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STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE MINNESOTA DEPARTMENT OF ADMINISTRATION

In the Matter of
Proposed Permanent
Rules Relating to
Minnesota State
Building Code.

REPORT OF THE
ADMINISTRATIVE LAW JUDGE

The above-entitled matter came on for hearing before Administrative Law Judge Steve M. Mihalchick on February 2, 1990, at 9:00 a.m. at the Sheraton Airport Hotel, 2525 East 78th Street, Bloomington, Minnesota.

This report is part of a rulemaking proceeding held pursuant to Minn. Stat. SS 14.131 to 14.20, to hear public comment, to determine whether the Minnesota Department of Administration (Department) has fulfilled all relevant substantive and procedural requirements of law or rule, to determine whether the proposed rules are needed and reasonable, and whether or not the rules, if modified, are substantially different from those originally proposed.

Charlene Hatcher, Special Assistant Attorney General, 1100 Bremer Tower, St. Paul, Minnesota 55101 appeared on behalf of the Department at the hearing. The agency panel appearing in support of the proposed rules consisted of Elroy Berdahl, Technical Services Section Supervisor; Alvin Kleinbeck, Code Administrator; Milton Bellin, Minnesota Health Department Plumbing Unit; and James Berg, Department of Labor and Industry Code Enforcement Division Director.

Approximately one hundred persons attended the hearing. Eighty persons signed the hearing register. The Administrative Law Judge received eight exhibits as evidence during the hearing. The hearing continued until all interested persons, groups or associations had an opportunity to be heard concerning the adoption of these rules.

The record remained open for the submission of written comments for twenty calendar days following the date of the hearing or February 22, 1990. Pursuant to Minn. Stat. sec. 14.15, subd. 1 (1988), three business days were allowed for the filing of responsive comments. On February 27, 1990, the rulemaking record closed for all purposes.

Beyond the oral comments at the hearing, the Administrative Law Judge received 313 post-hearing written comments from interested persons. The Department submitted a written comment responding to matters discussed at the hearing. Eleven comments were received after the record closed in

this proceeding and, therefore, those comments were not considered.

The Department must wait at least five working days before taking any final action on the rules; during that period, this Report must be made available to all interested persons upon request.

Pursuant to the provisions of Minn. Stat. sec. 14.15, subd. 3 and 4, this Report has been submitted to the Chief Administrative Law Judge for his approval. If the Chief Administrative Law Judge approves the adverse findings of this Report, he will advise the Commissioner of Administration (Commissioner) of actions which will correct the defects and the Commissioner may not adopt the rule until the Chief Administrative Law Judge determines that the defects have been corrected. However, in those instances where the Chief Administrative Law Judge identifies defects which relate to the issues of need or reasonableness, the Commissioner may either adopt the Chief Administrative Law Judge's suggested actions to cure the defects or, in the alternative, if the Commissioner does not elect to adopt the suggested actions, she must submit the proposed rule to the Legislative Commission to Review Administrative Rules for the Commission's advice and comment.

If the Commissioner elects to adopt the suggested actions of the Chief Administrative Law Judge and makes no other changes and the Chief Administrative Law Judge determines that the defects have been corrected, then the Commissioner may proceed to adopt the rule and submit it to the Revisor of Statutes for a review of the form. If the Commissioner makes changes in the rule other than those suggested by the Administrative Law Judge and the Chief Administrative Law Judge, then she shall submit the rule, with the complete record, to the Chief Administrative Law Judge for a review of the changes before adopting it and submitting it to the Revisor of Statutes.

When the Department files the rule with the Secretary of State, it shall give notice on the day of filing to all persons who requested that they be informed of the filing.

Based upon all the testimony, exhibits and written comments, the Administrative Law Judge makes the following:

FINDINGS OF FACT

Procedural Requirements

1. On December 20, 1989, the Department filed the Notice of Hearing proposed to be issued with the Chief Administrative Law Judge.

2. On January 2, 1989, the Department filed the following documents with the Chief Administrative Law Judge:

- (a) A copy of the proposed rules certified by the Revisor of Statutes.
- (b) The Statement of Need and Reasonableness.

3. On January 2, 1990, a Notice of Hearing and a copy of the proposed rules were published at 14 State Register 1612.

4. On December 29, 1989, the Department mailed the Notice of Hearing to all persons and associations who had registered their names with the Department for the purpose of receiving such notice.

