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The sequence of Chilled Water System Flushing

Project No:	
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REVISION HISTORY	ISSUE DATE	DESCRIPTION	REVIEW / STATUS
00			

PREPARED BY:	REVIEWED & APPROVED BY:
QA QC ENGINEER	PROJECT ENGINEER

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1.0 The sequence of CHW System Flushing

- A. Isolate the floor branch pipes from the risers by valves at [Location Name Here] as shown in the attached sketch.
- B. Open all FCU valves [Location Name Here] and fill clean potable water.
- C. Pressure test the floor piping including FCUs and valve package connections. Offer for witnessing.
- D. Release the pressure but retain water in the floor branch circuit till the final flushing time.
- E. Repeat the above procedure for all the floor branches.
- F. Ensure that all floor branch valves are closed [Location Name Here]
- G. Pressure test the entire header pipes circuit including the risers (through Write Number of Risers here). Offer for witnessing.
- H. Drain the system (excluding floor branches – valves closed [Location Name Here] through drain valves provided at the bottom of risers and in the [Location] room (at the bottom of trench pipes below the entry point to [Location-room]).
- I. Refill the entire system with clean water.
- J. Ensure that the system is free of air by properly venting the system.
- K. Ensure that the heat exchanger valves at [Location Name Here] are closed and open the flushing bypass valve [Location Name Here] provided across the heat exchangers.
- L. Isolate the FAHU coil by keeping the 3-way valve [Location Name Here] in the bypass mode.
- M. Open the flushing bypass valve provided at the end of risers [Location Name Here]
- N. Start the secondary chilled water pumps (SP) and run for 2 hours.
- O. Drain the system as given in the Procedure.
- P. Clean all strainers.
- Q. Refill the entire system with clean water.
- R. Start and run the pumps.
- S. Open the floor branch valves at [Location Name Here] for 5 floors and circulate water for 2 hours and close the valves.
- T. Repeat procedure [Location Name Here] for all other floors (i.e., with 5 floors of branch valves open at a time).
- U. Open all floor branch valves.
- V. Drain the entire system.
- W. Clean all strainers.
- X. Refill the entire system.
- Y. Start and run the pumps.
- Z. Bleed off the system at the bottom drain points and add make-up water continuously until the water appears clean.
- AA. Clean all strainers.

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BB. Close all drain valves and ensure that the system is full of water and free of air by venting at the highest points.

CC. Add chemicals in required quantities as per the specialist supplier's instructions.

DD. Samples of water shall be collected from various parts of the system to ensure the chemical solution has reached all parts of the system.

EE. Run the pump and circulate the water (with chemicals) for 24 hours minimum and 72 hours maximum as per specialist suppliers' recommendations.

FF. Stop the pumps after completing the procedure number.

GG. Drain off the system from the drain valves (at locations described in procedure number 8) into the disposal tankers to be arranged by [Contractor Name Here].

HH. Refill the system with clean water and drain again at all drain points to remove the traces of chemicals in the system.

II. Refill the system again with clean water and run the pumps.

JJ. Bleed off the system at the bottom drain points and add makeup water continuously till the water runs clear and the chemical analysis report indicates that parameters are within the limits to add the final treatment chemicals.

KK. Raise WIR before adding the final chemicals for witnessing.

2.0 Safety

- The area shall be cordoned off and warning signs shall be placed as required during the process of flushing and cleaning.
- Only competent personnel shall be engaged for flushing and cleaning.
- All PPE shall be used as required by the technicians involved in the activity.
- The safety officer shall check and ensure all safety precautions are followed as per the project safety plan.
- Chemicals shall be stored in a proper place due to health hazards.

3.0 References

- Specification section
- Enclosed are sketches showing the typical location of equipment, valves, etc., for low-rise and high-rise circuits.