

Introduction

The design engineer and the CM's in-house mechanical and electrical coordinator will also outline the specific collection of equipment documents in a manner that will make seamless the compilation of the preventive maintenance (PM) work orders to populate the existing CMMS system so that the required work orders will be ready for day one of owner occupancy of the energy retrofitted chilled water equipment.

Source: <https://www.esmagazine.com/ext/resources/images/cover-images/0918-Facility-Files.pdf>

Starting Stage 1

Once the startup has been completed and the ATC subcontractor and third-party commissioning and testing, adjusting, and balancing (CxTAB) consultant has completed the water balancing work, the HVAC subcontractor will go through an automatic control system initial dry-run demonstration prior to the CM and his subcontractors demonstrating the system to the CxTAB consultant. The ATC subcontractor should also begin collecting system performance by trending pertinent HVAC system and equipment data by trending the following:

Trending

- Outdoor air dry bulb and wet bulb temperature
- in-room air dry bulb and wet bulb temperature
- chilled water supply and return temperature during the utility company's peak-load
- water supply and return temperature during the utility company's off-peak-load period
- alarms
- safety control points

Stage 2

Taking the same approach as the design engineering team, the building's O&M personnel will use a series of computer-generated touchscreen project checklists that allows them to confirm that the following facility files have been collected. This process should start at the beginning of construction and not at project closeout so that the facility files can be inputted into a CMMS work order system. Touchscreen O&M checklists should include:

Documentation & Instructions

The O&M staff will review the contractor-produced piping field fabrication/field coordination drawings prior to fabrication. Touchscreen service check-lists should include:

- Equipment shop drawings
- O&M manuals, parts list, and lubricants
- troubleshooting tips
- seasonal startup and shutdown instructions

3. Work Location

- Location of shutoff valves, ATC valves, and balancing valves
- Strainers
- Equipment and control devices
- Access for servicing equipment

Water Balancing the Chiller

The water balancing of the chiller, TES tank, and chilled water system along with the final TAB report will be included in the preventive maintenance work order system for rebalancing in a couple of years. In addition, the hydraulic modeling of the entire chilled water system will be updated after the final TAB report. This will require the CxTAB consultant to provide the water balancing reports along with the associated system flow diagrams noting quantities and pressures for rebalancing if necessary as part of the project closeout documents. Touchscreen training checklists should include:

Checklist

- Equipment
- System
- Automatic controls
- Energy management

