



THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES

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MEMORANDUM

VIA EMAIL ONLY

TO: All Geothermal, Natural Gas, Propane, and Steam Operators

FROM: Richard Enright, Director,
Pipeline Safety Division, Department of Public Utilities

RE: Networked Geothermal Safety Guidelines

DATE: July 31, 2024

To promote and facilitate the development of geothermal energy networks throughout the Commonwealth, the Pipeline Safety Division (“Division”) of the Department of Public Utilities (“Department”) issues the following Networked Geothermal Safety Guidelines (“Guidelines”). These Guidelines are intended to apply only to closed-loop geothermal systems of interconnected ground-source heat pumps. These systems employ the earth’s consistent subsurface temperature to deliver renewable and affordable heating and cooling to consumers. These Guidelines are intended to support the development of this clean and non-combustible energy resource while prioritizing the safety and health of operator personnel, the public, and the environment.

Pursuant to 220 CMR 69.01 *et seq.* and Delegation Order D.P.U. 18-44-B (2020), the Division will conduct inspections and regulate the operation, maintenance, and construction of networked geothermal projects in the Commonwealth. The Division will update and amend these Guidelines as warranted to reflect evolving developments in science and technology, as well as expanding reporting of technical data. The Division intends these Guidelines to ensure that the Commonwealth’s geothermal operations are regulated safely and effectively.

GUIDELINES:

1. For the purposes of these Guidelines, a Utility Networked Geothermal System (“Networked Geothermal System”) is a system of interconnected ground-source heat pumps that uses the subsurface temperature of the earth to deliver heating and cooling to buildings on a closed loop of pipeline. Construction of these systems will enable the replacement of gas and other non-renewable energy infrastructure with utility-scale, non-emitting renewable thermal energy infrastructure.
2. For the purposes of these Guidelines, a Networked Geothermal Operator (“Operator”) is a person, firm, partnership, association, or corporation organized or operating under the laws of the Commonwealth that is operating a Networked Geothermal System to or for the public for compensation within the Commonwealth. An Operator shall not include any entity operating a Networked Geothermal System exclusively on private property and solely for use by the entity or the entity’s tenant(s), and not for distribution or sale.
3. Operators shall comply with all existing state regulations, including but not limited to: Mass DEP guidelines around Ground Source Heat Pump wells; 220 CMR 99.00; G.L. c. 164, §§ 40 through 40C; DTE 98-22; NSTAR Gas Company d/b/a Eversource Energy D.P.U. 19-120; and Boston Gas Company d/b/a National Grid D.P.U. 21-24.
4. Operators should install, test, and operate Networked Geothermal Systems in accordance with the best available technical standards, including but not limited to: CSA / ANSI C448, and ASTM F2164.
5. At least 90 days prior to the start of construction of any new Networked Geothermal System, the Operator shall provide a Notice of Intent to the Pipeline Safety Division (“Division”). The Notice of Intent shall include the preliminary site plan and the estimated number of customers. The Operator shall provide a Notice of Construction, with updated information, at least 10 days prior to the installation of 100 feet or more of main, or one or more bore holes.
6. Operators shall have and follow written construction, operating, and maintenance procedures which shall be made available to the Division for review.
7. Operators shall have and follow an Emergency Response Plan comparable to those required by 220 CMR 19.00. In the event of an outage or leak in the Networked Geothermal System, Operators shall notify the Division according to its Telephonic Incident Notification requirements.
8. Operators shall have and follow a worker qualification plan (“Operator Qualification Plan”) prescribing the minimum requirements for individuals performing covered tasks on a Networked Geothermal System facility. A covered task shall be identified by the Operator as any task performed on a Networked Geothermal System that affects the

integrity of the system, and is considered a construction, operation, or maintenance activity. Qualification records must be available to the Division upon request.

9. Records produced during construction, operations, and maintenance shall be traceable, verifiable, and complete. Operators shall retain records for the life of the system.
10. Instruments of service shall be reviewed and stamped by a Professional Engineer, comparable to the requirements of M.G.L. c. 164, § 148.
11. Operators shall file an annual report with the Division in a format to be determined by the Division. The report shall include details about the Operator's Networked Geothermal System from the preceding calendar year including miles of main, miles of services, number of customers, number of leaks, causes of leaks, excavation damage, and outages in customer hours.