

Minutes: Submerged Closed Loop Heat Exchangers Advisory Committee

Date July 19, 2024, 9 – 12 p.m.

Location Hybrid Teams Meeting; Orville Freeman Building Room B145, 625 Robert St. N., Saint Paul, MN 55155

Attendees **In Person:** Pete Ellis (Geothermal Professional, alternate), Dan King (Geothermal Professional), Doug Klamerus (Geothermal Professional), Danny Nubbe (Certified Representative), Luke Payne (City Representative, alternate)

Virtually: Ryan Dougherty (Geothermal Professional, alternate), Jim Lubratt (Geothermal Professional), Jeff Luehrs (Delegated Well Program), Justin Mariniak (Geothermal Professional, alternate), John Rhyner (Geothermal Professional, alternate), Jeremiah Strode (Geothermal Exchange Organization), Dave Traut (Certified Representative)

Absent: Jay Egg (Geothermal Professional), Tim McCollough (City Representative), Scott Niesen (Minnesota Geothermal Heat Pump Association), Faye Sleeper (Public member), Mike Steffl (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

IMC – 2024 International Mechanical Code

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 welcomed committee members and thanked them for continuing to provide feedback on the draft possible rules. The meeting would focus on the newly drafted SCLHE permitting and installation requirements as well as the modifications to the existing Minnesota Rules, chapter 4725, language.

Additional Notice Plan (Avery Guertin, WMS Regulatory Coordinator)

Guertin asked members to consider additional people or groups, both interested or affected by the proposed rulemaking, that MDH should include in the Additional Notice Plan. Members noted Minnesota Geothermal Heat Pump Association, Geothermal contractors, Utility groups such as Minnesota Municipal Utilities Association, and Minnesota Section Water Well Association could be added to the Additional Notice Plan. Guertin encouraged members to continue to consider who could be noticed for this rulemaking. Traut noted people who manufacture products may also have some insight or want to be notified.

Cost analysis (Avery Guertin, WMS Regulatory Coordinator)

Guertin asked members for input on the cost for people or businesses who want to install SCLHE systems, drillers who might conduct the work to installed SCLHE systems, etc. King noted several considerations that may impact cost, but did not provide a cost estimate, included requirements for:

1. permit application groundwater contamination;
2. regular maintenance and removal of the SCLHE device;
3. isolation distances including costs for a variance and identifying a complying location; and
4. climate goals.

Olson asked members if they knew of any federal regulations that may be impacted by this rulemaking. Prail added MDH has not identified any to date but asked if members become aware of federal regulations to bring them forward. King noted the Natural Gas Innovation Act could be another policy encouraging geothermal systems in support of climate goals.

Expedited rulemaking (Avery Guertin, WMS Regulatory Coordinator)

Guertin mentioned the draft rule language leaves out some topics the committee has discussed previously. She noted a few items to consider as members discuss the draft rule language.

1. MDH is actively working with other regulatory agencies to gather necessary information needed to adequately address the proposed permit application groundwater contamination requirements. The draft will likely remain unchanged until MDH has the information needed to consider revisions to this subitem requirement.
2. Considerations for revision because of information revealed by monitoring data, isolation distances, and screen configurations are likely to be addressed during an expedited rulemaking process as authorized by Minnesota Statutes, section 103I.

SCLHE rule draft definitions (Avery Guertin, WMS Regulatory Coordinator)

Guertin noted the draft rule contains the abbreviation “SCLHE” for “submerged closed loop heat exchanger”. King mentioned the SCLHE piping definition does not contain reference to conveying heat transfer fluid.

King added the SCLHE system definition could include “network of building exchanging thermal energy,” because the piping between buildings should not be considered SCLHE piping. Weier asked if there could be material differences. King stated he was not aware of any but deferred to the other members. Nubbe asked about rules pertinent to piping in a building. Weier clarified that MDH authority was not for piping in a building.

