Fireproofing Assessment and Summary

Inspection Date: December 2, 2014
Unit: FCCU
<table>
<thead>
<tr>
<th>#</th>
<th>RTF No.</th>
<th>Unit</th>
<th>Defect Location</th>
<th>Type</th>
<th>Defect Description</th>
<th>Field Evaluation Complete</th>
<th>Severity</th>
<th>Status</th>
<th>Construction Access</th>
<th>Scaffold Status</th>
<th>Estimated Repairs (sq. ft.)</th>
<th>Approximate Length (ft.)</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>FCCU-RTF-02</td>
<td>FCCU</td>
<td>South/East Column at Feed Nozzle Deck</td>
<td>Column</td>
<td>Severely cracked and delaminated fireproofing.</td>
<td>12/2/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
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<td>North/East Column at Feed Nozzle Deck</td>
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<td>No defects identified during inspection</td>
<td>12/2/2014</td>
<td>Low</td>
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<td>Easy</td>
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<td>67</td>
<td>FCCU-RTF-03</td>
<td>FCCU</td>
<td>Top Floor Beam North of Feed Nozzle Deck</td>
<td>Beam</td>
<td>Severely cracked and spalled fireproofing thru bottom of beam's flange. Moderate cracking throughout.</td>
<td>12/2/2014</td>
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<td>FCCU-RTF-04</td>
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<td>North/East Column at Slide Valve Deck</td>
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<td>N/A</td>
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<td>FCCU-RTF-05</td>
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<td>South/West Column at Slide Valve Deck</td>
<td>Column</td>
<td>Delaminated fireproofing thru lower 5 ft. of column. Moderate cracking throughout.</td>
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<td>Moderate</td>
<td>Unprotected</td>
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<td>70</td>
<td>FCCU-RTF-06</td>
<td>FCCU</td>
<td>Column west of Regenerator</td>
<td>High</td>
<td>Visible cracking throughout column (Hammer sound testing recommended). Spalled fireproofing thru top 6 ft of column.</td>
<td>12/2/2014</td>
<td>Moderate</td>
<td>Unprotected</td>
<td>Easy</td>
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<td>FCCU-RTF-07</td>
<td>FCCU</td>
<td>North/East Column of Reactor at Ground Floor</td>
<td>Column</td>
<td>Cracking thru bottom 7 ft. of south and east face of column.</td>
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<td>FCCU-RTF-08</td>
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<td>South/East Column of Reactor at Ground Floor</td>
<td>Column</td>
<td>Heavily cracked and delaminated fireproofing thru height of south/west corner of column.</td>
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<td>Easy</td>
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<td>73</td>
<td>FCCU-RTF-09</td>
<td>FCCU</td>
<td>South/West Column of Flue Gas Structure</td>
<td>Column</td>
<td>Heavily cracked and delaminated fireproofing thru middle ~ 16ft of west face of column. Unsound fireproofing throughout bottom 8 ft of column.</td>
<td>12/2/2014</td>
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<td>Unprotected</td>
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<td>FCCU-RTF-10</td>
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<td>1st N/S Tier Beam of Flue Gas Structure</td>
<td>Beam</td>
<td>Minor cracks thru bottom flange of beam. Early signs of leaking possible.</td>
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<td>75</td>
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<td>South Column of Flue Gas Structure</td>
<td>Column</td>
<td>Heavily cracked and delaminated fireproofing thru middle ~ 12 ft of west face of column (Possible falling hazard). Unsound fireproofing throughout bottom 6 ft.</td>
<td>12/2/2014</td>
<td>High</td>
<td>Unprotected</td>
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<td>108</td>
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<td>Column</td>
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<td>76</td>
<td>FCCU-RTF-12</td>
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<td>1st E/W Tier Beam of Flue Gas Structure</td>
<td>Beam</td>
<td>Minor cracks at top of beam flange.</td>
<td>12/2/2014</td>
<td>Low</td>
<td>Unprotected</td>
<td>Easy</td>
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<td>N/A</td>
<td>E/W</td>
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<td>FCCU</td>
<td>3rd Tier N/S Beam of Flue Gas Structure</td>
<td>Beam</td>
<td>Heavily cracked and delaminated fireproofing thru entire beam's length of west face. (Prominent falling hazard).</td>
<td>12/2/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
<td>96</td>
<td>16</td>
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<td>FCCU-RTF-14</td>
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<td>North/West Column of Flue Gas Structure</td>
<td>Column</td>
<td>Major cracks, spalling and unsound fireproofing thru bottom 4 ft of column.</td>
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<td>Easy</td>
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<td>79</td>
<td>FCCU-RTF-15</td>
<td>FCCU</td>
<td>FCCU #1 Steam Separator Skirt 93V-265</td>
<td>Vessel</td>
<td>Cracking throughout vessel skirt. Spalled fireproofing below manway.</td>
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<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
<td>76</td>
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<td>Approximate Length (ft.)</td>
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<td>81</td>
<td>FCU-RTF-16</td>
<td>FCCU</td>
<td>FCU-RTF-16</td>
<td>Smaller Slurrying Column</td>
<td>Column</td>
<td>Minor cracking thru west face of column.</td>
<td>12/3/2014</td>
<td>Moderate</td>
<td>Unprotected</td>
