

SEWER & WATER COMMITTEE MEETING
APPROVED MINUTES

January 14, 2010

DIRECTORS PRESENT: Dan Wilkins, Erik Henrikson

STAFF PRESENT: Tony Laliotis, Director of Utilities
Matt Homolka, District Engineer
Coral Lochridge, Technical Services Supervisor
Carol Hackbarth, Administrative Secretary
Doug Olsen, Utilities Superintendent

PUBLIC PRESENT: Greg Lamb, Western Nevada Supply,
Bruce Thompkins, Power Boiler Sales

The meeting was called to order at 7:00 a.m. by Director Wilkins.

1. POLICY CLARIFICATION REGARDING WATER HEAT EXCHANGERS

Tony said we have come across water heaters that are heated with single-wall heat exchangers. We want to get clarification from the committee on how the District is to handle these and the potential cross-connection issue. Coral described single-wall heat exchangers and the potential for the contamination of public water. Inside the water heater is a coil filled with heated fluid from a boiler tank which then heats the water in the tank. Single-wall heat exchangers are constructed of only one wall around the fluid. Double-wall heat exchangers are constructed with double-wall coils that have a layer of air between each coil. If the owner chooses to use something besides potable water, glycol for example, inside the coil and the coil leaks there is potential for cross contamination of the District's water.

Erik asked if we have had any problems in our District. Coral said Barbara Smith had recently talked to someone with contaminated water. The property owner has had a single-wall tank for years and used potable water as the medium with no issues. The plumbing contractor came in and filled it with glycol instead and the glycol ended up getting into their drinking water system. He checked to make sure there wasn't an actual plumbing mistake or cross-connection which he didn't find any. It can be surmised, it wasn't verified, that there was a hole in the single-wall. And that's what allowed the glycol to get in and contaminate to the house system. It didn't contaminate the public water. We want to clarify that if there is going to be a single-wall tank that we are going to be requiring a backflow device or in lieu of that the customer can install a double-wall tank.

Dan asked if we have been requiring that operationally and it just isn't clarified in our policy or if we haven't been requiring it up to this point. Coral said it hasn't been required up to this point. IVGID and NTPUD have the same policy in place. She talked to Greg Lamb from Western Nevada Supply so she could understand the ramifications of this and to inform the committee of the impacts to our customers. Fiscally there is a cost difference between double and single wall tanks which can range from \$200 to \$350 depending on the size of the tank. Of course the efficiency will decrease when going from single to double wall coil. If every homeowner just used potable water in the system it wouldn't be an issue, but we can't be policing that. Because of the fiscal impact we want to offer alternatives to our customers. If they choose a single-wall they can install a backflow device. If they have it plumbed correctly they can use the same device as they do on the hydronic heater. Tony said boilers have always required a backflow device. Coral said we want to make sure we continue to play our role in protecting the public's

health and safety. We also want clarification so our suppliers and plumbing and heating contractors in the area are aware of this clarification so we don't get to the final inspection and have any surprises.

Dan asked if this would be a modification to our water ordinance. Coral said she is not proposing we reword the ordinance because the way it is written it still falls in that category. So it is just clarification on the implementation of the water ordinance? Yes. Coral said we sent a form letter to all of our customers with open water permits informing them of this clarification. We don't have that count at this meeting. Erik asked if this will only affect new construction; we are not going out looking for these? Correct. Tony said it will impact anything that is currently open or new permits.

Coral continued. We did modify our current permit application to include a question on boilers and heat exchangers. The third part of the outreach campaign if you will, is to put together one page letter, memo or press release to our suppliers, Western Nevada, Ferguson, Truckee Supply and CATT so that we can hopefully head off any last minute problems. Erik asked if introductions were made at the beginning of the meeting. Greg Lamb, Western Nevada Supply - hydronic department, and Bruce Thompkins, manufacturers' representative for an indirect fired water heater called Triangle Tubes (Power Boiler Sales) were introduced. Erik asked if they have any comments on this.

Greg Lamb asked if Appendix L was considered, and if it was, was there a reason it was not accepted. Coral explained Appendix L to the Directors. Appendix L of the Uniform Plumbing Code allows single-wall heat exchangers if they all of three requirements are met.