Guertin mentioned the SCLHE system owner definition is new since the last version. This definition was created to add clarity to a person who “owns and is responsible for overseeing” a SCLHE system. King added that this definition seems fine because it covers an owner who might contract with someone to perform work but is ultimately responsible for the SCLHE system.

Open member discussion (Avery Guertin, WMS Regulatory Coordinator)

4725.0100 Definitions.

Guertin noted the existing Minnesota Rules, chapter 4725, definitions proposed for change in the draft include remedial well, water-supply well, and well. She added the proposed water-supply well definition revision does not include a remedial well anymore and explained this as an intermediate fix to the environmental well changes. Luehrs asked if remedial well is defined in Minnesota Statutes. Guertin and Weier noted that it is covered under the environmental well definition. Another rulemaking would be necessary to fully address those changes related to environmental wells.

4725.0150 Incorporations by reference and abbreviations.

Weier noted the IMC reference is included because DLI is working to evaluate and incorporate the 2024 IMC but likely will not adopt rule revisions until 2026, at the earliest. The intent is to ensure the draft rule for SCLHE is consistent with what DLI intends to adopt and references current requirements for standards and materials. Nubbe asked about cathodic protection borings, which Weier confirmed are not regulated by MDH.

4725.0200 Application to all wells and borings: Members had no comments.

4725.0350 Fees applicable to this chapter: Members had no comments.

4725.0475 Activities requiring licensure or registration.

Ellis asked for clarification on the licensure required for installing a SCLHE. Weier noted a well contractor license (full) is required to install and pressure test SCLHE systems. A bonded mechanical contractor or licensed plumber could also pressure test the system. Ellis suggested geothermal contractors would be interested in doing this work. Weier noted DLI also thought

they may be but was not sure to what extent they would be interested. Geothermal contractors would only be allowed to install SCLHE piping between the building and the well, and they could not make the connection to the well casing. Ellis expressed concern over improper installation of these systems and noted the importance of contractors being aware that installation requires a well contractor license.

4725.1834 Submerged closed loop heat exchanger permit.

Subpart 1. General requirements: King noted item C is unnecessary because it poses no health concerns.

Subp. 2. SCLHE system permit application: Members had no comments.

Subp. 3. SCLHE permit application denial: Members had no comments.

Subp. 4. SCLHE system permit conditions: Members had no comments.

Subp. 5. SCLHE system permit modifications: Members had no comments.

Subp. 6. Installation record: Members had no comments.

Subp. 7. SCLHE system maintenance: King noted a pressure tested SCLHE system should have the ability to circulate treatment chemicals that are ANSI/NSF-60 certified. In the event of a leak, the SCLHE in the well would be removed immediately. He commented that dilution would occur immediately in the well. Weier asked for clarification if requiring treatment chemicals be ANSI/NSF-60 certified would remedy the need to remove the SCLHE in the well should a leak occur. King suggested it would. Weier asked for clarification if pressure testing would be valid years after an initial pressure test. Members noted the ANSI/NSF-60 certification and leak detection would assure minimal risk. Traut noted MDH approval of leak detection plan as part of the permit. Weier confirmed there is a leak detection system plan submitted as part of the application that the system owner should be following.

Subp. 8. SCLHE system disclosure and ownership: Members had no comments.

Subp. 9. Termination and removal: Nubbe asked about abandonment after one year and if a maintenance permit could be obtained for not-in-use SCLHE systems. Weier noted Statute does not contain language to authorize adding a maintenance permit requirement for SCLHE systems. Nubbe asked if variances could be considered. Weier added it could be considered through a variance process if language was in rule.

King expressed concern over the appropriate timeframe that would require the SCLHE to be removed in the event it was inoperable for more than one year. Nubbe noted that some of these SCLHE systems take two to three years to install before they are operational. Weier clarified that the removal requirement is for the SCLHE and not for sealing the water-supply

well. King suggested the removal requirement could be related to the age of the SCLHE system. Nubbe suggested the language be focused to notifying MDH.