<td>Easy</td>
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<td>B</td>
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<td>82</td>
<td>FCU-RTF-17</td>
<td>FCCU</td>
<td>Steam Separator</td>
<td>FCCU Slurry Settler</td>
<td>Vessel</td>
<td>Fireproofing appears to be in good condition.</td>
<td>12/4/2014</td>
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<td>FCU-RTF-18</td>
<td>FCCU</td>
<td>FCCU High Pressure Condenser</td>
<td>FCCU Catalyst Storage Hopper</td>
<td>Column</td>
<td>Support legs appear to be in good condition.</td>
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<td>FCCU</td>
<td>FCCU Catalyst Storage Hopper</td>
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<td>Vessel appears to be in good condition.</td>
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<td>FCCU Support Legs</td>
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<td>FCU-RTF-21</td>
<td>1st Set of Columns E/W Pipe Rack</td>
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<td>FCU-RTF-22</td>
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<td>FCU-RTF-36</td>
<td>15th set of Columns E/W Pipe Rack</td>
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<td>Minor cracking thru middle of west face of column.</td>
<td>12/23/2014</td>
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<td>Easy</td>
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<td>RTF No.</td>
<td>Unit</td>
<td>Defect Location</td>
<td>Type</td>
<td>Defect Description</td>
<td>Field Evaluation Complete</td>
<td>Severity</td>
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<td>Construction Access</td>
<td>Scaffold Status</td>
<td>Estimated Repairs (sq.ft.)</td>
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<td>101</td>
<td>FCU-RTF-27</td>
<td>FCCU</td>
<td>93E-629 Support Structure Column</td>
<td>Column</td>
<td>Heavily deteriorated fireproofing throughout structure.</td>
<td>12/24/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
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<td>N/E Column of 93E-629 Column</td>
<td>Column</td>
<td>Heavily deteriorated fireproofing throughout column’s height (Prominent falling hazard). Spalled fireproofing has exposed column substrate.</td>
<td>12/25/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
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<td>Column</td>
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<td>103</td>
<td>FCU-RTF-29</td>
<td>FCCU</td>
<td>S/W Column of 93E-629 Column</td>
<td>Column</td>
<td>Severely deteriorated and delaminated fireproofing thru column’s height. Spalling of fireproofing throughout height of column.</td>
<td>12/26/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
<td>90</td>
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<td>104</td>
<td>FCU-RTF-40</td>
<td>FCCU</td>
<td>North Column West of Regenerator Column</td>
<td>Column</td>
<td>Severely cracked and spalled fireproofing thru top 5 ft of N/W corner of column. Delamination thru 40% of column.</td>
<td>12/27/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
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<td>FCU-RTF-41</td>
<td>FCCU</td>
<td>South Column West of Regenerator Column</td>
<td>Column</td>
<td>Severely cracked and spalled fireproofing thru top 6 ft of column.</td>
<td>12/28/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
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<td>42</td>
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<td>106</td>
<td>FCU-RTF-42</td>
<td>FCCU</td>
<td>Waste Heat Boiler Support west of Regenerator Beam</td>
<td>Beam</td>
<td>Severely cracked and spalled fireproofing at web of beam.</td>
<td>12/29/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
<td>56</td>
<td>12</td>
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<tr>
<td>107</td>
<td>FCU-RTF-43</td>
<td>FCCU</td>
<td>N/E Column at Stripper level Column</td>
<td>Column</td>
<td>Minor cracking thru top 5 ft of column above deck. Rest of column appears to be in good condition.</td>
<td>12/30/2014</td>
<td>Moderate</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
<td>35</td>
<td>5</td>
<td>Column</td>
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<tr>
<td>108</td>
<td>FCU-RTF-44</td>
<td>FCCU</td>
<td>S/E Column Stripper level Column</td>
<td>Column</td>
<td>Severely cracked and spalled fireproofing thru top 6 ft of column. Delamination at cracked section of fireproofing.</td>
<td>12/31/2014</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
<td>42</td>
<td>8</td>
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<tr>
<td>109</td>
<td>FCU-RTF-45</td>
<td>FCCU</td>
<td>South/West column at stripper level Column</td>
<td>Column</td>
<td>Minor cracking at top 1% of column.</td>
<td>1/1/2015</td>
<td>Low</td>
<td>Unprotected</td>
<td>Easy</td>
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<td>5</td>
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<tr>
<td>110</td>
<td>FCU-RTF-46</td>
<td>FCCU</td>
<td>N/W column at feed nozzle deck Column</td>
<td>Column</td>
<td>Severely cracked and spalled fireproofing thru top 10 ft. of column. Delaminated fireproofing at cracked section.</td>
<td>1/2/2015</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
<td>70</td>
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<tr>
<td>111</td>
<td>FCU-RTF-47</td>
<td>FCCU</td>
<td>S/W column at Feed nozzle deck Column</td>
<td>Column</td>
<td>Severely cracked and spalled fireproofing thru top 10 ft. of column. Delamination within severely cracked section.</td>
<td>1/3/2015</td>
<td>High</td>
<td>Unprotected</td>
<td>Easy</td>
<td>Not Installed</td>
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<td>12</td>
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</table>
**Concrete Fireproofing Assessment:** FCU- RTF - 01