- 1) Heat transfer medium is either potable water or contains essentially non-toxic transfer fluids (food grade glycol i.e.).
- 2) The pressure of the heat transfer medium is maintained at less than the normal minimum operating pressure of the potable water system.
- 3) The equipment is permanently labeled to indicate that the only additives recognized safe by the FDA shall be used in the heat transfer system medium.

Erik asked why we don't think this is adequate safety. Coral explained that even if something is permanently labeled it is not always adhered to. The concern is that non food grade glycol will be introduced to a single-wall system and that it contaminates the home itself and/or the public water system. Matt clarified that all three items must be met. Yes. Greg explained a hydronic system typically has a pressure of 12 – 15 psi and has a pressure regulator on it. Greg also said most all of the glycol sold today is food grade glycol. There was discussion on the pressure and possible scenarios which the pressure requirement would not work properly. Bruce said if there is a failure of the heat exchanger the 'tell-tell' of it is the pressure relief valve (PRV) of the boiler blows. There should be a 30 lb PRV on the boiler. So we'll always have greater street pressure than that. The indication that something is wrong is the relief valve running. There are very few reasons for that. That's a call for a service call. It is not going to go the other way unless there is a simultaneous breakdown of the water pressure.

Tony said that is a lot of the basis for backflow: back siphon age and negative pressure in water mains caused by leaks, blow-outs, and shut-downs. That is the strong cause of the lot of backflow issues and why we require backflow on irrigation systems. The pressure won't always be above 30 psi in the water system. Backflow is a lot of what-ifs. We may never have a backflow incident, but we might. That is where backflow regulations and Title 17 directs us to. It is unfortunate and you feel like you are splitting hairs. But that is the level you take to protect the public water supply and to avoid the what-ifs. There is potential for back-siphon age for drawing the media back into the public water supply. Erik said we put the burden on the private property owners.

Coral has a concern that up here we have a lot of second homeowners. If there was a system with a relief valve failing and the puddle on the floor, it might not be months before it is noticed.

Greg said with the double wall heat exchanger it has a double wall with the center vented to atmosphere. So that's not even aimed to a drain. That's not ideal either. Erik – that probably doesn't contaminate the public water system? Bruce right if the pressure was lower. Tony said if there was a breach of the primary coil wall the glycol would enter the secondary area which is vented to atmosphere, and if it is pressurized it would push the glycol out the atmospheric vent and not be introduced into the water supply. Dan: If you have a hole in one pipe or the other you will find out about it because it will start venting? It's much less likely that you will have holes in both coiling linings.

Greg said one of the other concerns they have with California going to lead free brass in all potable fixtures, is the cost for the average backflow preventer is 30% greater than it was. A 1" or 1 1/4" device is about \$500 to \$600. Also, if you put a whole house backflow preventer at the incoming water to the house it would then end up in the crawl space which the inspectors don't want to crawl into to test. And how do you keep it from freezing? Or if you put the device in the mechanical room on the cold inlet to the water heater how do you prevent the glycol from going out into the hot water line crossing over and getting back into the system? The end user is losing efficiency with the double wall and having to pay for the extra costs. Tony said we are allowing the option to combine backflow devices for the boiler and the indirect cold water feed. The penalization would be maybe having to upsize it. Yes, it can contaminate the hot water supply. The goal of cross-connection is primarily to protect the public water supply. If there is a feasible way to protect the customer internally clearly we encourage that. Greg said the backflow would have to be the first fixture coming into the house to eliminate cross contamination for the customer. Tony said they would talk to NTPUD and IVGID and see what their resolution is to that issue.

Dan asked if a house has backflow already on their irrigation would it be covered. No, backflow on irrigation is usually before the house on a tee-off the main line and typically uses a different type of backflow device. We try to avoid backflow devices at the street because of freezing and in this instance it required Reduced Pressure devices which have to be a minimum of 12" above grade. Erik said this is the part he doesn't like very much. There is a small potential and we blanket the whole thing with more regulations and more expense. Doug Olsen noted that the expense does go to the homeowner but if there is a contamination or cross connection nobody goes after the homeowner; they go after the District. Erik thinks the three requirements on Appendix L seem like they are fairly effective. Does Appendix L address if the water main gets broken? Coral said no. Only if there was a pressure relief valve tied to a main break which doesn't happen.