5. On January 30, 1990, less than 25 days prior to the hearing, the Department filed the following documents with the Administrative Law Judge:

- (a) The Notice of Hearing as mailed.
- (b) The Agency's certification that its mailing list was accurate and complete.
- (c) The Order for Hearing.
- (d) The names of Commission personnel who will represent the Agency at the hearing together with the names of any other witnesses solicited by the Agency to appear on its behalf.
- (e) A copy of the State Register containing the proposed rules with the Administrative Law Judge.
- (f) The comments received following the Department's request for comments and a copy of the Department's request for comments.

6. On January 31, 1990, the Department filed the Affidavit of Mailing the Notice to all persons on the Agency's list with the Administrative Law Judge.

The documents were available for inspection and copying at the Office of Administrative Hearings from the date of filing to February 27, 1990, the date the record closed.

The Department did not comply precisely with the filing deadlines of Minn. Rules 1400.0300 and .0600. However, no members of the public inquired of the Administrative Law Judge to inspect or copy the documents required to be filed under those rules. No one expressed any objection or claimed to be prejudiced by the Department's late filing. The Administrative Law Judge finds that the Department's noncompliance with Minn. Rules 1400.0300 and .0600 is not a defect in the rulemaking proceeding.

Nature of the Proposed Rules.

7. The proposed rules repeal portions of the presently existing code governing standards for plumbing installation and maintenance, and alter some of the remaining code provisions.

Statutory Authority.

8. In its Notice of Hearing, the Department cites Minn. Stat. 16B.61 (1989) as authorizing the Department to adopt the proposed rules. This statute requires the Department to promulgate rules establishing a code "for the construction, reconstruction, alteration, and repair of state-owned buildings, governing matters of structural materials, design and construction, fire protection, health, sanitation, and safety."

Minn. Stat. sec. 16B.61. The Department has general authority to adopt these rules.

&all Business Considerations in Rulemaking..

9. Minn. Stat. sec. 14.115, subd. 2 (1988), requires state agencies proposing rules affecting small businesses to consider methods for reducing adverse impact on those businesses. In the Notice of Hearing, the Department stated that the effect of the proposed rules on small business was evaluated in light of the methods suggested in that statute. The Building Codes Division (of the Department) feels the proposed rules will not have an impact on small businesses. Testimony received at the hearing indicates that the proposed rules could have a large impact on small businesses, insofar as the installation of plumbing devices and pipe is largely done by small businesses. Reduction of compliance for small business is inappropriate since the rules establish a minimum standard intended to protect the health and safety of the public while using potable water. Similarly, exempting small businesses from the proposed rule is inappropriate since the rules are intended to be a minimum standard. Since there are no reporting requirements, beyond receiving approvals for devices not listed in the rules, the rules cannot be made less rigorous when applied to small businesses. The Department has met the requirements of Minn. Stat. sec. 14.115, subd. 2, with respect to the impact of the proposed rules on small businesses.

Fiscal Note.

10. Minn. Stat. § 14.11, subd. 1, requires proposers of rules requiring the expenditure of public funds in excess of \$100,000 per year by local public bodies to publish an estimate of the total cost to local public bodies for a two-year period. One commentator suggested that these rules will require such an expenditure since municipalities will have increased costs in complying with the standards set forth in the rules. The fiscal note is required when promulgation of rules will cause the direct expenditure of funds to carry out the mandate of the rules. In this case, any increased expenditure of public funds would be incidental to construction performed by the local public body and thereby discretionary on the part of the local public body. The proposed rules will not, of themselves, require any expenditure of funds by a local agency or school district.

Impact on Agricultural Land.

11. Minn. Stat. sec. 14.11, subd. 2, requires proposers of rules that have a "direct and substantial adverse impact on agricultural land in

this state" to comply with additional statutory requirements. These rules have no impact on agricultural land and, therefore, the additional statutory provisions do not apply.

Substantive Provisions.

12. The portions of the proposed rules which received comment or otherwise need to be examined will be discussed below. Any rule not mentioned is found to be needed and reasonable. Also, any rule not mentioned is found to be authorized by statute.

Proposed Rule 4715,0310 -- Use of Public Sewer and Water Systems Required.

13. Proposed Rule 4715.0310 alters the rule requiring the use of public facilities rather than wells by including a requirement that the well be used for irrigation, or sealed and abandoned as required by the Water Well Code. This additional language was requested to extend jurisdiction for well abandonment, in these instances, to building officials. The proposed rule received no adverse comment, and is needed and reasonable.

Proposed Rule 4715.0810 -- Plastic Joints.