**Location:** South/East Column at Feed Nozzle Deck

**Facility:** Marathon, Texas City  
**Unit:** FCCU  
**Latest Rev:** 0  
**Written By:** Anthony Rodriguez  
**Inspection Date:** 12/2/2014  
**Reviewed By:** William Turner

### Data:
- **Severity:** High  
- **Status:** Unprotected  
- **Construction Access:** Easy  
- **Scaffold:** Not Installed  
- **TAR Required:** No  
- **Orientation:** Column  
- **Approx. Length (ft.):** 12

### Evaluation:
- Severely cracked and delaminated fireproofing thru 12 ft. of west face of column.

### Repair:
- **Construction Notes:**
  1) Special care shall be taken not to damage the existing steel member(s) during demolition of damaged fireproofing.  
  2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.  
  3) New fireproofing to be installed.

---

**Disclaimer:** Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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</table>
Location: North/East Column at Feed Nozzle Deck

Concrete Fireproofing Assessment: FCU- RTF - 02

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: William Turner

Data:
Severity: Low
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft.): N/A

Evaluation:
Column appears to be in good condition.

Repair:

Construction Notes:
1) No recommended repairs.

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Concrete Fireproofing Assessment: FCU- RTF - 03

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: William Turner

Location: Top Floor Beam North of Feed Nozzle Deck

**Data:**
- Severity: High
- Status: Unprotected
- Construction Access: Easy
- Scaffold: Not Installed
- TAR Required: No
- Orientation: Beam
- Approx. Length (ft.): 15

**Evaluation:**
Severely cracked and spalled fireproofing thru entire bottom flange of beam’s length. Moderate cracking throughout beam. Early stages of leaching are also evident.

**Repair:**

**Construction Notes:**
1) Special care shall be taken not to damage the existing steel member(s) during demolition of spalled fireproofing.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing to be installed.

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Concrete Fireproofing Assessment: FCU- RTF - 04

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: William Turner

Location: North/East Column at Slide Valve Deck

**Data:**
- **Severity:** Low
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft.):** N/A

**Evaluation:**
Column appears to be in good condition.

**Repair:**

**Construction Notes:**
1) No recommended repairs.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment:  
FCU- RTF - 05  
Facility: Marathon, Texas City  
Unit: FCCU  
Inspection Date: 12/2/2014  
Written By: Anthony Rodriguez  
Reviewed By: William Turner

Location: South/West Column at Slide Valve Deck

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<tr>
<td>TAR Required:</td>
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<td>Approx. Length (ft.):</td>
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<tr>
<th>Evaluation:</th>
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<tbody>
<tr>
<td>Delaminated fireproofing thru lower 3 ft. of column. Moderate cracking throughout column. Hammer testing revealed delamination of fireproofing is specific to specified location (lower 3 ft.).</td>
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<tr>
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<tbody>
<tr>
<td>Construction Notes:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Special care shall be taken not to damage the existing steel member(s) during demolition of delaminated fireproofing ~ 3ft.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) New fireproofing shall be installed.</td>
<td></td>
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Concrete Fireproofing Assessment:  
FCU- RTF - 06

Facility: Marathon, Texas City  
Unit: FCCU

Latest Rev: 0  
Written By: Anthony Rodriguez

Inspection Date: 12/2/2014  
Reviewed By: William Turner

Location: Column west of Regenerator

Data:  
Severity: Moderate  
Status: Unprotected  
Construction Access: Easy  
Scaffold: Not Installed  
TAR Required: No  
Orientation: Column  
Approx. Length (ft.): 6

Evaluation:  
No arms-length inspection possible. Visible cracking throughout column (Hammer sound testing recommended). Spalled fireproofing thru top 6 ft. of east face of column.

Repair:  

Construction Notes:  
1) Special care shall be taken not to damage the existing steel member(s) during demolition.  
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.  
3) New fireproofing shall be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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<td>12/5/14</td>
<td>DJS</td>
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</table>
Data:
Severity: Low
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft.): 7

Evaluation:
Visible cracking thru bottom 7 ft. of south and east face of column. Rest of column appears to be in good condition. Sound fireproofing throughout column.

Repair:
Construction Notes:
1) Caulk cracks to prevent water ingress.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.
Concrete Fireproofing Assessment:

**Facility:** Marathon, Texas City  
**Unit:** FCCU  
**Latest Rev:** 0  
**Written By:** Anthony Rodriguez  
**Inspection Date:** 12/2/2014  
**Reviewed By:** William Turner

**Location:** South/East Column of Reactor at Ground Floor

---

**Data:**
- **Severity:** High  
- **Status:** Unprotected  
- **Construction Access:** Easy  
- **Scaffold:** Not Installed  
- **TAR Required:** No  
- **Orientation:** Column  
- **Approx. Length (ft.):** 12

**Evaluation:**
- Heavily cracked and delaminated fireproofing thru height of south/east corner of column (Possible falling hazard).