Dan asked if this is something we want to take to the board or just the committee. Coral said her intention was to be able to have this discussion and if you felt comfortable to make a decision today. If you feel it needs to be brought to the board we could do that as well. Erik asked Dan what his pleasure was. Dan thinks it is something we should be able to handle at this level. Erik agreed. It is just another complication in life with an added expense. Dan shares his thoughts. Dan said at the end of the day he tends to fall on the side of protecting the public supply. He recognizes that is probably a 10th of a 100 percent likelihood of a problem. When you get a problem it can be a big one. That is the dilemma for him. If you buy an indirect heat exchanger you are buying a backflow device. Now you can potentially be buying two? Tony: yes, you can buy two, upsize one or go to a double wall tank.

Coral said her intention in revising the plan review form is so customers know this up front and they can communicate this to the plumbing contractor so they can end up with one backflow preventer. Yes, it would be larger and there would be a cost difference. Erik said it may not be different than two. Coral said over time it would be different because of the annual testing requirement and fees associated with that. Dan said as soon as you put in an indirect heat exchanger you are buying the hassle of a backflow if you consider getting it tested every year a hassle. So that's not adding anything on that front. You are either adding a cost to test two devices or you are upsizing an existing device. Erik said he can support Dan's direction. Bruce

said the product he represents, Triangle Tube Smart, doesn't have a coil in them. It is a stainless steel tank nested inside a carbon steel tank. The boiler water passes between the two tanks. He explained any pressure drop scenario. His point is that there is not a double wall alternative in this particular manufacturer. They would only have one option which is the backflow preventer. Greg said that in all of Western Nevada's supply area, Elko to Bishop, only IVGID requires the double wall. Washoe County has no issue with single wall heat exchangers. No other counties require this. Dan clarified that those are the building departments he is talking about as opposed to the water purveyors. Greg said none of the PUD's requires it - Truckee Donner PUD, TMWA. Coral explained NTPUD said they would require a backflow device on single wall heat exchangers. Greg said he'd have to get clarification from NTPUD.

Matt said the point that Coral is trying to clarify by doing this is that when they go out and do a backflow survey the ordinance allows them, the inspector could make this determination out in the field. Then it would be a surprise; this would clarify it up front. Coral said, as you have the role, we are trying to balance the public health and safety with the fiscal concerns of our constituents and find a happy medium. It might not always be happy.

Dan said he thinks what he heard is that Erik and he are not going to hassle us if we make this clarification to the policy. Erik said he thinks this is reasonable enough. Coral said we will send out some information to regional suppliers and CATT to help prevent last minute surprises. Any existing systems in the District are required to comply with Appendix L.

2. INITIATING A 3-YEAR SUNSET CLAUSE FOR PERMITS

Erik said this seems like a no brainer. Dan concurred. Erik said make the water consistent with the sewer. Refund their money minus an administrative fee. Tony said we will offer them the option to extend but if they are not going to move forward with their project they can get their money back minus the fee. Coral asked if the extensions could have a minor fee associated with that. Erik said it would be like \$20, a small administrative fee? That's ok. She suggested we only extend it for a year at a time as she foresees the District making changes to our Ordinances. Erik said a year at a time would be good. Dan clarified that anytime an extension is requested there would be a tertiary review of whether there has been a change in the Ordinance. If there has been, then a condition granting the extension would include complying with any modifications to the Ordinance that have occurred since the permit was pulled? The discussed how the County's permit extensions work. Coral said that when the one year extension comes up, a couple months in advance we would send out letters notifying people. If we don't receive a response in a certain timeframe we will close their permit and refund their money minus administrative fees. She wants the committee to be aware so they would not be blindsided. She suggests only a one year extension where they won't have to comply with any new regulations unless they are a public health and safety concern, for example the indirect heat exchangers. If someone has a permit open for more than four years they are going to have to come in and reapply. Dan and Erik said ok.

3. PUBLIC FORUM

There was no public comment.

4. ADJOURNMENT The meeting was adjourned at 7:42 a.m.

Carol Hackbarth, Administrative Secretary