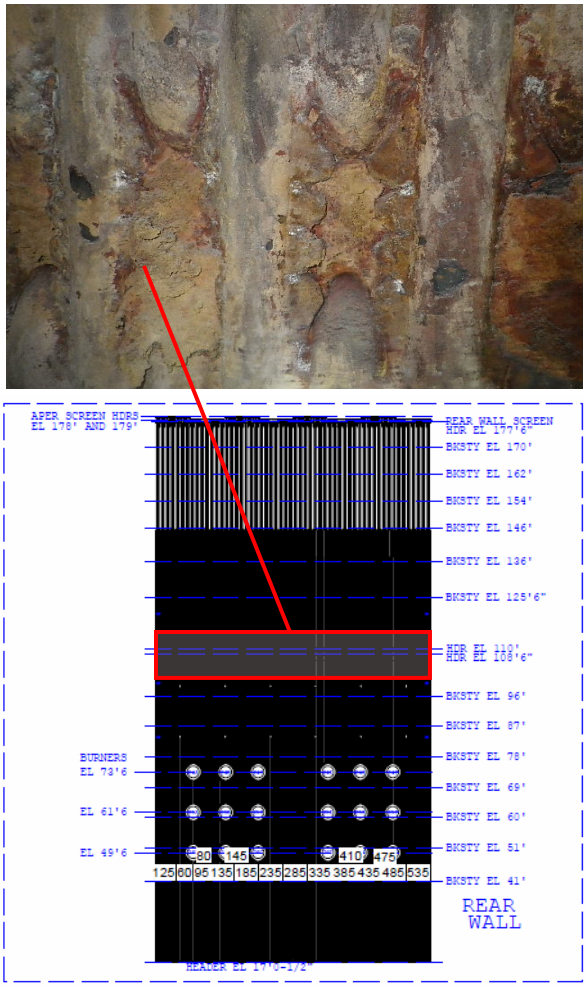
Inspector: Brown M.

General location is Furnace Rear Wall, Mix Header Penetrations.

Elevation: 108'

Cause: Fatigue (Thermal/ Vibration)
Appearance: Missing

Repack the missing refractory at both header elevations on the rear wall. Missing refractory has exposed the peg fins which are becoming burnt and thermal fatigued.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

Record: #121
Action: INFORMATION ONLY-P3
Priority #: 3

Inspector: Brown M.

General location is Furnace Rear Wall, Multiple Elevations.

Elevation: 47'

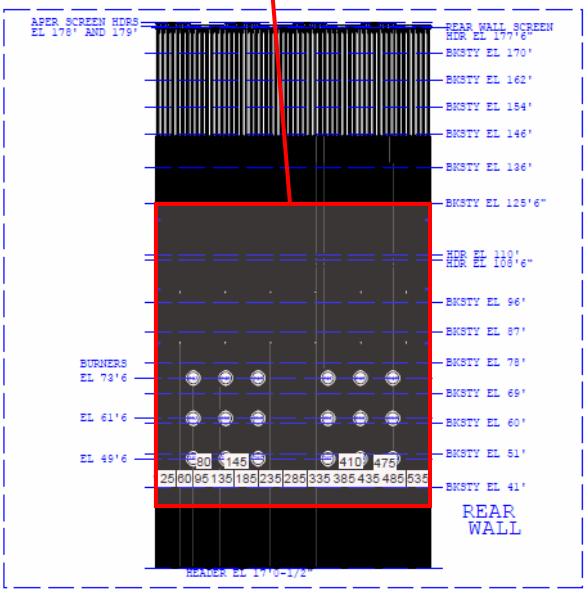
Appearance: Excessive Attachment

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 1

Numerous excessive attachments (>1/8") were observed throughout the rear wall and examples could be found at elevations 47', 83'.

Due to expansion differentials between the tube and attachment, cracking can sometimes initiate. Best practices would indicate their complete removal after completion of their intended use.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

Record: #130
Action: INFORMATION ONLY-P3
Priority #: 3

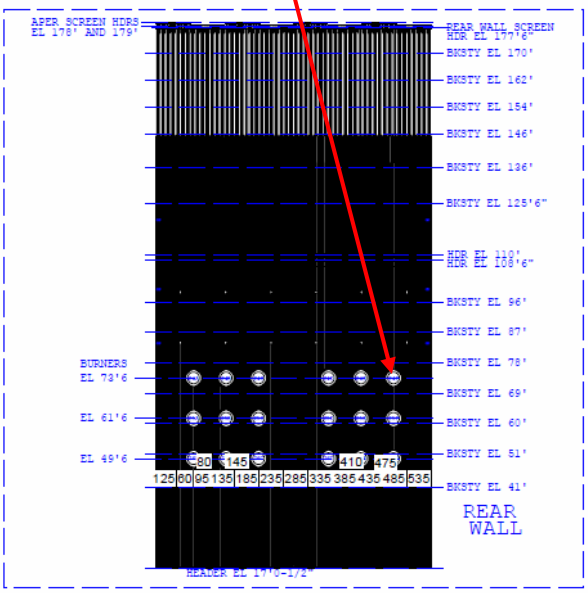
Inspector: Brown M.

General location is Furnace Rear Wall, Burner, 24F.

Cause: Fatigue (Thermal/ Vibration)
Appearance: Detached

The Final Risk Index Number is 5

One thermocouple was observed detached at the top side of burner 24F coal nozzle.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

Record: #132
Action: INFORMATION ONLY-P3
Priority #: 3

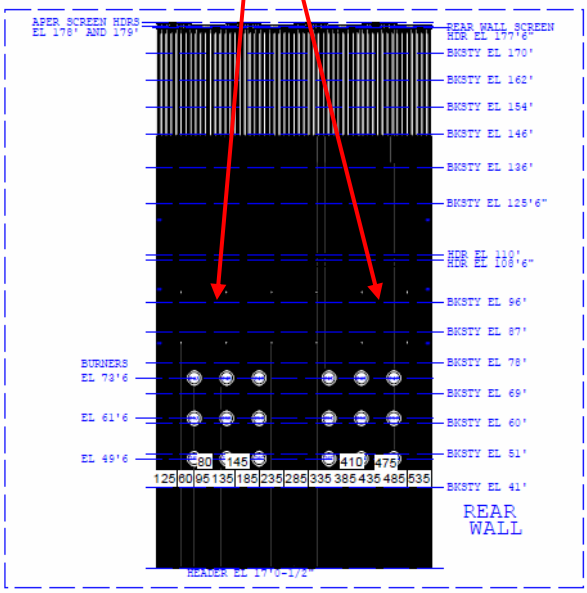
Inspector: Brown M.

