FACILITIES QA/QC AUDIT PROCESS

Date: January 10, 2011

Revision No.000

By: Richard Lynn P.E.
Director of QA/QC
Chief Facilities Engineer
I. Purpose:
   A. The Texas A&M Health Science Center is developing a plan to provide in depth review and observation of all of its facilities, state wide, to ensure each meet the necessary standards set forth to support the Mission of the University.

      1. To evaluate the condition of each facility and assess ability to support the Mission.
      2. Identify deficiencies found in each building system.
      3. Validate requests for funding of building repairs and upkeep.
      4. Provide recommendations for corrective actions to bring buildings up to the standard.
      5. Provide periodic inspections of each facility and evaluate how corrective actions have been implemented.

II. Schedule / Frequency
   A. Initial inspections of each facility will take place by the end of the Fiscal year 2011.
   B. Initially the process check list will be provided to the building coordinators, giving them advance notice of the type of inspections planned for their facility.
   C. The intent would be to re-inspect each facility once a year to:

      1. Determine if each previous deficiency was corrected properly.
      2. Look for any new deficiencies and or follow up on previous issues that may take time to expose the full impact of the problem.

III. Process
   A. The process of performing an inspection of a facility for QA/QC deficiencies involves an in-depth observation of the facility which would include onsite inspections of the facility.
   B. Inspection sheets for each major building system have been developed and more may be developed later. These inspection forms are included in appendix A of this outline. Currently sheets for the following systems have been developed:

      1. Structure – includes the building frame, skin, glazing and roof.
2. Mechanical – HVAC, ventilation, lab exhaust, and other mechanical systems except for Plumbing.

3. Plumbing – Includes domestic Water, hot and cold, sanitary sewers, lab waste, storm sewers, lab gasses and natural gas and fuel oil systems. Does not include fire sprinkler systems as they are handled by The Life Safety Director.

4. Electrical – Includes normal and emergency Power and lighting distribution systems. This does not include voice data as they are under the direction of the University IT department. Also does not include fire alarm and signaling systems.

C. A list of deficiencies is listed at the bottom of each inspection form for the specific system. This is not intended to be an all inclusive list but to be an initial list of items to inspect. Additional deficiencies may be added to the sheets at a later date as the process improves.

D. Inspection sheets for other systems may be developed as they are necessary.

IV. Staff

A. The process will be managed by the Director of QA/QC who will work closely with the building coordinator.

1. Additional staff may be utilized on a short term basis depending on the size and location of the facility.

2. Specialty inspectors or staff may be added in the future to provide a more details look at an individual issue depending on the system it is associated with.

3. Local building maintenance staff will be used during all inspections since they would be the most familiar with the system layout and where documentation exists.

B. All questions regarding the process or program should be directed to the Director of QA/QC:

1. Mr. Richard Lynn P.E. LEED\textsuperscript{AP}
979- 436-9010 Office
979- 450-6621 Mobile
lynn@tamhsc.edu
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Comments</th>
<th>Recommendations</th>
<th>Corrected - yes or no</th>
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<td>As Built Record Set of Drawings on file?</td>
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<tr>
<td>2</td>
<td>Record Set of As Built AutoCAD files available.</td>
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</table>

Possible deficiencies:

- A: Building Structure
- B: Structural Cracks
- C: Exposed Rebar
- D: Concrete Spalling
- E: Cracks or spalling
- F: Building shifting
- G: Water damage
- H: Biological debris
- I: 

Skin Type:

- Steel
- Concrete

Roof Type:

- Nominal Flr Rating
- Building Condition

Possible defects:

- Cracks or spalling in mortar joints
- Loose Bricks or stone
- Rust Stains
- Ponding water
- Air pockets or bubbles in roof
- Large Number of patches

Windows:

- Type

Floor:

- Basement
- Number of floors
- Floor Thickness

Structural:

- Year Built
- Steel/Concrete
- Floor construction

Campus:

- Building

Facilities Quality Control

Building Coordinator

Inspection Report

Campus

Address

Building

DATE

INSPECTED BY

INSPECTION REPORT

As Built Record Set of Drawings on file?

Record Set of As Built AutoCAD files available.
### Facilities Quality Control Inspection Report

**Campus:**

**Building:**

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Year Built</th>
<th>Chiller Plant</th>
<th>Boiler Plant</th>
<th>Control System Type</th>
<th>Lab Control</th>
<th>Main Air System</th>
<th>Number of Air handlers</th>
<th>Pumps</th>
<th>Towers</th>
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**Item** | **Description** | **Comments** | **Recommendations** | **Corrected - yes or no**
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1 | As Built Record Set of Drawings on file? | | | |
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**Possible deficiencies:**

- A: Pumps and Heat Exchangers:
  - Heaters - Boilers:
    - Model #
    - Serial #
    - Condition of drive components
    - Identification - Piping and Valves
      - Identification - Piping
      - Identification - Valves
    - Condition of Control Panels
      - Identification - Control Panels
    - Vibration Isolation - Broken or damaged
      - Vibration Isolation - Broken or damaged
    - Ammount of Fuel oil on hand
      - Condition of Control Valves
- Condition of control valves
  - Last time reserve fuel was filtered.
  - Condition of control valves
- Valve test
  - Heat Recovery devices
  - Last date of relief valve test
  - Last date of relief valve test

**BUILDING**

**FACILITIES QUALITY CONTROL**

**BUILDING COORDINATOR**

**ADDRESS**

**INSPECTED BY**

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<thead>
<tr>
<th>Plumbing</th>
<th>Year Built</th>
<th>Utility Supplier</th>
<th>Heater Boiler Plant</th>
<th>Control System Type</th>
<th>Reverse Osmosis System</th>
<th>Compressed air</th>
<th>Vacuum Pumps</th>
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**Record Set of As Built AutoCAD files available.**

**Condition of drive components**

**Condition of drive components**

**Condition of drives or starters**

**Condition of drives or starters**

**Condition of Control Panels**

**Condition of Control Panels**

**Vibration Isolation - Broken or damaged**

**Vibration Isolation - Broken or damaged**

**Ammount of Fuel oil on hand**

**Condition of Control Valves**

**Condition of Control Valves**

**Identification - Piping and Valves**

**Identification - Piping**

**Identification - Valves**

**Identification - Control Panels**

**Condition of Control Panels**

**Vibration Isolation - Broken or damaged**

**Vibration Isolation - Broken or damaged**

**Ammount of Fuel oil on hand**

**Condition of Control Valves**

**Condition of Control Valves**

**Last time reserve fuel was filtered.**

**Condition of Control Valves**

**Condition of Control Valves**

**Heat Recovery devices**

**Last date of relief valve test**

**Last date of relief valve test**

**Natural Gas system**
## Facilities Quality Control Inspection Report

### Campus
- CAMPUS
- Health Science Center

### Building Coordinator
- BUILDING COORDINATOR

### Inspected By
- INSPECTED BY

### Address
- ADDRESS

### Electrical
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### Possible Deficiencies:
- A. Switchboards and panelboards
- Transformers
- Special Devices or gear
- Lighting Control

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Lamp types used