4725.1842 Approval of construction permits: Members had no comments.

4725.1845 Denial of construction permits: Members had no comments.

4725.2010 Applicability: Members had no comments.

4725.3725 Chemical treatment and rehabilitation: Nubbe asked about using chemicals in the upper portion of the well. Weier noted this has been addressed in the latest revision.

4725.4250 Limestone or dolomite water-supply wells: Members had no comments.

4725.5475 Hydrofracturing water-supply wells: Members had no comments.

4725.5550 Water-supply well disinfection: Members had no comments.

4725.5475 Remedial water-supply wells: Members had no comments.

4725.7050 Bored geothermal heat exchangers.

Nubbe asked about using SDR 17 verses SDR 15. Weier noted it comes from the IGSHPA standard. Nubbe asked about manufacturer availability for this type of piping. Malmanger clarified the requirement is to set a minimum and would not exclude SDR 15 from use.

4725.7075 Submerged closed loop heat exchanger installation.

Subpart 1. Construction: Members had no comments.

Subp. 2. SCLHE device: King expressed appreciation for the draft revisions.

Subp. 3. SCLHE piping: Nubbe asked about the IMC table and how it ties to these systems. Weier stated the table has hydronic piping material requirements and is for the piping inside the well to the SCLHE device. She added this is also a more inclusive list of materials and goes beyond plastics. Nubbe asked if the 2024 IMC accounts for every material that may be used in the SCLHE system. Weier confirmed that the tables account for all materials anticipated for use in these systems. Ellis noted there are items listed on the tables that would not be used. Weier clarified MDH understands industry may not use some of the materials because they would not be suitable for the SCLHE technology, but they do not pose a contamination concern to the groundwater. King asked about updating the year reference if the industry changes general practices. Weier noted a variance could be considered if the industry wants to use new materials that are not part of the 2024 IMC and asked if members knew of any materials industry is considering or using now that MDH should add to the rule. Guertin added that future rulemaking to address new materials could follow a similar process to that of the Portland cement rules.

Subp. 4. Pressure test: Members had no comments.

Subp. 5. Heat transfer fluid: King asked for clarification on the redundancy of the ANSI/NSF-60 certified requirements in the draft rule. Weier noted these references were coming from language in the existing rule chapter but noted the requirements in the rule draft can be combined.

Guertin asked members if they had any additional thoughts or comments on the most recent rule draft. Members had no additional comments.

Next steps (Avery Guertin, WMS Regulatory Coordinator)

Guertin noted the next step is to pause the rulemaking advisory committee meeting to provide feedback on the SCLHE system permitting and installation rule draft. MDH is working to consider all comments received thus far in a next draft rule revision. She invited the members to submit additional comments through the rulemaking webpage comment form or by email. Guertin reminded committee members that MDH will likely address needed revisions, isolation distances, and screen configurations as part of an expedited rulemaking process following the adoption of these rules.

Prail provided an overview of the expedited rulemaking process. She expressed the speed at which expedited rulemaking occurs is fast in comparison to a regular rulemaking and does not require public comment. Prail encouraged members to watch for an email about this rulemaking.

King asked about an opportunity for one final meeting prior to posting the final draft rule for SCLHE permitting and installation. Guertin noted the discussion MDH is having with other regulatory agencies regarding the permit application groundwater contamination requirements will likely result in a revision to the rule draft before it is noticed for adoption in November, but isolation distances and screen configurations will likely be addressed during the expedited rulemaking process. She added while the committee may not gather that revised drafts will be posted to the rulemaking website and members would be notified by email.

Guertin acknowledged the time commitment of members participating on the advisory committee and thanked them for providing valuable feedback. She invited members to join a subcommittee group which will begin discussions to gather information on isolation distances and screen configurations as they relate to SCLHE.

Members conducted the “fist to five” voting on how comfortable they are with the rule draft as presented in the last revision.

Open Forum

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

Adjournment

Next meeting: paused.

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8/2/2024

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