General location is Furnace Rear Wall, Water Cannons.

Appearance: Serviceable

The Final Risk Index Number is 1

Both rear wall water cannons were inspected and found to be in acceptable condition in regard exposed wall boxes and the minimal cracking on the nozzle tips, however the left side did exhibit more cracking in the tip.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

Record: #131
Action: REPLACE CERAMIC TILE - P3
Priority #: 3

Inspector: Brown M.

General location is Furnace Rear Wall, At Burners.

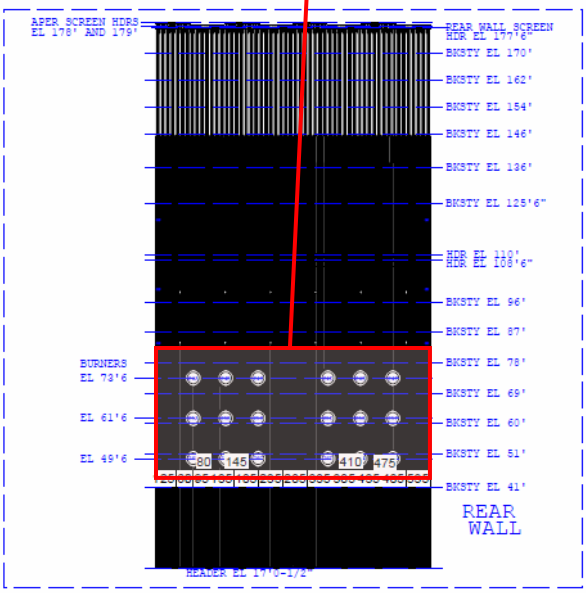
Cause: Fatigue (Thermal/ Vibration)
Appearance: Missing

The Final Risk Index Number is 7

Replace the ceramic tile at the following rear wall burners/clock position:

Burners/Clock Position:
24C/3
24D/4-12
25B/5-12
25C/11
26D/12
26E/11

The remaining burner tiles are in good condition and no conical diffusers need repair.



Work Order: _____ Status: Inspected

Gtrack v 3.5.3

Inspection Report

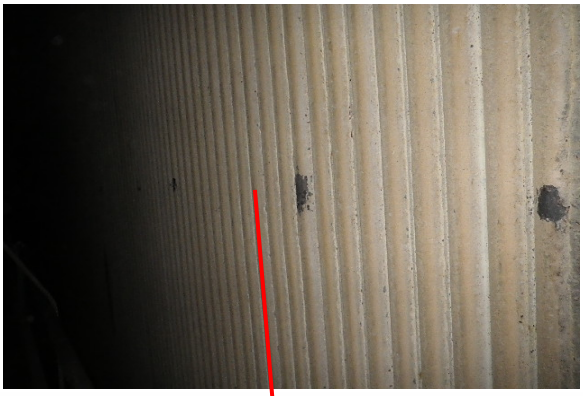
Station: Mitchell Unit: 2 Report Name: 8-Furnace Rear Wall

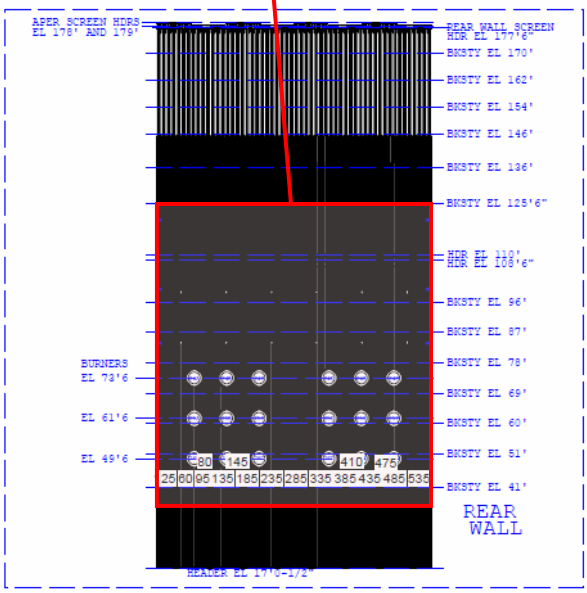
Record: #129
Action: NO ACTION
Priority #: 3

Inspector: Brown M.

General location is Furnace Rear Wall.

Material: 1.50" OD x .250" MWT x SA-213T2





Approximately 40 rear wall tubes were examined at two elevations for the presence of quenching from the water cannons. No indications were visually present in any location.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 9-Furnace Division Wall

AREA: Furnace Division Wall

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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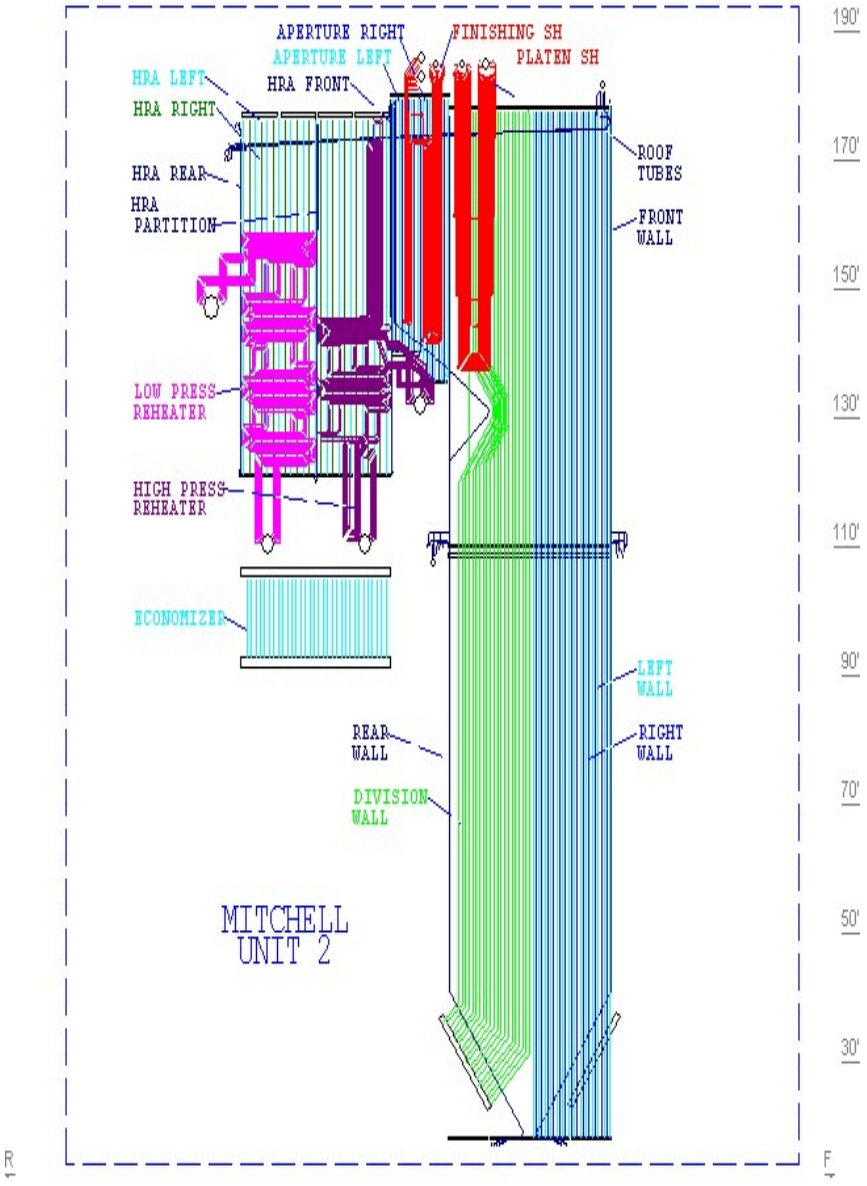

