

OFFICE OF ENGINEERING SERVICES, REGION X  
CODES & STANDARDS COMMITTEE  
FORMAL INTERPRETATION

REFERENCE: Wachs' letter, dated April 12, 1994.

ISSUE: Waiver of NFPA -99, paragraph 4-6.2.4. 7: "Every facility shall establish a procedure for manually turning off the gas supply at the cylinder valves at the end of the work day, or when the facility is not in use."

LOCATION: None

BACKGROUND: LTJG Geoffrey Wachs of the Portland Area Indian Health Service initiated a memorandum on April 12, 1994, requesting a waiver on subject requirements. On April 26, 1994, Mr. Jim Ishihara replied with a denial of the request for a waiver.

This issue was then, at the request of the Portland Area IHS, brought to the attention of the IHS Health Facilities Advisory Committee (HFAC) on October 15, 1994 and was discussed at subsequent December 1994 and February 1995 meetings. The HFAC referred this issue to the OES Region X, Codes & Standards Committee at their February 1, 1995 meeting requesting we review and draft a response.

Mr. Wachs' opines that "Turning off the oxygen tanks has been very difficult and time consuming for the Dental/Maintenance Departments."

DISCUSSION: The intent of this section of NFPA 99 is to protect the clinical staff (and in the event of fire, protect the fire fighters). This section applies to Type II facilities which operate on a normal work day schedule and have a centrally piped medical gas system. It is important to note that Type II facilities are not required to have 24-hour monitoring of the status of the medical gas line pressure and cylinder manifold status. The comments regarding paragraph 4-6.2.4. 7, in the NFPA 99 Health Care Facilities Handbook 1993, refers to a commentary under 4-4.2.12.2, which states: "... (on remote actuators and cylinder shutoff valves) were added in 1990 to address the issues of... fire hazards and shutoff valves when a facility is not in use. In facilities such as freestanding dental or medical offices that are generally not supervised 24-hours per day, it is a serious hazard to leave gas pressurized with no one in the area. In the event of fire, if hoses broke, nothing would prevent high pressure oxygen

from accelerating the fire, adding problems to fire fighting operations."

Additionally, it is a fact that gas outlets, used frequently, need to be annually checked, to ensure that no leakage occurs due to wear or damage to the double check valves and seals within the outlets. In the event that an outlet is defective, and the shutoff valve not turned off after the work day by the user, leakage from the gas outlet (oxygen or nitrous oxide) can result in a hazardous, e.g., highly enriched oxygen, atmosphere in the space. This may lead to fire, explosion, excessively high nitrous oxide exposure, etc.

Although a waiver of subject requirements, is not supportable, it is acceptable to utilize remotely actuated shutoff valves. Remotely actuated shutoff valves (which fail close) may be installed at the point of use locations in addition to the source valve. The (remotely actuated) valves still need to be closed at the end of the work day. We wish to acknowledge the expert technical assistance from Ms. Danielle Earhart in this matter, who is a member of the NFPA 99, Technical Committee on Piping Systems.

INTERPRETATION: Request for Waiver is denied.

## SIGNATURES:

<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE: 3-14-95	/Diane Stewart Adams/ NAME: Diane Stewart Adams, AIA, WA #0004056
<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE: 3-14-95	/Paul Ninomura/ NAME: Paul T. Ninomura, P.E., WA #0018669
<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE: 3-14-95	/Steven C. Christensen/ NAME: Steven C. Christensen, P.E., WA #0017104
<input checked="" type="checkbox"/> Concur	<input type="checkbox"/> Do Not Concur	DATE:	/James L. Crawford/ NAME: James L. Crawford, Sr. P.E., WA #21414