

# Minutes: Submerged Closed Loop Heat Exchangers Advisory Committee

**Date** June 10, 2024, 1:30 – 4 p.m.

**Location** Hybrid Teams Meeting; Orville Freeman Building Room B107, 625 Robert St. N., Saint Paul, MN 55155

**Attendees** **In Person:** Pete Ellis (Geothermal Professional, alternate), Dan King (Geothermal Professional), Doug Klamerus (Geothermal Professional), Jeff Luehrs (Delegated Well Program), Jim Lubratt (Geothermal Professional), Luke Payne (City Representative, alternate)

**Virtually:** Jay Egg (Geothermal Professional), Faye Sleeper (Public member), Mike Steffl (Certified Representative), Jeremiah Strode (Geothermal Exchange Organization), Dave Traut (Certified Representative)

**Absent:** Tim McCollough (City Representative), Scott Niesen (Minnesota Geothermal Heat Pump Association), Danny Nubbe (Certified Representative)

**MDH:** Jennifer Weier (WMS Central Region Hydrologist Supervisor), Mark Malmanger (WMS Northern and Southern Region Hydrologist Supervisor), Jon Olson (WMS Technical Unit Supervisor), Avery Guertin (WMS Regulatory Coordinator)

## Acronyms and Terms

DNR – Minnesota Department of Natural Resources

MDH – Minnesota Department of Health

NSF – National Sanitation Foundation

SCLHE – Submerged Closed Loop Heat Exchangers

WMS – Well Management Section

## Welcome and updates (Avery Guertin, WMS Regulatory Coordinator)

Guertin thanked committee members (members) for continuing to provide valuable feedback on draft possible rules. Members and alternates introduced themselves and stated their representation on the advisory committee. Guertin reminded members the June 28, 2024, advisory committee meeting was

rescheduled to July 12, 2024. Members did not request corrections to the May 31, 2024, advisory committee meeting minutes. Guertin asked members to provide input on the additional notice plan, which identifies entities who will be notified of this rulemaking, and cost analysis. She will follow-up with the members reiterating the request for input.

Members were asked to consider the needs of current technologies and what future needs may be for submerged closed loop heat exchangers as they review draft rule language.

## System installation language (Avery Guertin, WMS Regulatory Coordinator)

### Subpart 4. Pressure test.

Item A: Ellis suggested clarification on the need for fluid such as potable water to pressure test. Guertin referenced Item F when responding with the drafted authorization to use potable water during a pressure test and clarified the intent of the draft rule language to prevent circulation of fluids ahead of an initial pressure test.

Item B: Members had no comments.

Item C: King suggested using “building or buildings”.

Item D: King suggested using “electronic systems such as” to be consistent with recommended language for installation notification requirements discussed during the last meeting.

Item E: Steffl expressed concern about emergency notification being able to meet the requirements of Item D. Guertin clarified Item E excepts a system owner for Item D, subitem 1 and 3 in the event of an imminent threat to public health or safety.

Item F: Klamerus asked for clarification on “at ground surface” as mentioned in subitem 3. He suggested the measured pressure be at the ground surface by the wellhead. King suggested subitem 3 be “conducted” not “tested”. Traut asked where the pressure test needs to take place. Weier noted it practically occurs in a building but can consider if a test needs to occur elsewhere. King suggested flexibility may be helpful in case a test needs to occur somewhere other than a building.

Item G: Members had no comments.

Item H: Members had no comments.

Item I: Ellis asked for clarification on a device. Guertin noted the definitions will be discussed later and may help clarify this question. She offered to revisit this item after members had an opportunity to discuss the device definition.

### Subp. 5. Heat transfer fluid.

Item A: Members had no comments.

Item B: King asked for clarification on the difference between the proposed rule and what is written in Minnesota Statutes, chapter 103I. MDH noted the wording in the draft rule was changed to align with other rule parts. Sleeper asked for examples of additives and why they may be used. King and Egg described additives may be used to inhibit microbial and bacterial growth, or corrosion.