Inspection Report

Station: Mitchell Unit: 2 Report Name: 9-Furnace Division Wall

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P R I O R I T Y # 1 R E P A I R S

==========

Record: #138
Action: TUBE REPLACEMENT-P1
Priority #: 1

Inspector: Cogley S.

General location is Furnace Division Wall, Right.

Elevation: 30'

Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

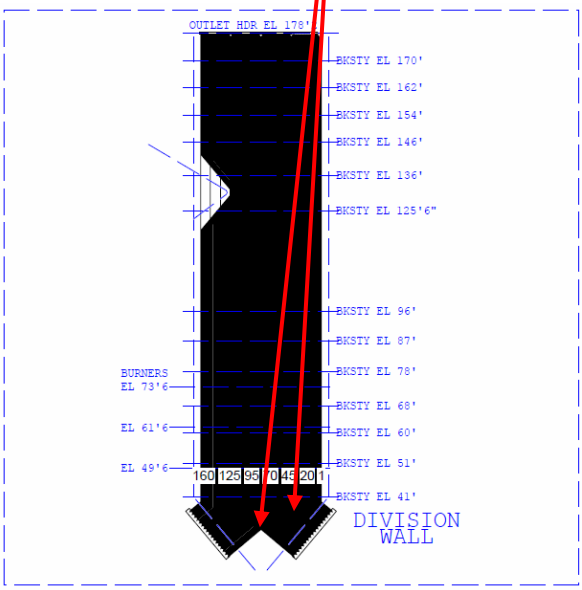
Material: 2.375" OD x .360" MWT x SA-213T2

The Final Risk Index Number is 20

Due to a RWT at or less than 65% of MWT, the following are recommended for replacement for a length of 3' - Tube(RWT):

Tube(RWT):
T41(0.210")
T82(N/A)
T83(N/A)

Cut lines are marked with white grease stick 18" above and below the transition from the 45 degree run and the vertical run.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 9-Furnace Division Wall

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P R I O R I T Y # 2 R E P A I R S

==========

Record: #136
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Hubbard T.

General location is Furnace Division Wall, Right Side Wall, Front.

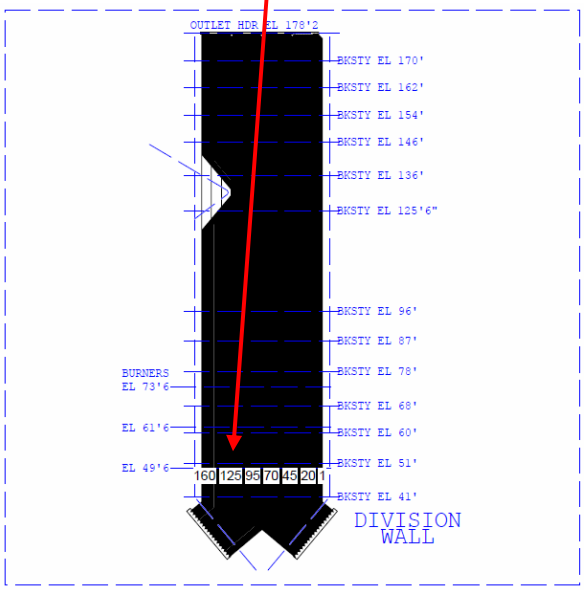
Elevation: 50'

Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

Material: 2.375" OD x .360" MWT x SA-213T2

The Final Risk Index Number is 13

Tube 123 on the division wall is contacting tube 124 and abrasion is occurring. ***Restore tube 123 to MWT by applying a 10" x 2" pad weld due to a UT of 0.271"***. The pad weld will encompass the area of wall loss which has been denoted on tubing by white box.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 9-Furnace Division Wall

Record: #140
Action: TUBE RESTORATION WELD-P2
Priority #: 2

Inspector: Cogley S.

General location is Furnace Division Wall, Right.

Elevation: 30'

Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

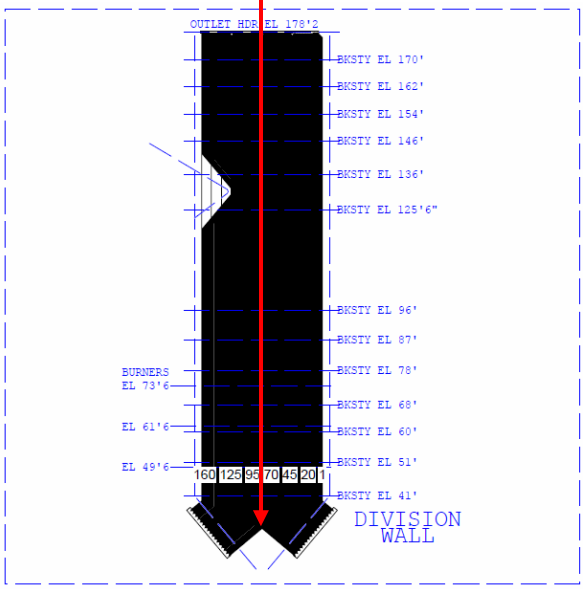
Material: 2.375" OD x .360" MWT x SA-213T2

The Final Risk Index Number is 13

Due to a remaining wall thickness between 66% to 75% of MWT, the following are recommended for pad weld repair: Tube(RWT)PW Length:

Tube(RWT)PW Length:
T84(0.N/A")5"
T124(0.260")3"

The pad weld will encompass the area of wall loss which has been denoted on tubing by white box.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 9-Furnace Division Wall

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P R I O R I T Y # 3 R E P A I R S

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Record: #137
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Hubbard T.