14. This proposed rule establishes the proper technique for creating joints in plastic piping. Subpart 2 requires the use of a primer in a contrasting color to the pipe and cement used in solvent weld joints of PVC and CPVC pipe. The Department asserted in its Statement of Need and Reasonableness (SONAR) that the contrasting color would aid the inspector in determining that a particular weld had been done properly. Ed Worley objected to the proposed rule part, on the basis that the standard set forth by the National Sanitation Foundation (NSF) for primers was not adopted as part of the proposed rule. The Department responded to the objection by altering the proposed Subpart 2 to add a requirement that primers comply with NSF Standard 14. The Department asserts that compliance with this standard ensures the primer has been tested and certified safe for use in potable water systems. The Department has shown that using a contrasting color of primer is needed and reasonable and the change does not constitute a substantial change.

Proposed Rule 4715,1380 -- Showers.

15. The only new language in this proposed rule part is Subpart 5, which requires showers and combination shower-bath fixtures in new and remodeled installations to have an anti-scald type shower control valve. Subpart 5 permits the choice of control valve between the thermostatic or pressure balancing varieties. Either type must conform to ANSI/ASSE standard 1016-79. The Department justifies this requirement by the documented cases of burns and falls which occur when manual mixing systems fail. Randy Schenk of A.J. O'Conner Sales Co. submitted written comments including Research Report 88-01 of the American Society of Plumbing Engineers (ASPE) and the Scald Burn Prevention Position Paper from the Burn Prevention Committee of the American Burn Association. Both of these documents recommend stricter requirements for the mixing valves of showers.

The usual cause of the failure is a sudden drop in cold water pressure. In the manual mixing methods, there is no reduction in hot

water pressure to compensate for the loss of cold water. The temperature of the water leaving the shower head rises, causing the bather sudden and unexpected discomfort. If the bather moves rapidly away from the shower spray, there is a substantial risk of injury from falling. If the bather remains under the shower spray and cannot stop the flow of hot water, the bather will be burned.

The Department asserts that burns from scalding, particularly among children and the elderly form a serious hazard in the home. The ASPE report indicates that a first degree burn (the least serious type) can occur within 8 minutes when skin is in contact with water at 120 degrees fahrenheit. This time drops to 3 seconds when the temperature reaches 140 degrees fahrenheit. An alternative to a valve requirement would be to limit the maximum temperature of water heaters. Water between 60 and 120 degrees fahrenheit provides an ideal breeding ground for legionella pneumophila, the bacteria which causes Legionnaire's disease. The ASPE report recommends that a minimum temperature of 135 degrees fahrenheit be maintained to prevent the spread of this bacteria.

The Department has shown that anti-scald devices are needed to protect bathers from burns caused by overheated water. The Department has shown that the less restrictive alternative, lowering the maximum temperature of the hot water supply, poses a serious health risk. Mr. Schenk submitted a price list of available valves, both pressure balancing and ordinary mixing types. The costs range from \$25.25 to \$73.06 for all types of valves. The least expensive pressure balanced valve costs \$42.65. This amounts to an increased cost of \$15.00. This increased cost is not unreasonable in light of the protection afforded by these devices. The Department has shown that the proposed rule is needed and reasonable.

Proposed Rule 4715,2100 -- Backflow Preventers and Proposed Rule 4715,2110 -- Types of Devices Where an Air Gap Cannot Be Provided.

16. Proposed rule 4715.2100 deletes the existing language (which governs the installation of vacuum breakers) and replaces it with a list of specifications for the installation of atmospheric vacuum breakers (AVB), pressure vacuum breakers (PVB), double check valves with intermediate atmospheric vent (DCVIAV), double check valve assemblies (DCVA) and reduced pressure zone backflow preventers (RPZ). Rule 4715.1920 regulates cross connections between potable water and systems containing substances of questionable safety. Rule 4715.1920 is not part of this rulemaking proceeding. Proposed rule 4715.2110 lists which backflow preventers are required for different systems. The only systems for which the backflow device requirement received critical comment are post-mix carbonated beverage machines and fire sprinkler systems. The rule regarding carbonated beverage machines will be discussed at Finding 17, below.