**Repair:**

**Construction Notes:**
1. Special care shall be taken not to damage the existing steel member(s) during demolition of heavily cracked fireproofing ~12 ft.
2. Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3. New fireproofing to be installed.

---

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Concrete Fireproofing Assessment: FCU- RTF - 09

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: South/West Column of Flue Gas Structure

**Data:**
- **Severity:** High
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft.):** 24

**Evaluation:**
Heavily cracked and delaminated fireproofing thru middle ~ 16 ft. of west face
(Possible falling hazard). Unsound fireproofing throughout bottom 8ft. of column.

**Repair:**

**Construction Notes:**
1) Special care shall be taken not to damage the existing steel member(s) during demolition of delaminated fireproofing.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing shall be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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</table>
Location: 1st N/S Tier Beam of Flue Gas Structure

Data:
- Severity: Low
- Status: Unprotected
- Construction Access: Easy
- Scaffold: Not Installed
- TAR Required: No
- Orientation: Beam
- Approx. Length (ft.): N/A

Evaluation:
Minor cracking thru bottom flange of beam. Beam bottom appears to be exhibiting early stages of leaching.

Repair:
Construction Notes:
1) No recommended repairs.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.
Location: South Column of Flue Gas Structure

**Data:**
- **Severity:** High
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft.):** 12

**Evaluation:**
- Heavily cracked and delaminated fireproofing thru middle ~ 12 ft. of west face of column (Possible falling hazard).
- Unsound fireproofing throughout bottom 6ft. of column.

**Repair:**

**Construction Notes:**
1) Special care shall be taken not to damage the existing steel member(s) during demolition of heavily cracked and delaminated fireproofing.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing shall be installed.

**DISCLAIMER:** Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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</table>
Location: 1st E/W Tier Beam of Flue Gas Structure

**Data:**
- **Severity:** Low
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Beam
- **Approx. Length (ft.):** N/A

**Evaluation:**
Minor cracks throughout entire top flange of beam’s length.

**Repair:**

**Construction Notes:**
1) Caulk cracking to prevent water ingress.

---

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.
Concrete Fireproofing Assessment: FCU- RTF - 13
Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: William Turner

Location: 3rd Tier N/S Beam of Flue Gas Structure

<table>
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<tr>
<th>Data:</th>
<th>Evaluation:</th>
<th>Repair:</th>
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</table>
| Severity: High              | Heavily cracked and delaminated fireproofing thru entire beam’s length of the west face (Prominent falling hazard). | **Construction Notes:**
| Status: Unprotected         |                                                                             | 1) Special care shall be taken not to damage the existing steel member(s) during demolition.
| Construction Access: Easy   |                                                                             | 2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
| Scaffold: Not Installed     |                                                                             | 3) New fireproofing shall be installed.              |
| TAR Required: No            |                                                                             |                                                    |
| Orientation: Beam           |                                                                             |                                                    |
| Approx. Length (ft.): 16    |                                                                             |                                                    |

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspection and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 14

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: North/West Column of Flue Gas Structure

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft.): 4

Evaluation:
Major cracks, spalling and unsound fireproofing thru bottom 4 ft. of column.

Repair:

Construction Notes:
1) Special care shall be taken not to damage the existing steel member(s) during demolition of delaminated fireproofing ~ 4 ft.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing shall be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 15

Location: FCCU #1 Steam Separator Skirt 93V-265

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Clint Stapleton
Reviewed By: Anthony Rodriguez

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

Data:
Severity: Moderate
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Vessel
Approx. Length (ft): 4’
6’ dia.

Evaluation:
Visible cracking throughout vessel skirt. Hammer sound testing provided no concerns for delamination. Spalled fireproofing below manway.
Note: (Sand and Cement Construction).

Repair:
Construction Notes:
1) Special care shall be taken not to damage the existing vessel substrate during demolition of spalled fireproofing below manway.
2) Vessel substrate shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing shall be installed.

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Concrete Fireproofing Assessment: FCU- RTF - 16
Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: Slurry Settler 93V-272 Support Columns

<table>
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<tr>
<th>Data:</th>
<th>Evaluation:</th>
<th>Repair:</th>
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<tr>
<td>Severity: Moderate</td>
<td>Minor cracking thru west face of column. Spalled fireproofing thru top 2 ft. of west corner of column. Rest of column appears to be in good condition. Note: (Sand and Cement Construction).</td>
<td>Construction Notes: 1) Special care shall be taken not to damage the existing steel member(s) during demolition of spalled fireproofing ~ 2ft. 2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented. 3) New fireproofing shall be installed.</td>
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<tr>
<td>Status: Unprotected</td>
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<td>Construction Access: Easy</td>
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<td>Orientation: S/W</td>
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<td>Approx. Length (ft): 2</td>
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Concrete Fireproofing Assessment: FCU- RTF - 17

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: FCCU Steam Separator # 2 93V Skirt

Evaluation
Vessel skirt appears to be in good condition.
Note: (Sand and Cement Construction).