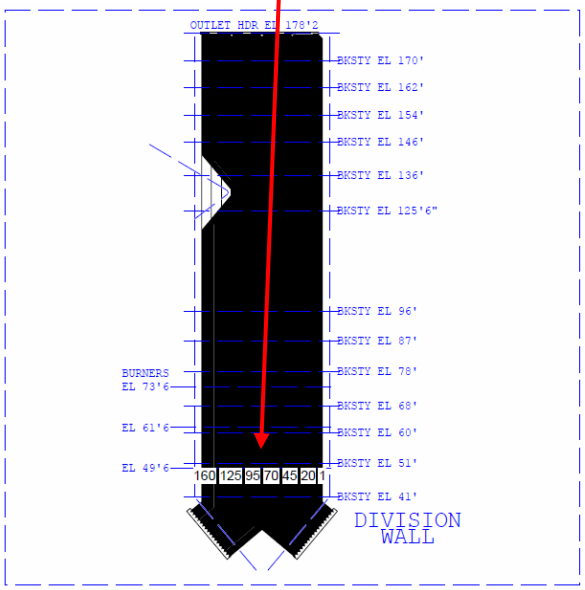
General location is Furnace Division Wall, Right.

Cause: Fireside Corrosion
Appearance: Corroded

Material: 2.375" OD x .360" MWT x SA-213T2

The Final Risk Index Number is 3

Tubes 70-82 on division wall at first burner level, right side, has fireside corrosion indications. Lowest obtainable RWT was 0.310" and does not warrant repair at this time. It is recommended these tubes be monitored during future outages.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 9-Furnace Division Wall

Record: #141
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Cogley S.

General location is Furnace Division Wall, Left.

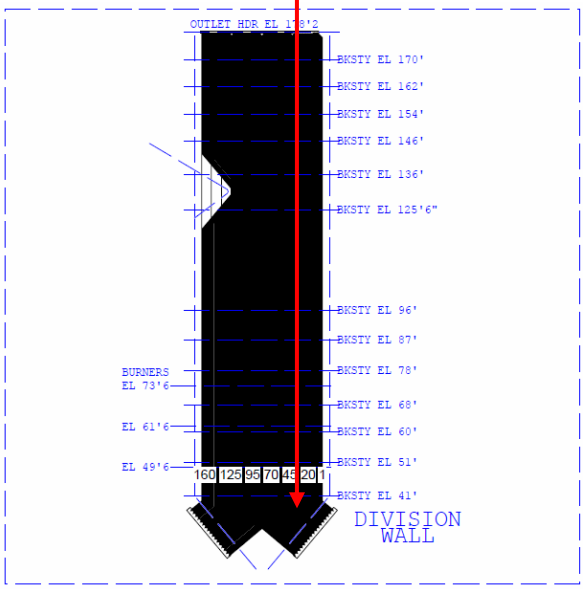
Elevation: 30'

Cause: Fretting or Rubbing (Abrasion)
Appearance: Abraded

Material: 2.375" OD x .360" MWT x SA-213T2

The Final Risk Index Number is 7

Monitor the left side of tubes 39-40 of the furnace division wall at the transition to the vertical run. Tubes are abraded but warrant no repair at this time.



Work Order: _____ Status: Inspected

Gtrack v 3.5.3

Inspection Report

Created on 3/14/2012 12:56 PM

Station: Mitchell Unit: 2 Report Name: 9-Furnace Division Wall

Record: #142
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Cogley S.

General location is Furnace Division Wall, Slope.

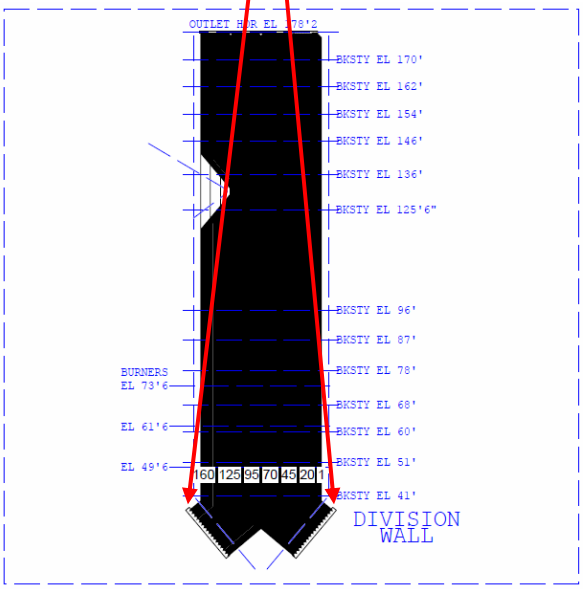
Elevation: 38'

Cause: Erosion (Fly Ash)
Appearance: Eroded

Material: 2.375" OD x .360" MWT x SA-213T2

The Final Risk Index Number is 5

Monitor tubes 1 and 164 of the furnace division wall where they penetrate the lower slope. Tubes are showing signs of erosion but warrant no repair at this time.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 10-Furnace Left Wall