Fire marshals, fire chiefs and fire inspectors from 15 municipalities objected to proposed rule 4715.2110 insofar as it would require RPZ, DCVIAV or DCVA backflow prevention on all new or remodeled fire sprinkler

systems. Numerous installers and manufacturers of sprinkler systems also objected. The Department asserts that backflow prevention is necessary to prevent contamination of potable water supplies from stagnant water retained within sprinkler systems. The standard device to prevent backflow in most sprinkler systems is the check valve. The Department argues that the check valve permits migration of metal and bacteria-laden water into the potable water supply of buildings. The proposed rule would only apply on sprinkler systems which draw their water supply from the potable water line within the affected building. Sprinkler systems which draw their water supply directly from the municipal mains would not be required to meet proposed rule 4715.2110.

Commentators have objected that the Department has not shown persons have been harmed through a water supply contaminated by a sprinkler system. The Department is not required to show evidence of actual injury and may rely on imperfect data to reach its conclusions. However, the Department must explain on what evidence it is relying and how that evidence connects rationally with the proposed rule. *Manufactured Housing Institute v. Peterson*, 347 N.W.2d 238, 244 (Minn. 1984). The Department's evidence in this case is pure conjecture and does not meet that burden.

The Department has introduced a document denoting several instances of some contamination found to have originated from "fire lines." The Department has not shown that these instances arose from the types of sprinklers sought to be regulated by the proposed rule. The American Water Works Association (AWWA) has categorized sprinkler systems into six classes in its manual entitled *Distribution System Requirements for Fire Protection* (known as M31). The AWWA has a manual entitled *Backflow Prevention and Cross-Connection Control* (known as M14), but only the 1966 edition of that manual is a part of this hearing record. M31 sets forth examples of sprinkler systems which include specific backflow protection. Classes 4 through 6 require RPZ protection. Those classes include systems which are connected to water mains and either: 1) introduce chemical additives; 2) are interconnected to two or more water supplies; or, 3) are within 1700 feet of another water supply. Class 3, consisting of a system directly connected to water mains and drawing auxiliary water from a cover reservoir or tanks, uses DCVA or DCVIAV to prevent backflow. With regard to class 1 (water main to sprinklers which vent to air) and class 2 (water main and booster pump to sprinklers which vent to air), M31 states that "generally, classes 1 and 2 fire protection systems will not require backflow protection at the service connection." M31, at 46. The Department has not shown that the cited instances of contamination occurred in class 1 or class 2 systems.

Where the burden imposed by the proposed rule is light, the Department's burden of proving that the standard is reasonable is also light. However, the burden imposed by this proposed rule will significantly increase costs to building owners who choose to install a sprinkler system. Each backflow prevention device installed on a system decreases the water pressure available to the remainder of the system. When a new system is originally designed, this pressure loss can be accounted for in the system specifications. Retro-fitting existing systems with a RPZ, DCVA or DCVIAV could cause those sprinkler heads

furthest from the water source to fail, owing to a lack of water pressure. This problem may be corrected through the installation of a fire pump, but this further increases the cost of the sprinkler system and could induce building owners to abandon the use of sprinklers rather than incur that cost. It is reasonable to assume that the proposed rule would increase the risk of fire in our state. Such a result is not in keeping with the statutory purpose of the rules, to ensure public safety.

The Department, recognizing the hardship this rule would place on existing systems, has proposed to alter the rule to add a restriction, that the backflow prevention devices would apply only to "new or total replacement installations only." This amendment does resolve the issue

regarding existing systems, and should the rule be finally adopted, this alteration is needed and reasonable and does not constitute a substantial change.

The Department has made no showing that the present system of check valves for class 1 and class 2 sprinkler systems is likely to cause harm through contaminating potable water supplies. The United States Environmental Protection Agency (EPA) has listed fire sprinkler systems as potential sources of backflow contamination, but the only example provided in its Cross-Connection Manual is a class 3 sprinkler system. EPA Cross-Connection Manual, at 40. The Department has not shown that the requirement of RPZ, DCVA or DCVIAV backflow protection is needed or reasonable. To cure this defect, the Department must delete "Fire sprinkler system" from proposed rule 4715.2110.

The Department has proposed altering the rule to add letters to designate each different application of backflow prevention. This change is needed and reasonable to ensure accurate citation of the rule. The change is not a substantial change. The remainder of the proposed rule is needed and reasonable.

The Department has suggested that Minn. Rule 4715.1920 must be altered to avoid conflicting application of the rules if the proposed rule regarding fire sprinklers is found to be defective. Minn. Rule 4715.1920 is both already promulgated and not part of this rule proceeding. The Administrative Law Judge notes that, if the Department is correct in its assertion that Minn. Rule 4715.1920 already applies to fire sprinkler systems, the Department has established a precedent of using check valves on class 1 and class 2 sprinkler systems. In any event, that rule cannot be altered now since it is beyond the scope of this proceeding and would deny notice to the regulated public.

