Job Hazard Analysis

**Personal Protective Equipment Required:**

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| Task/Equipment: | Cleaning and Winterizing Cooling Tower |
| Department: | Powerhouse |
| Analyzed By: | Bill Partin & Bryana Borders |
| Date: | 4/12/19 |

**Rubber Boots**

**Slip Resistant**

**Chemical Resistant Gloves Gloves**

**Full Face Respirator**

**Heavy Leather Gloves**

**Waterproof Coveralls**

**Trainings Required\*/ Recommended:**

Hazardous communication\*, ladder safety, eye safety, respirator use

**Equipment/Tools/Chemicals Required for the Job:**

Goodway TFC-200 machine, Goodway Scalebreak-Gel, Scalebreak neutralizer, 6-ft ladder, hand tools, PH meter

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| **Steps** | **Hazards Present** | **Safety Measures and Controls** |
| 1. Turn tower fan control off at tower control panel. Open main power disconnect to cooling tower and secure with lockout protocol
 | No hazards present | N/A |
| 1. Open both North and South fan disconnect at cooling tower and secure with lock out protocol
 | No hazards present | N/A |
| 1. Isolate make-up water to tower by closing the 2 inch make-up ball valve
 | Ladder fall  | Proper ladder use training |
| 1. Connect Scalebreak chemical drum to TCH-200 machine per manufacture’s instruction
 | Chemical inhalation, chemical splash, chemical skin contact, chemical eye contact, Slip and fall | Properly wear a full face respirator, chemical resistant gloves and protective coveralls |
| 1. Apply Scalebreak chemical to cooling tower fill using manufacturer’s directions and allow to set for 1 hour.
 | Chemical inhalation, chemical splash, chemical skin contact, chemical eye contact, slip and fall | Properly wear a full face respirator, chemical resistant gloves, rubber boots, wear protective coveralls |
| 1. Use Goodway TCH-200 machine to wash tower fill per manufacturer’s instructions
 |  Chemical inhalation, chemical splash, chemical skin contact, chemical eye contact, slip and fall  |  Properly wear a full face respirator, chemical resistant gloves and protective coveralls  |
| 1. Add scale break neutralizer chemical to tower basin per manufacturer’s instructions to neutralize basin water
 |  Chemical inhalation, chemical splash, chemical skin contact, chemical eye contact, slip and fall  |  Properly wear a full face respirator, chemical resistant gloves, rubber boots and protective coveralls |
| 1. After PH has dropped (use PH meter) to acceptable levels ,open tower drain valve and allow sump basin to drain completely
 | Chemical contact with hands, eye, and skin. Slip and fall |  Properly wear a full face respirator, chemical resistant gloves, rubber boots and protective coveralls  |
| 1. Post another person outside the tower, enter using a six foot ladder and remove screen-strainers from sump suction
 | Ladder fall, finger cuts  | Use proper ladder use protocol, wear heavy leather gloves  |
| 1. Remove screens and clean with garden hose
 | Wet feet and hands could cause a loss of grip and a slip and fall  | Use water proof gloves and rubber boots |
| 1. Sweep out all loose scale, dirt and debris from floor of cooling tower and dispose of
 | Slip and fall, wet surface  | Use rubber boots |
| 1. Leave drain valve open to prevent freeze-up over the winter months
 | No hazards present | N/A |

**Additional Information:** Two person task

Safety Glasses

Lab Coat

Fall Protection Harness

High Vis Vest

Dust Mask

Hard Hat

Ear Protection