AREA: Furnace Left Wall

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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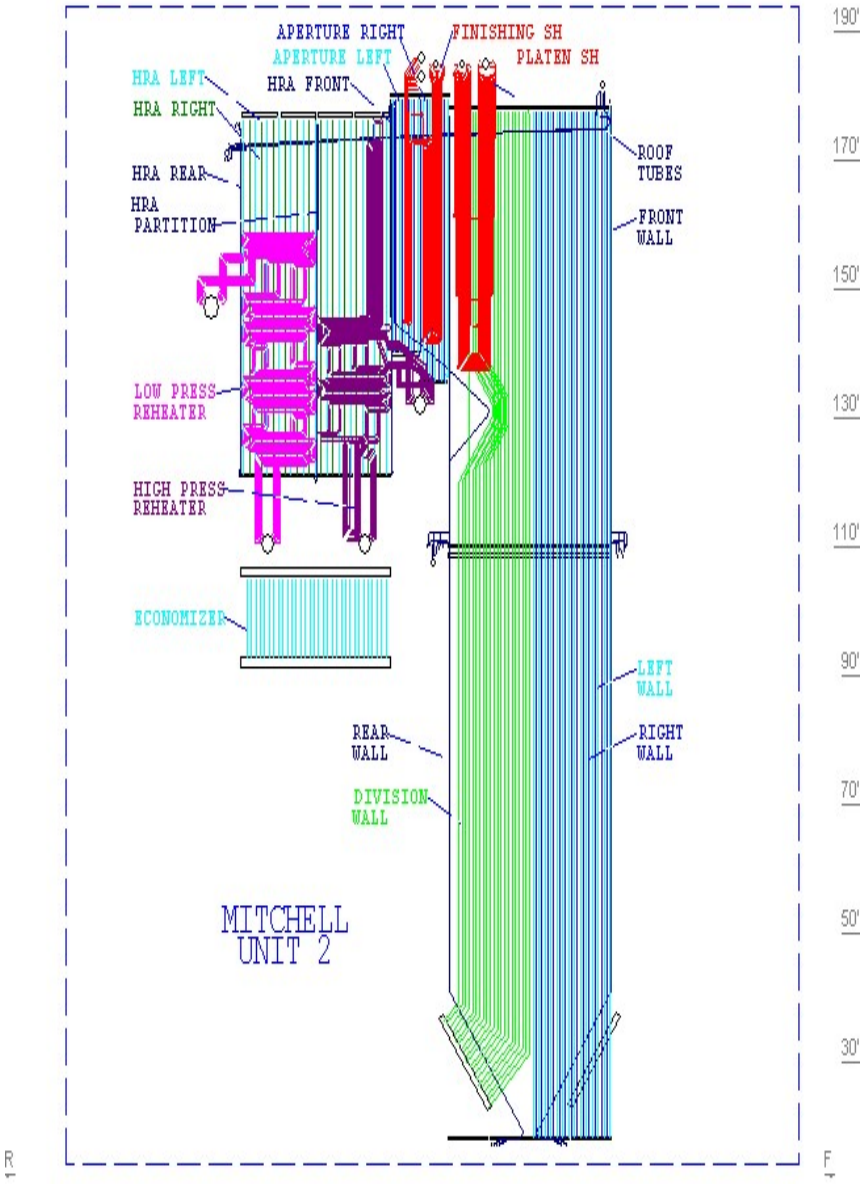

Inspection Report

Station: Mitchell Unit: 2 Report Name: 10-Furnace Left Wall

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P R I O R I T Y # 2 R E P A I R S

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Record: #143
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2,

Inspector: Brown M.

General location is Furnace Left Wall.

Elevation: 83'

Appearance: Circumferential Cracking in Overlay

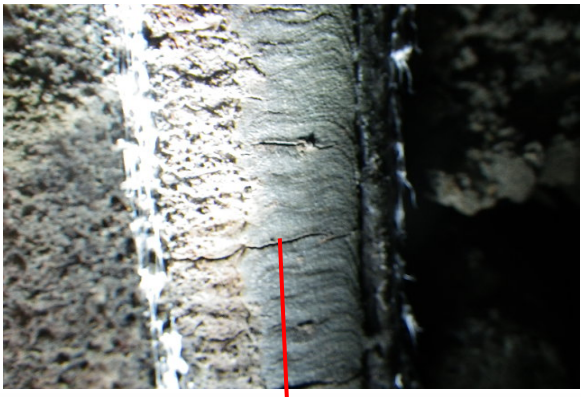
Material: 1.50" OD x .250" MWT x SA-213T2

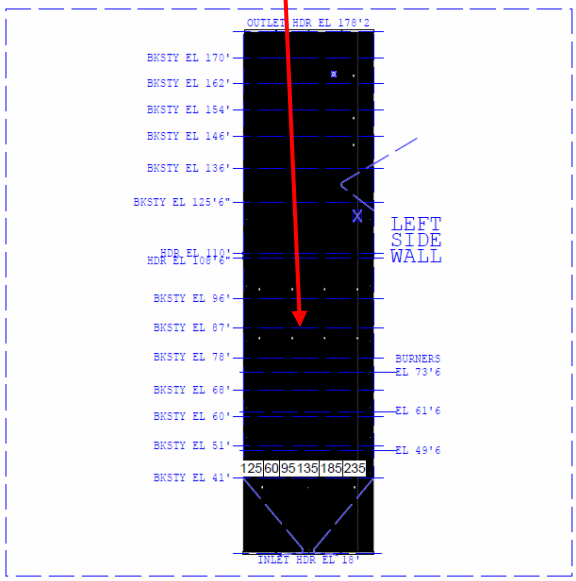
The Final Risk Index Number is 13

Circumferential crack indications in the weld overlay were observed at Tube 170 adjacent to IR-3 over an approximate 6" area.

It is recommended that the indications be ground to termination to determine if the cracks may have propagated into the tube boundary and are in need of pad weld or replacement repairs. RWT values between .188" to .164" would indicate pad weld restoration and below .163" is replacement, per UDC criteria.

NOTE: Tube may be marked 172 in the field.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 10-Furnace Left Wall

Record: #146
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2

Inspector: Brown M.

General location is Furnace Left Wall.

Elevation: 120'

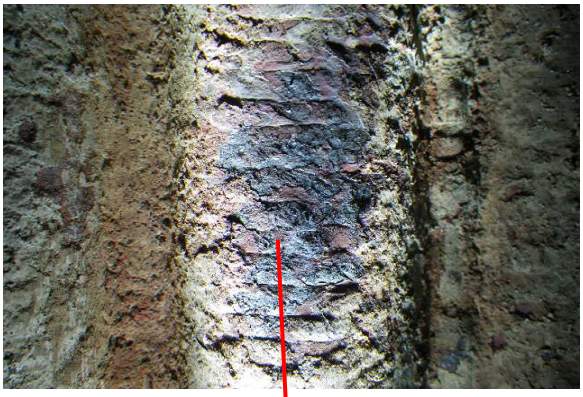
Cause: Previous IR Damage
Appearance: Quench Cracked Tube

