

# SANTA ROSA FIRE DEPARTMENT

## FIRE PREVENTION BUREAU

### PLAN REVIEW CHECKLIST

July 1, 2010



## MEDICAL GAS SYSTEMS

Address:		Permit #:
Inspector:	Date:	Status:
Inspector:	Date:	Status:
A-Approved; AC-Approved w/comments; I-Incomplete; D-Denied		

This Checklist outlines general requirements. Information contained herein applies to typical instances and may not address all circumstances.

#### Plans Submittal Information:

1. Plans shall indicate area where gas is to be located.
2. Plans shall indicate construction type.
3. Plans shall indicate fire sprinkler protection.
4. Plans shall indicate penetrations and penetration protection.
5. Plans shall indicate the panel locations.

#### Code References:

2007 CFC Chapter 30 Compressed Gases Section 3006  
2007 CFC Chapter 27 Sections 2703.2.2.1, 2703.8.6.3 and 4004.2.1  
2005 NFPA 99

#### Scope:

For oxidizer compressed gases (nitrous oxide and oxygen) exceeding 504 cu. ft., Table 105.6.8.

- |    | Y                        | N                        |  |
|----|--------------------------|--------------------------|--|
| 1. | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 3006.2.1, CFC 3006.2.2, CFC 3006.2.3</b> Gases shall be stored in a separate room or enclosure of at least 1-hour fire resistive construction or a gas cabinet.   |
| 2. | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 3006.2.1</b> Exterior rooms have at least one exterior wall, an interior door that is at least a 1-hour fire rated, self-closing smoke and draft control assembly for openings between the room and building interior, at least 2 vents on the exterior wall not less than 36 sq. in. each, 1 vent is within 6 in. of the floor and the other vent within 6 in. of the ceiling, and at least 1 sprinkler for container cooling. |
| 3. | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 3006.2.2</b> Interior rooms shall have automatic sprinklers, supply and exhaust ducts are within a 1-hour rated shaft enclosure from the room to the exterior, ventilation a minimum of 1 cfm/sq. ft., and be in compliance with the CMC.   |
| 4. | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 3006.2.3</b> Gas cabinets operate at a negative pressure in relation to surrounding area, have an average ventilation velocity of 200 fpm across the face of access port/window and a minimum of 150 fpm at any point of access port/window, cabinet is connected to an exhaust system and internally sprinklered,.   |

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- |     | Y                        | N                        |  |
|-----|--------------------------|--------------------------|--|
| 5.  | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 3006.2.3 and CFC 2703.8.6.1</b> Gas cabinets shall have a self-closing door, access port and noncombustible window, be constructed of at least 12 gauge steel.  |
| 6.  | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 3006.2</b> Gases are stored in dedicated areas with no other storage or uses.   |
| 7.  | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 2703.2.2.1</b> Piping, tubing, valves, and fittings are compatible with gas, of adequate strength, labeled per ANSI A13.1, have manual shutoff valve or auto emergency shutoff valves at point of use and at the source, and emergency valve is identified. |
| 8.  | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 2703.8.6.3</b> Gas cabinets are limited to storing 3 cylinders.   |
| 9.  | <input type="checkbox"/> | <input type="checkbox"/> | Medical gas system is detailed and designed in accordance with <b>NFPA 99 Chapter 5, CFC 3006.4.</b>   |
| 10. | <input type="checkbox"/> | <input type="checkbox"/> | <b>NFPA 99: 5.1.3.3.2(2)</b> Rooms or enclosures shall have lockable doors.  |
| 11. | <input type="checkbox"/> | <input type="checkbox"/> | <b>NFPA 99: 5.1.3.3.2(7)</b> Provisions are made to securely fasten or rack gas cylinders.   |
| 12. | <input type="checkbox"/> | <input type="checkbox"/> | <b>NFPA 99: 5.1.11.1</b> All gas piping shall be labeled at the source, the outlet, and not more than every 20 ft., and at least once in or above every room, and both sides of wall penetrations.   |
| 13. | <input type="checkbox"/> | <input type="checkbox"/> | <b>NFPA 99: 5.1.11.2</b> Shut-off valve(s) are identified with name of gas or specific vacuum system, the room or areas served, and a warning not to close or open valves except in an emergency.  |
| 14. | <input type="checkbox"/> | <input type="checkbox"/> | <b>CFC 3006.4</b> Inspection, testing, and certification documents shall be provided as detailed in NFPA 99 Chapter 4 and some of the information to be included is:   |
| 15. | <input type="checkbox"/> | <input type="checkbox"/> | <b>NFPA 99: 5.1.12.2</b> Tests to be performed, documented, and certified by the installer:<br>Blow down test: Intermittent flow of oil-free, dry nitrogen (NF) through piping.  |
| 16. | <input type="checkbox"/> | <input type="checkbox"/> | Initial pressure test for pressure gases, 1.5 times the working pressure, minimum 150 PSIG   |
| 17. | <input type="checkbox"/> | <input type="checkbox"/> | Pipe purge test.   |
| 18. | <input type="checkbox"/> | <input type="checkbox"/> | Cross-connection test, no cross connection exists between systems  |
| 19. | <input type="checkbox"/> | <input type="checkbox"/> | Standing pressure test, 24 hrs at 20 percent above normal operating line pressure  |
| 20. | <input type="checkbox"/> | <input type="checkbox"/> | <b>NFPA 99: 5.1.12.3</b> System verification tests to be performed, documented, and certified by a qualified third party:  |
| 21. | <input type="checkbox"/> | <input type="checkbox"/> | Cross-connection test  |
| 22. | <input type="checkbox"/> | <input type="checkbox"/> | Valve test   |
| 23. | <input type="checkbox"/> | <input type="checkbox"/> | Outlet flow test   |
| 24. | <input type="checkbox"/> | <input type="checkbox"/> | Alarm testing  |
| 25. | <input type="checkbox"/> | <input type="checkbox"/> | Standing pressure  |
| 26. | <input type="checkbox"/> | <input type="checkbox"/> | Piping particulate test  |
| 27. | <input type="checkbox"/> | <input type="checkbox"/> | Pipe purge test  |
| 28. | <input type="checkbox"/> | <input type="checkbox"/> | Piping purity test   |
| 29. | <input type="checkbox"/> | <input type="checkbox"/> | Operational pressure test, pressure differential   |

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- |     | <b>Y</b>                 | <b>N</b>                 |   |
|-----|--------------------------|--------------------------|---|
| 30. | <input type="checkbox"/> | <input type="checkbox"/> | Medical gases concentration test  |
| 31. | <input type="checkbox"/> | <input type="checkbox"/> | Medical air purity test, compressor system  |
| 32. | <input type="checkbox"/> | <input type="checkbox"/> | Final tie-in and labeling   |
| 33. | <input type="checkbox"/> | <input type="checkbox"/> | <b>NFPA 99: 5.1.12.3.14</b> Source equipment verification shall be performed, documented, and certified by a qualified party: |
| 34. | <input type="checkbox"/> | <input type="checkbox"/> | Gas supply sources  |
| 35. | <input type="checkbox"/> | <input type="checkbox"/> | Medical air compressor  |