The system shall be commissioned by a representative from the manufacturer, with a representative from the testing agency, to ensure proper installation of the system, including the piping and connecting devices. The testing agency shall also inspect the system for any potential safety hazards. The system shall be tested to meet all applicable codes and standards, and the testing agency shall be responsible for any necessary revisions or modifications to the system to meet local regulations.

The system shall consist of the following parts:

1. The nitrogen generator, which shall be factory-assembled and self-contained, with a nitrogen purity of at least 98%. The generator shall be equipped with a nitrogen purity analyzer, which shall display the purity of the nitrogen gas. The purity analyzer shall be able to detect any deviations from the required purity and shall alert the operator in case of any deviations.

2. The piping system, which shall be properly sized and configured to ensure the safe and efficient delivery of nitrogen gas to the system. The piping system shall be designed to accommodate the maximum flow rate of the system, and the piping shall be connected in such a way that any potential leaks or pressure surges are minimized.

3. The sprinkler piping network, which shall be designed to provide the required coverage and protection for the facility. The sprinkler piping network shall be properly sized and configured to ensure the proper flow rate and pressure for the sprinklers.

4. The purging orifice, which shall be installed at the top of the system to remove any nitrogen gas that may have accumulated in the system. The purging orifice shall be provided with a two-stage device to ensure the proper removal of nitrogen gas.

5. The nitrogen-based air release valve, which shall be installed to prevent any air from entering the system and to ensure the proper flow of nitrogen gas through the system.

6. The flexible hose, which shall be installed to provide the proper coverage and protection for the facility. The flexible hose shall be properly sized and configured to ensure the proper flow rate and pressure for the sprinklers.

The system shall be designed to meet the requirements of NFPA 13, with a maximum pressure loss of 2% and a pressure drop of 10 psi to ensure the proper delivery of nitrogen gas to the system.

The system shall also be equipped with a nitrogen purity analyzer, which shall display the purity of the nitrogen gas. The purity analyzer shall be able to detect any deviations from the required purity and shall alert the operator in case of any deviations.

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