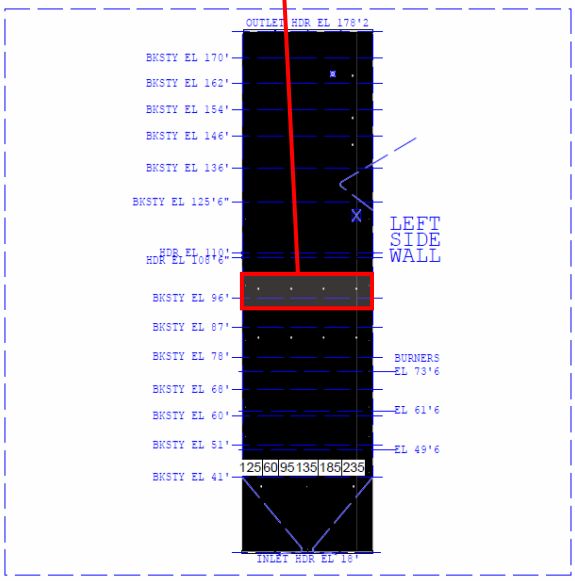
Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 13

Located in the upper most IR band below the deflection arch, quenching indications were observed on approximately a total 38 tubes around the 1st and 3rd IR ports. At the 1st port there are 7 to the left of center and 17 to the right. At the 3rd, 6 to the left of center and 8 to the right.

It is recommended that the indications be ground to termination to determine the need for weld or replacement repairs. RWT values between .188" to .164" would indicate restoration and below .163" is replacement, per UDC criteria.





NOTE: The involved areas are marked off in 3' to 4' squares.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 10-Furnace Left Wall

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P R I O R I T Y # 3 R E P A I R S

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Record: #134
Action: PLAN FOR FUTURE REPLACEMENT-P
Priority #: 3

Inspector: Brown M.

General location is Furnace Left Wall, Bottom.

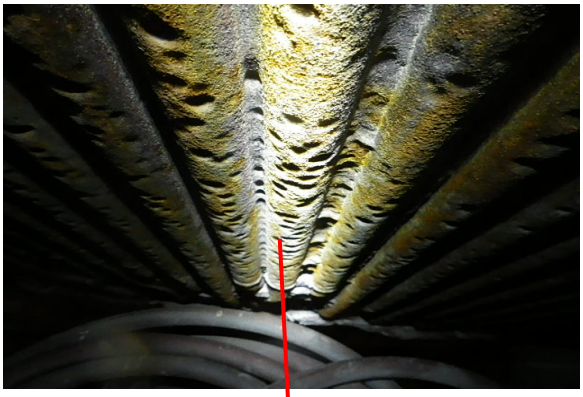
Elevation: 18'

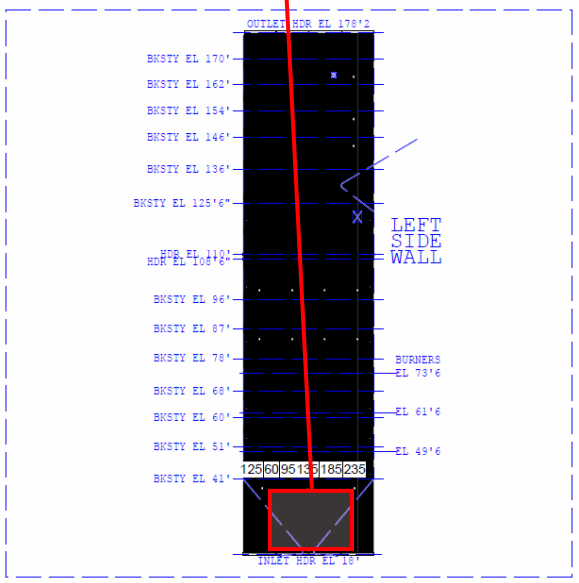
Cause: Deslagging
Appearance: Apparent Shotgun Damage

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 7

As time and/or resources allow, plan or consider a 15'-20' tube panel replacement at the lower center of the left wall above the throat due to impacts from extensive shotgun deslagging. Long term tube integrity may have been sacrificed by the numerous impacts.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 10-Furnace Left Wall

Record: #139
Action: PLAN FOR FUTURE REPLACEMENT-P
Priority #: 3

Inspector: Brown M.

General location is Furnace Left Wall, Lower, Front Side.

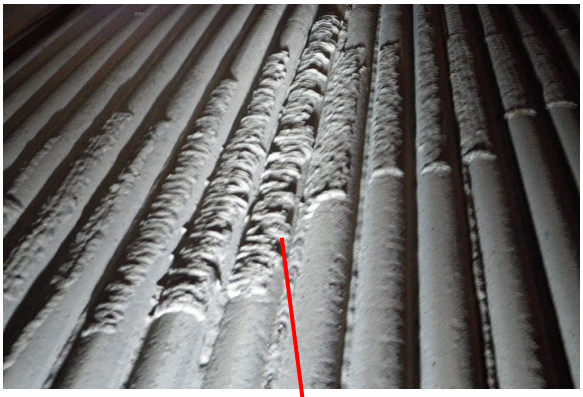
Elevation: 38'

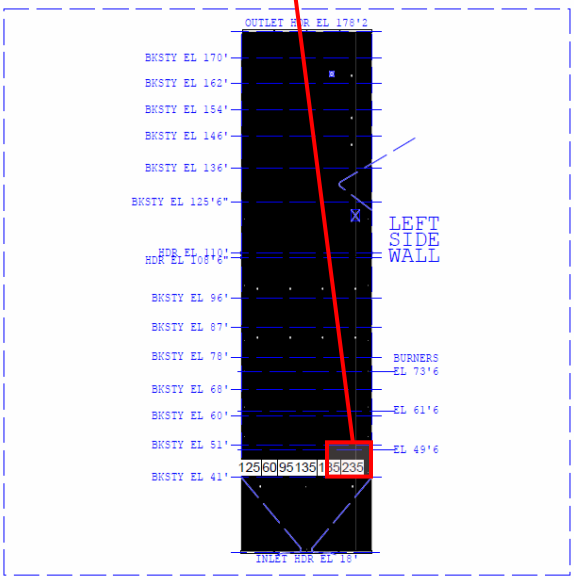
Cause: Previous Repairs
Appearance: Heavy Horizontal Weave Pad Welds

Material: 1.50" OD x .250" MWT x SA-210A1

The Final Risk Index Number is 7

As time and/or resources allow consider a plan to replace an approximate 20 tube panel x 6'to 8' in length located at the front wall IR approximately 1’ above the wall to slope transition. Should a panel not be considered, Tubes 35-36 display the heaviest amount of excessive pad welds.





Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 10-Furnace Left Wall

Record: #145
Action: PEG FIN REPLACEMENT-P3
Priority #: 3

Inspector: Brown M.

General location is Furnace Left Wall, Between Mix Headers.

Elevation: 109'

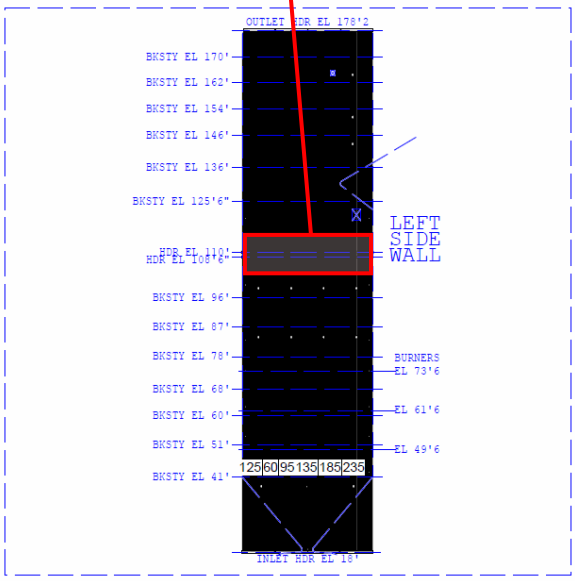
Cause: Fatigue (Thermal)
Appearance: Cracked Membrane

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 7

The membrane on the following Tubes located between the mix headers has become thermal fatigued and cracked. Consider replacement to ensure that cracking does not propagate into the tube wall. Tubes: 44, 65, 87, 107, 129, 150, 170.

NOTE: Due to the pick arrangement, tubes near the front and rear corners could not be examined. The tube count in the field may be off by 2. All tubes are marked with an X and tube number.



Remove existing peg fin remnants and replace with new like material. Install fins with non-continuous side against tube and apply >80% penetration welds not extending past each fin break. Start and stop welds on fin. Do not weld around ends of fins.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 11-Furnace Right Wall

AREA: Furnace Right Wall

The area was numbered from boiler left side to boiler right side. Tubes were counted from front to rear or top to bottom unless otherwise specified.

Items were marked with white grease stick.

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See the Following Pages for Repairs

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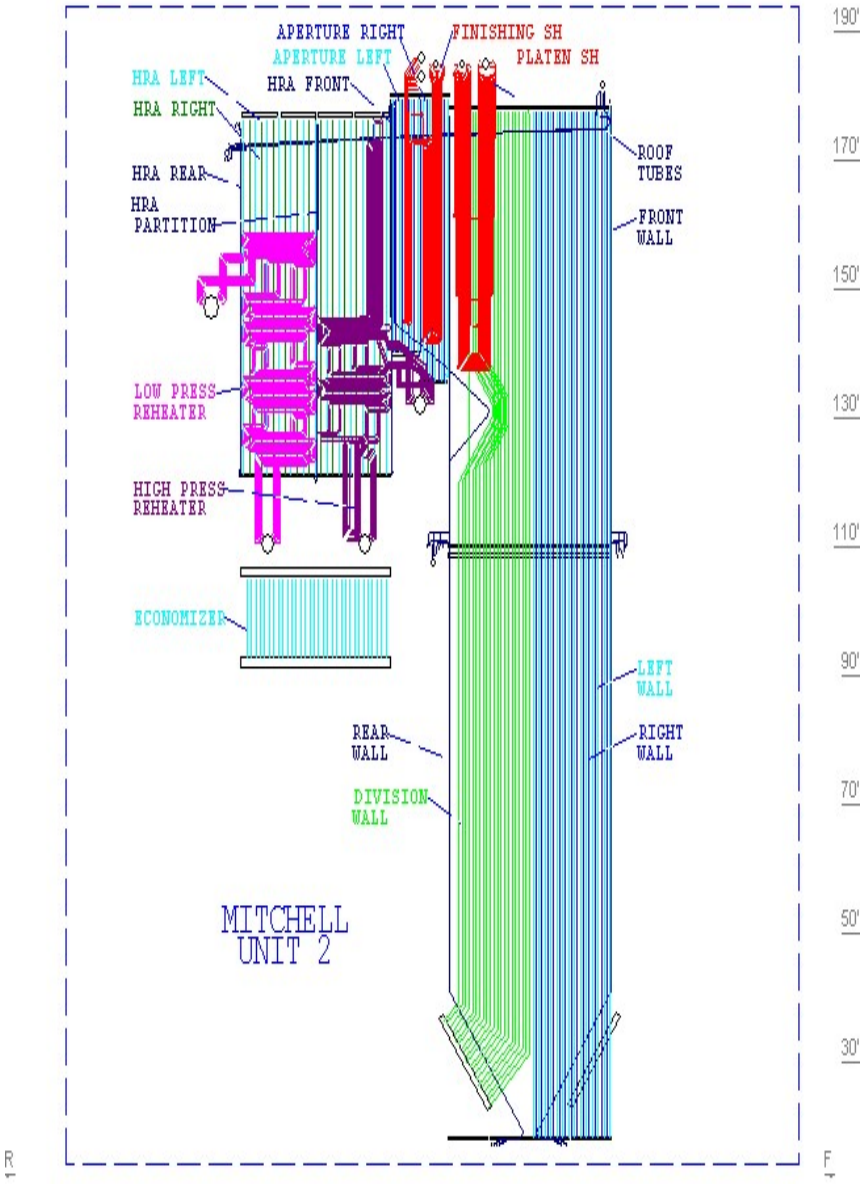

Inspection Report

Station: Mitchell Unit: 2 Report Name: 11-Furnace Right Wall

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P R I O R I T Y # 2 R E P A I R S

==========

Record: #147
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2

Inspector: Brown M.

General location is Furnace Right Wall.

Elevation: 61'

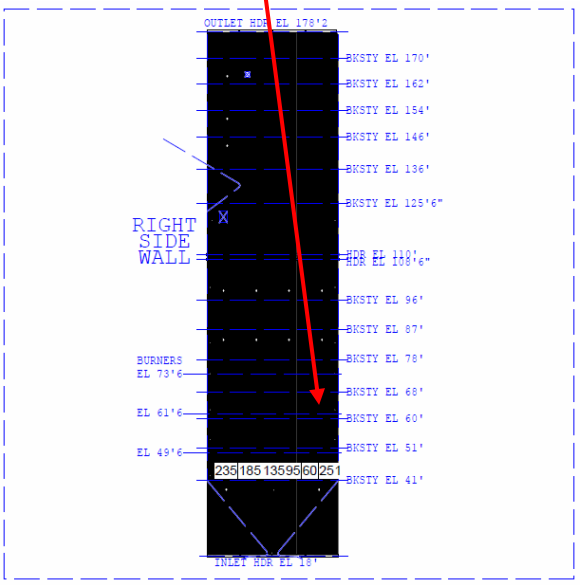
Cause: Fatigue (Thermal)
Appearance: Circumferential Cracking in Overlay

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 13

Circumferential crack indications in the weld overlay was observed at Tubes 106 and 107 at elevation 61 over an approximate 4" area.

