Basis of Design

This section applies to the selection and installation of coils.

**Design Criteria**

- Provide detail drawings of cooling coil drain pan traps. For AHUs, assure that the height of the drip pan connection is sufficient for a trap of the specified depth to clear the floor.
- Use condensate drain pan dimensions sufficient to catch all condensate off coil. Provide pan under coil and extend downstream of coil far enough to catch all condensate.

Design Evaluation

The following information is required to evaluate the design:

- **Schematic Design Phase**: Identify all system coils, and include coils in single line system flow diagrams, design calculations, and energy balances. Special occupancy zones must be called out and system coils identified.
- **Design Development Phase**: Provide updated single line system flow diagrams, equipment schedules, design calculations, and an outline of specifications.
- **Construction Document Phase**: Provide coil access and removal indications, final single line system flow diagrams, equipment schedules, design calculations, and specifications.

Products, Material and Equipment

- Provide non-freeze type steam coils with perforated inner distribution tubes with vertical tubes; each section should be individually trapped. Tube wall thickness must be 0.035 inches (minimum).
- For systems that require freeze protection, provide inhibited propylene glycol.
- At the high points in the water systems provide automatic air vents with a cast iron body, copper ball float and needle, or ball-type air valve. Provide manual air vents on zone heating coils. Provide low point drains on hydronic systems.
- Provide a maximum fin density for coils of 10 fins per inch and tube wall thickness of 0.035 inches (minimum).
- Locate and arrange air conditioning equipment for reasonable motor, filter, and coil/tube removal.

Installation, Fabrication and Construction

- Provide a hose end drain valve on each water coil.
- Locate all air heating and cooling coils so that water jet or steam cleaning may be employed on each side of each coil. Provide ductwork access panels on each side of each coil.
- Provide a balancing valve in the return piping from each individual coil.
- Provide isolation valves with rising stems or quarter turn valves at the inlet and outlet of each AHU or supply fan coil, or other major component. Locate valves so that each unit, and its control valve, can be serviced without draining an entire system or riser.
- Provide access panels in ceilings or partitions for servicing concealed coils.
- Provide a flow-measuring device such as a venturi in the coil piping of each supply fan.
• Indicate the required coil equipment access and removal space on the contract documents.

END OF DESIGN GUIDE SECTION