1.1 **GENERAL**

1.2 **Related SFU Technical Requirements**

   .1 *Section 20 00 05 Mechanical - General Requirements*
   
   .2 *Section 21 05 00 Fire Protection - General Requirements*

   .3 *Section 28 31 00 Fire Detection and Alarm*

1.3 **Description**

   .1 Additional SFU design and approval requirements for Wet Sprinkler Systems.

2.1 **MATERIALS AND DESIGN REQUIREMENTS**

2.2 **Design Standards**

   .1 Design and construction shall be in accordance with the latest edition of the following standards unless specified otherwise:

   .1 NFPA 13.
   
   .2 NFPA 20.

2.3 **Engineering Design Criteria**

   .1 Design system to NFPA 13 using following parameters:

   .1 Hazard shall suit occupancy.
   
   .2 Pipe Size and Layout
      
   .1 Hydraulic design of piping.
   
   .2 Head layout: to NFPA 13 and as indicated.

2.4 **Pipe, Fittings and Valves**

   .1 Pipe
      
   .1 Ferrous to NFPA 13.
   
   .2 Copper tube to NFPA 13.

   .2 Fittings and Joints shall be screwed, soldered, welded, flanged for rolled grooved and press fit to NFPA 13.

   .3 Valves
      
   .1 ULC listed for fire protection service.
   
   .2 Bronze to NPS 2", cast iron over NPS 2".
   
   .3 Threaded to NPS 2", flanged or rolled grooved over NPS 2". For shut off service: OS&Y gate OS&Y gate to NPS 2", indicating.
   
   .4 Butterfly over NPS 2".
   
   .5 Swing checks valves.
   
   .6 Ball drip.

   .4 Pipe hangers shall be ULC listed for fire protection as specified in *Division 21* and in accordance with NFPA 13.

2.5 **Sprinkler Heads**

   .1 General: to NFPA 13 and ULC listed for fire service.
2.6 **Alarm Check Valve**

.1 Alarm check valve with retard chamber to NFPA 13, ULC listed for fire service.

2.7 **Supervisory Switches**

.1 General to NFPA 13, and ULC listed for fire service.

.2 Valves shall be mechanically attached to valve body, with N.O. and N.C. contacts and supervisory capability.

.3 Flow shall be with N.O. and N.C contacts and alarm capability.

2.8 **Excess Pressure Pump**

.1 **Specify Pumps**
  
  .1 Double acting displacement type, open cylinder design, direct drive, ULC listed, complete with relief valve.

.2 **Motor**
  
  .1 EEMAC Class B squirrel cage induction 1725 rpm, continuous duty, drip proof, ball bearing, maximum temperature rise 50°C, [0.25] kW, 120/1/60.

.3 Capacity shall be [7.6] L/min.

.4 Pump operation switch to operate excess pressure pump with pressure differential of [103] kPa.

.5 Shut-off valve and strainer on pump inlet. Relief valve, check valve and shut-off valve on discharge connections.

2.9 **Signs**

.1 Signs for control drain and test valves: to NFPA 13.

2.10 **Antifreeze**

.1 SFU strongly recommends the use of dry systems where fire protection water piping is subject to freezing. Antifreeze presents environmental and maintenance issues. Glycol type systems shall only be installed with written approval of SFU Facilities.

2.11 **Installation**

.1 Install, inspect and test to acceptance in accordance with NFPA 13.

.2 Install excess pressure pump across alarm valve in accordance with manufacturer’s instructions.

.3 Testing to be witnessed by Owner and Burnaby Fire Department.

2.12 **Pre-action Systems**

.1 To be a double interlocked system.

.2 An isolation valve must be installed above the alarm valve for testing and maintenance.

.3 Refer to **Section 28 31 00 Fire Detection and Alarm, 2.3 Pre-Action Control Panel for Sprinkler System.**

***END OF SECTION***