It is recommended that the indications be ground to termination to determine if the cracks may have propagated into the tube boundary and the need for weld or replacement repairs. RWT values between .188" to .164" would indicate restoration and below .163" is replacement, per UDC criteria.



Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 11-Furnace Right Wall

Record: #148
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2,

Inspector: Brown M.

General location is Furnace Right Wall.

Elevation: 120'

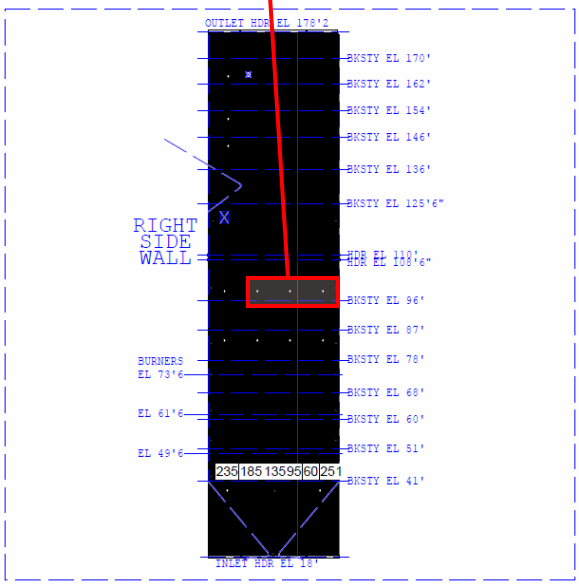
Cause: Previous IR Damage
Appearance: Quench Cracked Tube

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 13

Located in the upper most IR band below the deflection arch, quenching indications were observed on approximately a total 50 tubes around the 1st, 2nd and 3rd IR ports.

At the 1st port there are 9 to the front of center and 8 to the rear. At the 2nd, 9 to the front of center and 8 to the rear, and at the 3rd, 8 tubes either side. It is recommended that the indications be ground to termination to determine the need for weld or replacement repairs. RWT values between .188" to .164" would indicate restoration and below .163" is replacement, per UDC criteria.



NOTE: The involved areas are marked off in 3' to 4' squares.

Work Order: _____ Status: Inspected

Gtrack v 3.5.3

Inspection Report

Station: Mitchell Unit: 2 Report Name: 11-Furnace Right Wall

Record: #149
Action: FURTHER RESEARCH REQUIRED-P2
Priority #: 2

Inspector: Brown M.

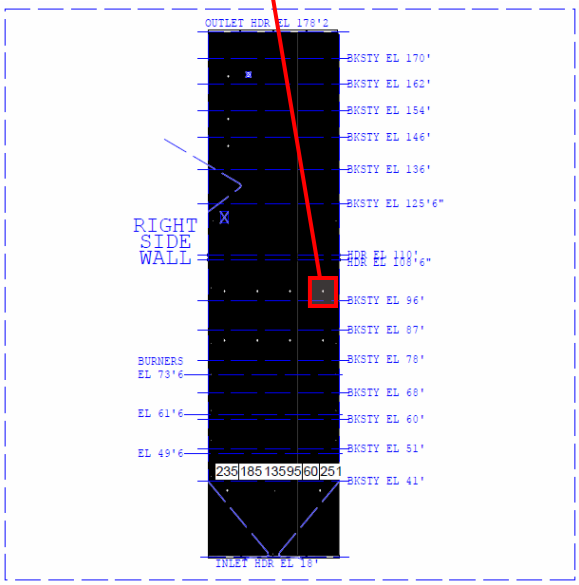
General location is Furnace Right Wall.

Cause: Previous IR Damage
Appearance: Quench Cracked Tube

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 13

Located on tubes 25-41 adjacent to IR-1, quenching indications were observed on an approximate total of 25 tubes. It is recommended that the indications be ground to termination to determine the need for weld or replacement repairs. RWT values between .188" to .164" would indicate restoration and below .163" is replacement, per UDC criteria.



NOTE: The involved areas are marked off in 3' to 4' squares.

Work Order: _____ Status: Inspected

Inspection Report

Station: Mitchell Unit: 2 Report Name: 11-Furnace Right Wall

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P R I O R I T Y # 3 R E P A I R S

==========

Record: #144
Action: MONITOR CLOSELY-P3
Priority #: 3

Inspector: Brown M.

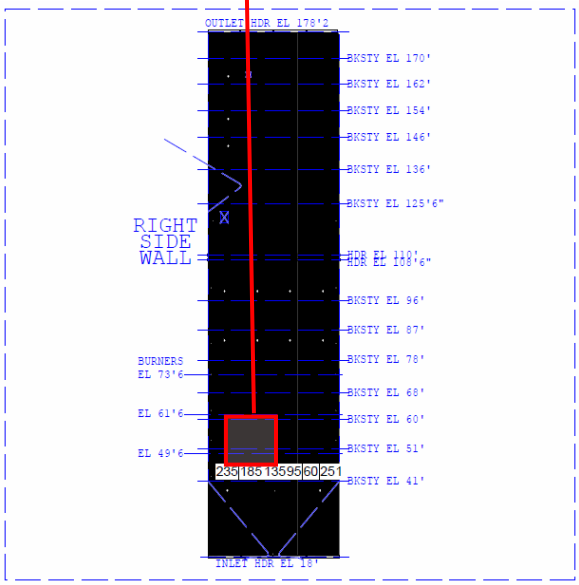
General location is Furnace Right Wall, Lower.

Cause: Fireside Corrosion
Appearance: Wastage

Material: 1.50" OD x .250" MWT x SA-213T2

The Final Risk Index Number is 5

Evidence of what appears like fireside corrosion was observed from about tube 115 to tube 200 located in an area approximately 4' down from the lowest existing weld overlay. At present, the wastage seems to be light with no action needed at this time. Monitor at future outages.



Work Order: _____ Status: Inspected
