**This Prefunctional Checklist should be completed as part of startup and initial checkout of the equipment in preparation for Functional Performance testing.**

|  |  |
| --- | --- |
| PC: | **23 21 13** |
| **ITEM:** | **Hydronic Piping** |
| **ID:** |  |
| **AREA SERVED:** |  |

Form Filled Out By:

|  |  |  |
| --- | --- | --- |
|  | Name & Company | Date |
| GC |  |  |
| MC |  |  |
| EC |  |  |
| BC |  |  |
| CC |  |  |
| OR |  |  |
| A/E |  |  |
| CA |  |  |

GC = General Contractor; MC = Mechanical Contractor; EC = Electrical Contractor; BC = Balancing Contractor; CC = Controls Contractor; OR = Owner Representative; A/E = Architect/Engineer; CA = Commissioning Agent

XX = No Initials Required

# DOCUMENTATION VERIFICATION

Check if OK. Enter note number if deficient.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Item** | **GC** | **MC** | **EC** | **CC** | **OR** | **A/E** | **CA** |
| Product information submitted |  |  |  |  |  |  |  |
| Shop drawings submitted |  |  |  |  |  |  |  |
| Manufacturer’s installation instructions submitted |  |  |  |  |  |  |  |
| Factory test report submitted. |  |  |  |  |  |  |  |

# INSTALLATION VERIFICATION

**This checklist does not take the place of the manufacturer’s recommended checkout and startup procedures or report.**

Check if OK. Enter Outstanding Item Note number if deficient.

| **No** | **Item** | **GC** | **MC** | **EC** | **CC** | **OR** | **A/E** | **CA** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Pipe fittings complete |  |  |  |  |  |  |  |
| 2 | Pipes properly supported and spacing of hangers per specs |  |  |  |  |  |  |  |
| 3 | Seismic anchoring installed |  |  |  |  |  |  |  |
| 4 | Pipe alignment guides, anchors and expansion compensation devices installed in accordance with contract documents. Verify clearances for expansion devices. |  |  |  |  |  |  |  |
| 5 | Pipes properly insulated |  |  |  |  |  |  |  |
| 6 | Pipes properly labeled  |  |  |  |  |  |  |  |
| 7 | Strainers in place and clean |  |  |  |  |  |  |  |
| 8 | Isolation valves and balancing valves installed |  |  |  |  |  |  |  |
| 9 | Test ports (P/T) installed near all control sensors and as per spec |  |  |  |  |  |  |  |
| 10 | Flushing and cleaning plan submitted and approved  |  |  |  |  |  |  |  |
| 11 | Piping system properly flushed and cleaned and temporary piping removed |  |  |  |  |  |  |  |
| 12 | Flushing report submitted |  |  |  |  |  |  |  |
| 13 | 10% of strainers and Owner-selected low-point drains opened and witnessed by Owner to be clean. (List points checked below). |  |  |  |  |  |  |  |
| 14 | Piping pressure testing completed |  |  |  |  |  |  |  |
| 15 | Pressure test report submitted |  |  |  |  |  |  |  |
| 16 | Chemical treatment system or plan installed |  |  |  |  |  |  |  |
| 17 | Water treatment report submitted according to contract documents |  |  |  |  |  |  |  |
| 18 | No leaking apparent around fittings |  |  |  |  |  |  |  |
| 19 | Expansion tanks verified to not be air bound and system completely full of water. System completely purged of all air. |  |  |  |  |  |  |  |
| 20 | Air vents and bleeds at high points of systems functional |  |  |  |  |  |  |  |
| 21 | Valve labels permanently affixed |  |  |  |  |  |  |  |
| 22 | Valves installed in proper direction |  |  |  |  |  |  |  |
| 23 | No leaking apparent around valves |  |  |  |  |  |  |  |
| 24 | Flow control devices installed and calibrated |  |  |  |  |  |  |  |
| 25 | Valves stroke fully and easily and spanning is calibrated (see calibration section below). |  |  |  |  |  |  |  |
| 26 | Valves that require a positive shutoff are verified to not be leaking when closed at normal operating pressure |  |  |  |  |  |  |  |
| 27 | Temperature, pressure, flow gages and sensors installed.  |  |  |  |  |  |  |  |

# OUTSTANDING ITEMS

Note outstanding items in table below. Use numbers referenced above.

|  |  |  |
| --- | --- | --- |
| Resolved(Initial / Date) | **Note** | Description |
|  | **1.** |  |
|  | **2.** |  |
|  | **3.** |  |
|  | **4.** |  |
|  | **5.** |  |
|  | **6.** |  |
|  | **7.** |  |
|  | **8.** |  |
|  | **9.** |  |
|  | **10.** |  |

# FIELD NOTES

Fill in as appropriate.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |

# SIGN OFF

System / Equipment has been installed in accordance with the Contract Documents and is ready for Functional Testing.

|  |  |  |
| --- | --- | --- |
|  | **Signature** | **Date** |
| **Contractor’s Representative** |  |  |
| **A /E Representative** |  |  |
| **Commissioning Agent** |  |  |
| **Owner’s Representative** |  |  |

##### END OF CHECKLIST