Proposed Rule 4715,2163 -- Carbonated Beverage Machines.

17. This proposed rule part requires the use of DCVIAV for the line preceding the carbonator in carbonated beverage machines. Dave Locey of the Minnesota Soft Drink Association objected to this requirement on the basis that it would increase costs, reduce reliability of soft drink systems and that the protection is not needed. The Department has presented evidence that several instances of illness were caused by contaminated water and that proper backflow prevention would have averted this harm. No figures were presented by any commentator to show how this proposed rule would affect costs. Mr. Locey suggested that replacing existing equipment on drink systems would result in incompatible equipment that would reduce system reliability. The Department responded to the reliability argument by asserting that the required backflow preventer would be in addition to any existing device on the equipment, not replacing existing valves. Proposed rule 4715.2163 is needed and reasonable to prevent backflow in carbonated drink systems that could contaminate potable water supplies and cause illness when such contaminated water is consumed.

Proposed Rule 4715,2190 -- Combination Water and Space Heating Equipment.

18. Proposed rule part 4715.2190 permits installation of devices to heat domestic or service water and provide space heating, so long as the devices meet requirements for mixing valves, isolation valves, drainage port (or automatic stagnation prevention) and manufacturer approval for use as a combination water and space heater. The majority of those who objected to this provision were concerned about jurisdictional disputes between the plumbing and pipefitting trades. The Department noted in its posthearing comment that combination water and space heaters are presently being installed in Minnesota without any restrictions. The Department emphasized that the proposed rule takes no position on any jurisdictional disputes which may occur.

The proposed rule seeks only to specify health and safety requirements the devices must meet. The mixing valve requirement is linked to the anti-scald provisions referred to in Finding 15, above. The drainage port or automatic stagnation prevention requirement is imposed to permit removal of stagnant water from the system. Removing such water reduces potential bacteria or potability problems. Requiring manufacturer approval for combination water and space heaters prevents a heating loop from being added to a device designed only as a water heater. Proposed rule 4715.2190 is needed and reasonable to protect public health, safety and prevent use of unsafe equipment.

Other Comments.

19. An additional change was suggested by the Department to proposed rule 4715.0420, subpart 3, VI, to add NSF Standard 14 as a reference to 6K polybutylene water pipe. This change, suggested by a commentator, was not objected to. This change does not constitute a substantial change and is needed and reasonable.

Based upon the foregoing Findings of Fact, the Administrative Law Judge makes the following:

CONCLUSIONS

1. That the Department gave proper notice of the hearing in this matter.

2. That the Department has fulfilled the procedural requirements of Minn. Stat. SS 14.14, subds. 1, 1a and 14.14, subd. 2, and all other procedural requirements of law or rule.

3. That the Department has demonstrated its statutory authority to adopt the proposed rules and has fulfilled all other substantive requirements of law or rule within the meaning of Minn. Stat. SS 14.05, subd. 1, 14.15, subd. 3 and 14.50 (i)(ii).

4. That the Department has documented the need for and reasonableness of its proposed rules with an affirmative presentation of facts in the record within the meaning of Minn. Stat. SS 14.14, subd. 2 and 14.50 (iii), except as noted at Finding 16.

5. That the amendments and additions to the proposed rules which were suggested by the Department after publication of the proposed rules in the State Register do not result in rules which are substantially different from the proposed rules as published in the State Register within the meaning of Minn. Stat. sec. 14.15, subd. 3, and Minn. Rule 1400.1000, Subp. 1 and 1400.1100.

6. That the Administrative Law Judge has suggested action to correct the defects cited in Conclusion 4 as noted at Finding 16.

7. That due to Conclusion 4, this Report has been submitted to the Chief Administrative Law Judge for his approval pursuant to Minn. Stat. 14.15, subd. 3.

8. That any Findings which might properly be termed Conclusions and any Conclusions which might properly be termed Findings are hereby adopted as such.

9. That a finding or conclusion of need and reasonableness in regard to any particular rule subsection does not preclude and should not discourage the Department from further modification of the proposed rules based upon an examination of the public comments, provided that no substantial change is made from the proposed rules as originally published, and provided that the rule finally adopted is based upon facts appearing in this rule hearing record.

Based upon the foregoing Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

It is hereby recommended that the proposed rules be adopted except where specifically otherwise noted above.

Dated: March 29 1990.

STEVE M. MIHALCHICK
Administrative Law Judge