Repair:
Construction Notes:
1) No recommended repairs.

Data:
Severity: Low
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: N/E
Approx. Length (ft): 4’ 6’dia.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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</table>
**Concrete Fireproofing Assessment:** FCU- RTF - 18

**Facility:** Marathon, Texas City  
**Unit:** FCCU  
**Inspection Date:** 12/2/2014

**Location:** FCCU Catalyst Skirt

**Data:**
- **Severity:** Low
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** N/W
- **Approx. Length (ft):** 14’ 16’ dia.

**Evaluation:**
Catalyst storage hoppers appear to be in very good condition.

Note: (Sand and Cement Construction).

**Repair:**

**Construction Notes:**
1) No recommended repairs.

---

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Concrete Fireproofing Assessment: FCU- RTF - 19

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Written By: Clint Stapleton
Reviewed By: Anthony Rodriguez

Location: FCCU High Pressure Hydraulic 93V-260 Legs

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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<th>Data:</th>
<th>Evaluation:</th>
<th>Repair:</th>
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</table>
| Severity: Moderate | Support legs appear to be in good condition.     | Construction Notes:
| Status: Unprotected| Note: (Sand and Cement Construction).            | 1) No recommended repairs. |
| Construction Access: Easy |                                  |                  |
| Scaffold: Not Installed |                                  |                  |
| TAR Required: No    |                                  |                  |
| Orientation: Column |                                  |                  |
| Approx. Length (ft): 5’x 8”x 8” |                                  |                  |

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Location: Sump Condenser 93V-273

Concrete Fireproofing Assessment: FCU- RTF - 20

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Data:
- **Severity:** Low
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Vessel
- **Approx. Length (ft):** 8’14’dia.

Evaluation

Vessel skirt appears to be in good condition.
Note: (Sand and Cement Construction).

Repair:

**Construction Notes:**
1) No recommended repairs.

---

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Concrete Fireproofing Assessment: FCU- RTF - 21

Facility: Marathon, Texas City  
Latest Rev: 0  
Unit: FCCU  
Written By: Clint Stapleton  
Inspection Date: 12/2/2014  
Reviewed By: Anthony Rodriguez

Location: FCCU Pipe Support East of 93V-258

Data:
Severity: High  
Status: Unprotected  
Construction Access: Easy  
Scaffold: Not Installed  
TAR Required: No  
Orientation: Column  
Approx. Length (ft): 13’ x 16” x 16”

Evaluation:
Major cracking and delamination thru entire height ~ 13 ft. of north and west face of support column.  
Note: (Sand and Cement Construction).

Repair:
Construction Notes:  
1) Special care shall be taken not to damage the existing steel member(s) during demolition of delaminated fireproofing 13 ft.  
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.  
3) New fireproofing to be installed.

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</table>
Location: Pipe Support North East of 93V-259

<table>
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<tr>
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<tbody>
<tr>
<td>Severity: High</td>
<td>Severe cracking and delamination of fireproofing thru bottom ~ 4ft. of the North/East corner of the support column. Note: (Sand and Cement Construction).</td>
<td>Construction Notes: 1) Special care shall be taken not to damage the existing steel member(s) during demolition of severely cracked and delaminated fireproofing ~ bottom 4ft. 2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented. 3) New fireproofing to be installed.</td>
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<tr>
<td>Approx. Length (ft): 14’ x 16” x 16”</td>
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| Rev History | |
|-------------|---|---|---|
| Rev | Description | Date | Approver |
| 0 | IFC | 08/21/2014 | AJR |
| 1 | IFC | 12/5/2014 | DJS |
Concrete Fireproofing Assessment:  FCU- RTF - 23

Facility: Marathon, Texas City  Latest Rev: 0
Unit: FCCU  Written By: Skipper Turner
Inspection Date: 12/2/2014  Reviewed By: Anthony Rodriguez

Location: 1st Set of Columns East-West Pipe Rack

Data:
Severity: Low
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft): 12” x 12” x 20’

Evaluation:
Minor cracking thru middle of west face of column. Hammer sound testing provided no concerns for delamination. Rest of column in good condition.
Note: (Sand and Cement Construction).

Repair:
Construction Notes:
1) Caulk cracks to prevent water ingress.

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Location: 1st Set of Horizontals East-West Pipe Rack

Concrete Fireproofing Assessment: FCU- RTF - 24

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Skipper Turner
Reviewed By: Anthony Rodriguez

Data:
Severity: Low
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: E/W Pipe Rack
Approx. Length (ft):
3 @ 12”x 12” x 3’

Evaluation:
Major cracking and delamination thru height of column. Severe cracking thru middle 3 ft. of lower beam.
Note: (Sand and Cement Construction).

Repair:

Construction Notes:
1) Special care shall be taken not to damage the existing steel member(s) during demolition of damaged fireproofing.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing to be installed.

