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FIRE PROTECTION HISTORY-PART 184: 1916 (HIGH PRESSURE MUNICIPAL WATER SUPPLIES/SPRINKLER PROTECTION)

By Richard Schulte

One of the solutions adopted to combat the conflagration problem which plagued large cities in the United States was high pressure municipal water distribution systems. The pressures available from these high pressure systems permitted fire fighters to connect hose lines directly to hydrants, rather than use pumping apparatus to boost the water pressure.

In cities where high pressure systems were provided (New York, Baltimore, Philadelphia and San Francisco), the question of whether or not sprinkler systems should be permitted to be connected to the high pressure system arose. This issue was addressed at the twentieth Annual Meeting of the National Fire Protection Association. The following is a transcript of this discussion:

"*The Chair: Private Fire Supplies from Public Mains. Mr. Lacount will present the report for Chairman French.*

Report of Committee on Private Fire Supplies from Public Mains.

E. V. FRENCH, Chairman,
A. Blauvelt, Geo. W. Booth, L. W. Evans, E. B. Hatch, Ira G. Hoagland, H. B. Machen, Richard H. Morris, Frederick C. Mott, H. L. Phillips, Benjamin Richards.

Mr. Lacount: This is again a progress report from the Committee.

(Reads.)

Following the 1915 meeting of the Association several members of the former committee on high pressure fire service systems were added to this committee. Our committee was asked to work out the details of connecting automatic sprinkler systems with high pressure fire service systems in order that tangible suggestions might in due time be presented to the Association. This was understood to be in addition to such other matters as would naturally come before our committee.

Early in July, I sent a general letter to the members of the committee outlining briefly the work referred to us and asking for the co-operation of all and for such suggestions as might develop in the course of the work of the members in their various fields. Some general suggestions were received and Mr. Hoagland of the committee has been giving some time to the collection of data covering actual experience with present systems. It has not as yet been possible to give much time to this whole problem and it is yet most desirable that a definite working plan based on the best present experience should be developed for discussion and as a starting point for standard practice.

There is much force in the points brought up in previous discussions that our special high [pressure] *service systems would be performing their largest service if, in addition to supplying high pressure fire streams, they could be also made available as a supply for automatic sprinklers. The automatic sprinkler is one of our most powerful aids in controlling fire waste so that the possibility of making the great expense of the high pressure system also available to supply sprinklers is one which should have the earnest consideration of us all. This is a point upon which the experience of the year with high pressure systems may throw some light, and I would suggest that some discussion on this feature would be of assistance to the problem and a help in any future committee work.*

There have been no new developments in the other matters coming within the range of the committee work. The double check valve protection of fire connections is being extended constantly and the accumulating experience with the double checks in use increases our confidence in them. They do furnish a protection for public supplies which is distinctly better than anything ever before secured and which is ample for all practical purposes in nearly all conditions.

In the matter of the size of fire service connections and the means of controlling them the ideas set forth by the committee in the past are proving satisfactory in practice to meet all ordinary needs. Co-operation with water works authorities along these lines is practically certain to give continuing and increasing good results in the future.

Mr. G. M. Robertson: I would like to urge upon the Committee the great desirability of speedy action in adopting some method of connecting a sprinkler system to a high pressure system. We have in San Francisco a very excellent high pressure system. We have not heretofore been able to get any sprinkler connection with it because the authorities in control take the ground that it is unstable and likely to blow the system up; but there are a lot of things that are not used that they assume to be used, and some expression of opinion by this body would aid us very much in making those connections. The expense of installing sprinkler systems is very great on the Coast generally. We would like to have a great many more than we have, and would appreciate it if there were some reasonable way we could find to make those connections.

We had 35,000 sprinkler heads in the Exposition buildings without meters to stop the flow of water, with valves which were open at all times, on a high pressure system with a pressure running up to 215 pounds. All of these equipments were tested to 400 pounds for one hour. Nothing happened that does not happen with the ordinary sprinkler system, and our idea is that such connections are perfectly safe. It might be necessary or advisable to have some quick way of shutting the water off. I wish the Committee would make some early utterance upon that."

Ninety plus years after this discussion took place, it's difficult to understand why the connection of sprinkler systems to high pressure municipal distribution systems would be controversial, however, to understand the basis for this controversy, it is necessary to consider the background behind the installation of high pressure municipal distribution systems for fire protection purposes. These systems were installed for only one purpose-to prevent conflagrations, hence, careful consideration was given to the connection of sprinkler systems to the high pressure distribution system. In some cities, it was concluded that connecting sprinkler protection to the high pressure system had the potential to adversely affect the operation of the high pressure system and, hence, sprinkler connections were prohibited.

With the introduction of motorized fire apparatus in large cities as a replacement for horse-drawn apparatus with coal-fired steam pumps, the danger of conflagration and concern over conflagration eventually passed and, with the exception of San Francisco, these high pressure systems were abandoned as an archaic means of providing public fire protection.

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Source: "*Proceedings of the Twentieth Annual* [NFPA] *Meeting*", Chicago, Illinois, 1916.