

Clark, Cynthia (Bridge)

From: Kevin Rafferty [kaffertk@oit.edu]
Sent: Monday, February 11, 2002 10:59 AM
To: cclark@idwr.state.id.us
Subject: heating requirements

Cynthia:

I doubt that the geothermal fluid from the well is being used for cooling purposes in any of these buildings. The temperatures required for operating a cooling system are typically above 200 F. Some of the systems may use heat pumps but if the water from the well is above about 95 F, they are probably not using it in the cooling season.

There are a number of ways to approach the problem you pose. Some buildings, if they are fairly new (or recently updated) include controls for the HVAC system that monitor and store a great deal of information. Among this is normally the total energy used along with the distribution for heating, cooling, lighting etc. These are often referred to as EMCS or DDC systems and are characterized by a computer on the "front end" of the system for monitoring. As a result the first question is do the buildings you are interested in have this type of control system in place. If so the energy information you are looking for may be available in the systems computer.

A second approach would be to simply use typical energy use information for buildings of similar type. Data in Btu/sqft yr is published by the Energy Information Administration (part of USDOE) and is available on their web site.

In order to calculate any energy use information for the facilities it would be necessary to know a good deal about the type of systems installed and the controls used for the systems. Are they direct use or heat pump systems? are they using heat recovery for ventilation air? Is the heat used only for space heating or domestic hot water as well, Are any of the uses in series? etc etc etc. This approach would require the services of someone familiar with HVAC systems and controls.

Another possibility is to base the calculations on an engineering feasibility study. many projects like this were installed after a feasibility was done. Invariably,, such studies calculate the energy savings from using the geothermal.

Fell free to call if you would like to discuss this in detail or if you have questions.

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