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Concrete Fireproofing Assessment:  
FCU- RTF - 25

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: 2nd Set of Columns East-West Pipe Rack

**Data:**
Severity: Low  
Status: Unprotected  
Construction Access: Easy  
Scaffold: Not Installed  
TAR Required: No  
Orientation: E/W Pipe Rack  
Approx. Length (ft): 2 @ 18” x 18” x 16’

**Evaluation:**
Minor cracking thru height of both columns.  
Hammer sound testing provided no concerns for delamination of fireproofing. Columns appear to be in good condition.  
Note: (Solid Concrete Construction).

**Repair:**
Construction Notes:  
1) No recommended repairs.

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</table>
**Concrete Fireproofing Assessment:** FCU- RTF - 26

**Facility:** Marathon, Texas City  
**Unit:** FCCU  
**Inspection Date:** 12/2/2014

**Location:** 3rd Set of Columns East-West Pipe Rack

---

**Data:**

- **Severity:** Low
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft):** 18” x 18” x 16’

---

**Evaluation:**

- Minor cracking throughout columns.
- Hammer sound testing provided no concerns for delamination. Columns appear to be in good condition.
- **Note:** (Solid Concrete Construction).

---

**Repair:**

- **Construction Notes:**
  - 1) No recommended repairs.

---

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Location: 4th Set of Columns East-West Pipe Rack

**Data:**
- **Severity:** Low
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft):** 18” x 18” x 16’

**Evaluation:**
- Minor cracking throughout columns.
- Hammer testing provided no concerns for delamination. Columns appear to be in good condition.
- Note: (Solid Concrete Construction).

**Repair:**
- **Construction Notes:**
  1) No recommended repairs.

---

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Concrete Fireproofing Assessment: FCU- RTF - 28

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: 5th Set of Columns East-West Pipe Rack

**Data:**
- **Severity:** Low
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft):** 18” x 18” x 16’

**Evaluation:**
- Minor cracking throughout columns.
- Hammer testing provided no concerns for delamination of fireproofing. Columns appear to be in good condition.
- Note: (Solid Concrete Construction).

**Repair:**
- **Construction Notes:**
  1) No recommended repairs.

---

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Concrete Fireproofing Assessment:  FCU- RTF - 29

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: 10th Set of Columns East-West Pipe Rack

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft): 18” x 18” x 16’

Evaluation:
Severe cracking and delaminated fireproofing through entire column’s height ~ 16 ft. of west face. Spalling of fireproofing thru middle 4 ft. of column.
Note: (Appears to be Solid Concrete Construction).

Repair:
Construction Notes: 1) Engineering needed to provide recommended repair procedure.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Sheet 29/30
Concrete Fireproofing Assessment: FCU- RTF - 30
Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014
Latest Rev: 0
Written By: Skipper Turner
Reviewed By: Anthony Rodriguez

Location: 7th Set of Columns North-South Pipe Rack

**Data:**
- **Severity:** High
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft):** 20.5” x 20.5” x 16’

**Evaluation:**
Severe cracking and delaminated fireproofing thru top 3 ft. of column
(Possible falling hazard).
Note: (Appears to be Solid Concrete Construction).

**Repair:**
**Construction Notes:**
1) Engineering needed to provide recommended repair procedure.

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Concrete Fireproofing Assessment: FCU- RTF - 31

Location: 8th Set of Columns North-South Pipe Rack

**Data:**
- **Severity:** High
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft.):** 20.5” x 20.5” x 16’

**Evaluation:**
Heavy cracking and delaminated fireproofing thru top 2 ft. of west face of column.
Note: (Appears to be Solid Concrete Construction).

**Repair:**
**Construction Notes:**
1) Engineering needed to provide recommended repair procedure.

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</table>
Concrete Fireproofing Assessment: FCU- RTF - 32
Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: 4th Center Floor Horizontal Fin Fan Structure

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: E/W
Approx. Length (ft): 20’

Evaluation:
No arms-length inspection possible. Multiple locations contain no fireproofing on bottom of beam.
Note: (Sand and Cement Construction).

Repair:

Construction Notes:
1) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
2) New fireproofing to be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 33

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Skipper Turner
Reviewed By: Anthony Rodriguez

Location: 4th South Stanchion Fin Fan Structure

<table>
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<tr>
<th>Data:</th>
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<th>Repair: Construction Notes:</th>
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</table>
| Severity: High     | Severe cracking thru height of north face of column. Hammer testing of bottom 8 ft. revealed concerns for delamination. Note: (Sand and Cement Construction). | 1) Special care shall be taken not to damage the existing steel member(s) during demolition of delaminated fireproofing.  
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.  
3) New fireproofing to be installed. |
| Status: Unprotected|                                                                              |                                                                                             |
| Construction Access: Easy |                                                                              |                                                                                             |
| Scaffold: Not Installed |                                                                              |                                                                                             |
| TAR Required: No   |                                                                              |                                                                                             |
| Orientation: Column|                                                                              |                                                                                             |
| Approx. Length (ft): 20” x 20” |                                                                              |                                                                                             |

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 33

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: 4th Center North-South Floor Horizontal Fin Fan Structure

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: E/W
Approx. Length (ft): 20’

Evaluation:
No arms-length inspection possible. Multiple locations contain no fireproofing on bottom of beam.
Note: (Sand and Cement Construction).