Item C: King asked if “approved by” means approved by MDH or by meeting the NSF-60 standards. He added the desire for the industry to use best practices and have flexibility to use additives without requiring permit modifications each time a new additive is needed. Members discussed the interpretation of drinking water concentrations as required by NSF-60 standard. Traut asked if UV tube would be considered in a requirement to control bacterial growth, or if it would be equipment related. Weier noted this has not been considered at this point.

Guertin informed members the discussion of this language wraps up the new language proposals to address permitting and installation of SCLHE. She asked members for comments on any additional new topics that may need to be addressed in the draft rule. Guertin noted there will be additions to the existing Minnesota Rule, chapter 4725, language as needed. Members will be notified as soon as documents are available for review.

Sleeper asked about follow-up on the thermal pollution or impact discussion from the May 31<sup>st</sup> meeting. She added concern with increasing temperatures and impacts to trout streams. Luehrs suggested this may be a DNR issues if in proximity to trout streams, and suggested consultation when them. Lubratt suggested consulting with other states regarding how thermal impact is being addressed.

King asked if there would be additional language proposals other than what was presented to the advisory committee. Guertin noted there will likely be places within the existing Minnesota Rule, chapter 4725, where revisions may be needed. She explained MDH prioritized presenting the new draft language for the installation and permitting of SCLHE to the advisory committee. Luehrs asked if revisions would be available before the next meeting. Guertin stated drafts will be sent to members with as much notice as possible.

## Proposed rule draft definitions (Avery Guertin, WMS Regulatory Coordinator)

Guertin provided illustrations as a point of discussion.

Submerged closed loop heat exchanger device definition: Members had no comments.

Submerged closed loop heat exchanger piping definition: Guertin prefaced this discussion by acknowledging the discussion at the last advisory committee meeting to separate this definition by horizontal piping and piping in the well. Ellis asked if wells located in buildings had been considered. Weier noted the well code does not allow for a well to be constructed within a building. She added MDH would not consider this type of well for a SCLHE system as current well code prohibits construction in a building. King noted this should be considered in the

future. King also added lateral piping above the ground does not appear to be included in the definition. He asked for flexibility in the event this becomes part of construction for SCLHE systems. Ellis noted there could be equipment outside and suggested this could be captured in a permit request. Traut commented piping above ground surface may not be the best. Klamerus shared instances where piping could be above ground and suggested removing "below ground". Egg noted there are rooftop HVAC systems on commercial buildings and expressed concerns for including "HVAC" in the definition. Traut commented there are differences in piping materials used in a well versus outside of a well.

Submerged closed loop heat exchanger system definition: Ellis shared examples where systems are connected from one building to the next. Traut agreed with the use of "one or more" SCLHE but added "single building" adds confusion. Guertin reminded members the need to define an extent for a given system. She added a given system is permitted and the number of permits is not limited. King noted there could be reasonable parameters between a series of buildings such as on a campus, versus a single building like a house or garage. He recommended "building or network of buildings". Ellis suggested "contiguous buildings". Lubratt provided an example of school buildings versus a city district. Egg suggested "connected to a single building or geothermal network". Luehrs asked members if tonnage would be worth considering. Traut commented the language should make sense for what is needed to manage the permit.

## 'Parking lot' topics of interest

King suggested isolation distances should be considered to allow SCLHE systems to be closer if wells are non-consumptive. Traut agreed this should be considered if wells are non-consumptive. Members discussed if wells are authorized for dual use that isolation distances should remain as is in the rule chapter. Luehrs noted variances can be considered for setback distances.

Members discussed use of existing wells or new wells in SCLHE systems. Luehrs asked grout to be considered as part of that discussion. Members discussed concerns for use of bentonite grout with older well construction. Members discussed evaluation of grout should be on a case-by-case basis, assuming the well construction was properly documented.

## Open Forum

Guertin opened the meeting to public comment. There were no attendees representing the public interested in providing comment.

## Adjournment

Next meeting July 12, 2024.

SUBMERGED CLOSED LOOP HEAT EXCHANGERS ADVISORY  
COMMITTEE

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