

iVA256-17-Q-0451 – R&M Questions

What are the rated HP and average steam loads for each boiler?
What is average Make Up water requirement for the boilers?
What is the average Percent Condensate Return for each boiler system?
Is there a water meter for the makeup water for the boiler systems?
What is the average Makeup Water Requirement for each Cooling Tower DON'T KNOW
Are there Water Meters for the Makeup Water Lines for each Cooling Tower? YES
What is the system volume for each cooling tower? No Clue
What is the normal recirculation rate for each cooling tower? No CLUE
What is the average delta T for Cooling Tower Condenser Water (Supply and Return) !) 10 DEGF
What are the Approach Temperatures for each Chiller (Condenser and Evaporator) 1.9F evap 2.8F Cond
Are there Make Up Meters for the Closed Loops? NO
What is the annual Makeup Water requirements for each Closed Loop? NO idea
Are there any restrictions for discharge (pH, Molybdenum, Chlorine, Phosphate etc.) ASK SCOTT BERRY
Would Solid Chemistries be an accepted chemical delivery option? NO
Are any of the Point of Feed for each system in a remote or hard to access location? NO
Do any of the Point of Feed locations require transit through sensitive areas (i.e. patients/ waiting rooms) in order to access? NO

Water treatment data required to determine chemical usage, plus estimate water and energy savings:

HVAC Cooling Tower Systems:

- How many independent cooling towers systems are on site and their rated tonnage? 1@4,800tons
- What is the difference in operating temperature from top of tower to bottom of tower? 10 DegF
- What is the average number of operating days per year for each cooling system? 365
- What are the average operating hours per day for each cooling system? 24
- What is the average load in tonnage for each cooling system? 3000 tons
- What is the independent cooling tower system volume in gallons, to include system piping? NA
- How much water in gallons/year is made up per tower system? NA
- How much water is discharged to the sewer per tower system? NA
- What is the cost for incoming water in \$/1000 gallons? NA
- What is the cost for sewer discharge for outgoing water in \$/1000 gallons? NA
- From the last chiller inspection, what was the deposition depth per system? NA
- How many times per year are the cooling tower basins fully cleaned? 2
- What filtration equipment is present on each tower system? None

Closed Water Loops:

- How many independent chilled water loops are there on site? 7
- How many independent hot water loops are there on site? 7
- What is the estimated or known water system volume for each system? NA
- What is the average water loss per system in gallons/year? NA
- What is the metallurgy in each closed loop system? NA

Steam Boilers Systems:

- How many independent steam boiler systems are on site and their rated horsepower?
- What water pretreatment is present per system: softeners; DeAlk; RO?
- What is the boiler operating PSIG per system?
- How much steam is produced per system in lbs/year?
- What is the percent condensate return per system?
- What are the steam uses per system?
- What is the Deaerator PSIG and temperature?
- What is the current amount of natural gas used in steam boiler systems per year?
- What is the current cost of natural gas per MBTUs?
- From the last inspection, how deep of deposition is present the steam boiler tubes?

Samples to collect, Lab time to run samples is two weeks, to include shipping:

- Boiler feedwater sample
- Condensate sample
- Boiler water sample
- Soft water, DeAlk, RO sample
- Make up water sample(s) for towers, closed loops, and steam boiler pretreatment systems
- Tower water sample
- Chilled closed loop sample
- Hot closed loop sample

Equipment: indicate the chemical feed, control, and storage equipment owned by site NA