Repair:

Construction Notes:
1) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
2) New fireproofing to be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 35

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: 1st Set of Columns Pump Alley Pipe Rack

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft): 20” x 20” x 20’

Evaluation:
Major cracking and delaminated fireproofing thru height of west face of column.
Note: Additional Columns within alley are in similar or worse condition.
(Sand and Cement Construction).

Repair:
Construction Notes:
1) Special care shall be taken not to damage the existing steel member(s) during demolition.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing to be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 36

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Skipper Turner
Reviewed By: Anthony Rodriguez

Location: 93V-411 Horizontal Beams

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: N/S
Approx. Length (ft.): 20” x 20” x 20’

Evaluation:
Heavily deteriorated fireproofing throughout beam’s entire length (Possible falling hazard).
Note: West column of structure in similar condition.

Repair:
Construction Notes:
1) Special care shall be taken not to damage the existing steel member(s) during demolition.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing to be installed.

Disclaimers:
Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 37

Facility: Marathon, Texas City  
Unit: FCCU  
Inspection Date: 12/2/2014  
Latest Rev: 0  
Written By: Skipper Turner  
Reviewed By: Anthony Rodriguez

Location: 93E-629 Support Structure

<table>
<thead>
<tr>
<th>Data:</th>
<th>Evaluation:</th>
<th>Repair:</th>
</tr>
</thead>
</table>
| Severity: High | Heavily deteriorated fireproofing throughout structure.  
| Status: Unprotected | Note: All column’s and beams of structure in similar or worse condition.  
| Construction Access: Easy | (Sand and Cement Construction). | Construction Notes:                                      |
| Scaffold: Not Installed |                                           | 1) Special care shall be taken not to damage the existing steel member(s) during demolition.  
| TAR Required: No |                                           | 2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.  
| Orientation: Column |                                           | 3) New fireproofing to be installed. |
| Approx. Length (ft.): 20”x 20” x 8’ |                                           |                                              |

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 38

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: North/East Column of 93E-629 Structure

<table>
<thead>
<tr>
<th>Data:</th>
<th>Evaluation:</th>
<th>Repair:</th>
</tr>
</thead>
</table>
| Severity: High | Heavily deteriorated fireproofing throughout column’s height (Prominent falling hazard). Spalled fireproofing has exposed column substrate. Note: (Lite Weight Construction). | **Construction Notes:**
1) Special care shall be taken not to damage the existing steel member(s) during demolition.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing to be installed. |
| Status: Unprotected | | |
| Construction Access: Easy | | |
| Scaffold: Not Installed | | |
| TAR Required: No | | |
| Orientation: Column | | |
| Approx. Length (ft.): 16”x 16” x 15’ | | |

| Rev History |
|-------------|---------|--------|
| Rev | Description | Date   | Approver |
| 0   | IFC      | 08/21/2014 | AJR     |
| 1   | IFC      | 12/5/2014  | DJS     |

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.
**Location:** South/West Column of 93E-629 Structure

---

**Concrete Fireproofing Assessment:** FCU- RTF - 39

- **Facility:** Marathon, Texas City
- **Unit:** FCCU
- **Inspection Date:** 12/2/2014

---

**Data:**
- **Severity:** High
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** Column
- **Approx. Length (ft.):** 16” x 16” x 15’

---

**Evaluation:**
- Severely cracked and delaminated fireproofing thru column’s height
- (Prominent falling hazard). Spalling of fireproofing throughout height of column.
- Note: (Sand and Cement Construction).

---

**Repair:**

**Construction Notes:**
1) Special care shall be taken not to damage the existing steel member(s) during demolition.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing to be installed.

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Concrete Fireproofing Assessment: FCU- RTF - 40
Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014
Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: William Turner

Location: North Column West of Regenerator

![General View](image1)
![Detail](image2)

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<th>Evaluation:</th>
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<tr>
<td>Severity: High</td>
<td>Severely cracked and spalled fireproofing thru top 5 ft. of North/West corner of column. Hammer testing revealed delamination thru 40% of column above deck. Noticeable corrosion on exposed steel.</td>
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<tr>
<td>Status: Unprotected</td>
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<tr>
<td>Construction Access: Easy</td>
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<tr>
<td>Scaffold: Not Installed</td>
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<tr>
<td>TAR Required: No</td>
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<tr>
<td>Orientation: Column</td>
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</tr>
<tr>
<td>Approx. Length (ft.): 5</td>
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</table>

**Construction Notes:**
1) Special care shall be taken not to damage the existing steel member(s) during demolition of severely damaged fireproofing ~ 5 ft.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing shall be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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</table>
Location: South Column West of Regenerator

Concrete Fireproofing Assessment: FCU- RTF - 41

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: Skipper Turner

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft.): 6

Evaluation:
Severely cracked and spalled fireproofing thru top 6 ft. of column. Hammer testing revealed concerns for delamination.

