Decision No. 2019.001

DEPARTMENT OF HEALTH & HUMAN SERVICES Indian Health Service

Office of Environmental Health and Engineering
1301 Young Street, Room 1071
Dallas, TX 75202-5433
701 Fifth Avenue, MS 24, Suite 1600
Seattle, Washington 98104-7037

April 16, 2019

Mr. David Blickenderfer
Operations Manager/Project Manager
Greenberg Construction
225 East Germann Road
Suite 201
Gilbert AZ 85297

RE: NCYRTC Water Supply System Code Equivalency Determination Request

Dear Mr. Blickenderfer:

This is in response to your letter dated April 4, 2019 requesting a Code Equivalency Determination for a design condition not currently compliant with the 2018 International Plumbing Code.

IPC 608.1 and 608.17.4 requires protection of the potable water supply by contamination from nonpotable liquids, solids, or gases. Specifically, IPC requires potable water supplies for fire protection systems to be protected against backflow via a double check backflow prevention assembly or via a reduced pressure principle fire protection backflow prevention assembly. The backflow prevention assembly in the design is located downstream of the fire pump, thereby allowing the potable water supply to come into contact with the fire pump, thus creating a noncompliant cross-connection. In lieu of a properly located backflow prevention assembly, you are proposing to solely utilize NSF-61 certified pumps, piping, and appurtenances between the water tank (potable water supply) and the backflow prevention assembly, and that this meets the intent of the IPC to protect the potable water supply from contamination.

Your request for an equivalency determination is hereby approved, in that the proposed design provides an equal degree of protection of the potable water supply as would be afforded by proper location of the backflow prevention assembly, and subject to confirmation in the field.

This determination is strictly limited to the technical merits of the design as related to compliance with the IPC. This equivalency determination does not represent concurrence with your assertion in your April 4 letter that the design is compliant within the parameters of the BOD and contract documents.

Sincerely,

/Michael Weaver/
Michael R. Weaver, P.E., BCEE
Director, DES
AHJ for the IHS

Enclosure:
Greenberg Construction letter dated 4/4/2019

cc:
Don Brafford, Director OEHE, California Area
CAPT Paul Frazier, Director, Health Facilities Engineering, OEHE, California Area
Howard Wellspring, Deputy Director for Project Management, DES
Joseph Bermes, Deputy Director for Architecture and Engineering, DES
Bruce Kemmett, COR, DES
Alex Gamble, DES, Chairperson, Codes Committee
Jenny Scroggins, Contracting Officer, DES

GREENBERG
CONSTRUCTION

4/4/2019

TO: Michael R. Weaver, P.E., BCEE, Authority Having Jurisdiction
Director, Division of Engineering Services
Office of Environmental Health and Engineering
Indian Health Service

FROM: David Blickenderfer

SUBJECT: AHJ Determination of Equivalency to IPC 608.17.4 for NCYRTC Water Supply System

2018 INTERNATIONAL PLUMBING CODE REQUIREMENT:

> **608.1 General.** A potable water supply system shall be designed, installed and maintained in such a manner so as to prevent contamination from nonpotable liquids, solids or gases being introduced into the potable water supply through cross-connection or any other piping connections to the system. Backflow preventer applications shall conform to Table 608.1, except as specifically stated in Sections 608.2 through 608.17.10.
>
> **608.17.4 Connections to automatic fire sprinkler systems and standpipe systems.** The potable water supply to automatic fire sprinkler and standpipe systems shall be protected against backflow by a double check backflow prevention assembly or a reduced pressure principle fire protection backflow prevention assembly.

DESIGN:

The design of the NCYRTC Water Supply System includes a single ground-level potable water storage tank that serves as a single source for the domestic water and fire protection systems. Downstream of the tank, a jockey pump and fire pump provide flow for the fire protection system. The design configuration does not provide adequate pressure to install a double check backflow prevention assembly between the potable water supply and fire pump. Instead, the backflow prevention assembly is installed between the fire pump and the remainder of the fire protection system. The intent of the backflow prevention assembly is to prevent contamination from nonpotable liquids, solids or gases being introduced into the potable water supply, per IPC 608.1. Therefore, the design constitutes a non-compliant cross-connection in violation of IPC 608.17.4, by not separating the potable water supply from the fire sprinkler system.

REQUEST FOR EQUIVALENCY DETERMINATION:

To address the non-compliant condition, Greenberg proposes to install NSF-61 certified jockey and fire pumps, and utilize only NSF-61 piping, including all other appurtenances, between the potable water storage tank and the backflow prevention assembly. We believe that this proposal meets the intent of the code by ensuring that the potable water supply only comes into contact with devices and appurtenances certified for such use. As such, we request the IHS Authority Having Jurisdiction to issue a Code Equivalency Determination approving of the design. We should note, this is our best solution within the parameters of the BOD and contract documents.

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Operations Manager/Project Manager

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