Repair:

Construction Notes:
1) Special care shall be taken not to damage the existing steel member(s) during demolition of delaminated fireproofing ~ 6ft.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing shall be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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</table>
Location: Waste Heat Boiler Support West of Regenerator

**Data:**
- **Severity:** High
- **Status:** Unprotected
- **Construction Access:** Easy
- **Scaffold:** Not Installed
- **TAR Required:** No
- **Orientation:** N/S
- **Approx. Length (ft.):** 12

**Evaluation:**
- No arms-length inspection possible.
- Severely cracked and spalled fireproofing at web of beam. Possible delamination thru length of beam.
- Note: Entire support structure in similar condition.

**Repair:**
- **Construction Notes:**
  1) Special care shall be taken not to damage the existing steel member(s) during demolition.
  2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
  3) New fireproofing shall be installed.

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Concrete Fireproofing Assessment:  FCU- RTF - 43
Facility: Marathon, Texas City  Latest Rev: 0
Unit: FCCU  Written By: Anthony Rodriguez
Inspection Date: 12/2/2014  Reviewed By: Skipper Turner

Location: North/East Column Stripper Level

Data:
Severity: Moderate
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft.): 5

Evaluation:
Minor cracking thru top 5 ft. of column above deck of Stripper Level. Hammer testing revealed cracked section to be in good condition. Rest of column appears to be in good condition.

Repair:
Construction Notes:
1) Remove debris from crack.
2) Caulk crack to prevent water ingress.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment:

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014

Location: South East Column Stripper Level

**General View**

**Detail**

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<tbody>
<tr>
<td>Severity: High</td>
<td>Severely cracked and spalled fireproofing thru top 6 ft. of column at stripper level. Hammer testing revealed delamination within cracked section.</td>
<td>Construction Notes: 1) Special care shall be taken not to damage the existing steel member(s) during demolition. 2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented. 3) New fireproofing shall be installed.</td>
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<td>Construction Access: Easy</td>
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<td>TAR Required: No</td>
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<tr>
<td>Orientation: Column</td>
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<tr>
<td>Approx. Length (ft): 6</td>
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| Rev | Description | Date     | Approver |
| 0   | IFC       | 08/21/2014 | AJR      |
| 1   | IFC       | 12/5/2014  | DJS      |
Location: South/West Column at Stripper Level

**Concrete Fireproofing Assessment:**

**Facility:** Marathon, Texas City  
**Unit:** FCCU  
**Inspection Date:** 12/2/2014

**Latest Rev:** 0  
**Written By:** Anthony Rodriguez  
**Reviewed By:** Skipper Turner

---

**Data:**
- **Severity:** Low  
- **Status:** Unprotected  
- **Construction Access:** Easy  
- **Scaffold:** Not Installed  
- **TAR Required:** No  
- **Orientation:** Column  
- **Approx. Length (ft.):** 12

**Evaluation:**
- Minor cracking at top 1 ft. of column.  
- Hammer test revealed no concerns for delamination.  
- Note: Remaining column appears to be in good condition.

**Repair:**
- **Construction Notes:**
  1) Remove debris from cracks.  
  2) Caulk cracking to prevent water ingress.

---

**DISCLAIMER:** Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 46
Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014
Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: Skipper Turner

Location: North/West Column at Feed Nozzle Deck

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft.): 10

Evaluation:
Severely cracked and spalled fireproofing thru top 10 ft. of column. Hammer testing revealed delamination of fireproofing within heavily cracked section.

Repair:

Construction Notes:
1) Special care shall be taken not to damage the existing steel member(s) during demolition of severely cracked fireproofing ~ 10 ft.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing shall be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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Concrete Fireproofing Assessment: FCU- RTF - 47

Facility: Marathon, Texas City
Unit: FCCU
Inspection Date: 12/2/2014
Latest Rev: 0
Written By: Anthony Rodriguez
Reviewed By: Skipper Turner

Location: South/West Column at Feed Nozzle Deck

Data:
Severity: High
Status: Unprotected
Construction Access: Easy
Scaffold: Not Installed
TAR Required: No
Orientation: Column
Approx. Length (ft.): 12

Evaluation:
Severely cracked and spalled fireproofing thru top 10 ft. of column. Hammer testing revealed delamination of fireproofing within heavily cracked section. Visible signs of poor consolidation during installation.

Repair:

Construction Notes:
1) Special care shall be taken not to damage the existing steel member(s) during demolition of delaminated fireproofing ~ 10ft.
2) Structural Steel shall be inspected by the Engineer prior to installation of reinforcement. If necessary, steel repairs will be designed and implemented.
3) New fireproofing to be installed.

DISCLAIMER: Note that the evaluation and repair recommendations are as of the date of the inspections and are based on the access available at the time of inspection. When access is made available and field conditions do not coincide with this evaluation summary or additional assistance is required, please contact JT Thorpe & Son Fireproofing Division at 412-787-1705.

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