

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STELLAR ENERGY AMERICAS, INC.,
Petitioner,

v.

TAS ENERGY, INC.,
Patent Owner.

Case IPR2015-01212
Patent 6,318,065 B1

Before JOSIAH C. COCKS, BARRY L. GROSSMAN, and
MICHAEL L. WOODS, *Administrative Patent Judges*.

GROSSMAN, *Administrative Patent Judge*.

DECISION
REQUEST FOR REHEARING
37 C.F.R. § 42.71

I. INTRODUCTION

Stellar Energy Americas, Inc. (“Petitioner”) filed a Motion For Rehearing (Paper 15, cited as “Req. Reh’g.”) requesting rehearing of the Board’s decision (Paper 13, cited as “Decision”) declining to institute *inter partes* review of claims 2, 7, 10, and 11 of Patent No. 6,318,065 (the “’065 patent”). Petitioner asserts “the Board ‘misapprehended or overlooked’ certain statements in a prior art reference demonstrating that the elements recited in the challenged claims were well known in the art.” Req. Reh’g. 1. According to Petitioner, the Board misapprehended or overlooked a statement in the ASHRAE Thermal Storage reference (Ex. 1009)¹ that “[w]ater becomes **less dense** as its temperature is lowered from 39°F to freezing (Table I). Therefore, stratification would not work in this range, although stratified storages have been charged with water **as low as 37 .8 °F** with few problems.” Req. Reh’g. 3 (citing Ex. 1009, 5).²

For the reasons stated below, we deny Petitioner’s request.

¹ Exhibit 1009 is asserted by Petitioner to be ASHRAE Handbook, HVAC Applications, Chapter 39, published in 1991. Pet. 9. As stated in our Decision, Exhibit 1009 has no indicia as to its source or date. Decision 5, fn.1. We stated that, for purposes of the initial Decision to institute a trial, we accepted Petitioner’s unchallenged representation that ASHRAE Thermal Storage is available as a valid reference against the ’065 patent. *Compare Case IPR2014-01347*, slip op. 12 (PTAB Jan. 6, 2016) (Paper 25) (in a *Final Decision*, granting a patent owner’s motion to exclude an asserted reference because there was no persuasive evidence authenticating the source or date of the asserted reference).

² The emphasis in the quoted material does not appear in the original text of Exhibit 1009. Petitioner added the emphasis in its Request for Rehearing, which we quote, and therefore we reproduce the quote as modified by Petitioner.

II. DISCUSSION

When rehearing a decision on institution, the Board reviews the decision for an abuse of discretion. 37 C.F.R. § 42.71(c). The burdens and requirements of a request for rehearing are stated in 37 C.F.R. § 42.71(d):

(d) Rehearing. . . . The burden of showing a decision should be modified lies with the party challenging the decision. The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply.

A. Claims 2, 10, and 11

Independent claim 2 requires a “charge cycle” which, among other things, provides “chilled water that is below the temperature of maximum water density,” in an amount that “is sufficient to lower the average temperature of the volume of stored water to a temperature that is below the temperature of maximum water density.” Claims 10 and 11 depend from claim 2.

The fact that we did not cite the specific sentence or sentences on which Petitioner relies in its Request for Rehearing does not mean that we overlooked or misapprehended any portion of the ASHRAE Thermal Storage reference, or abused our discretion, in deciding whether claims 2, 10, and 11 would have been obvious based on Andrepont³, Mornhed⁴, and ASHRAE Thermal Storage.

In our Decision, we recognized Petitioner’s argument that ASHRAE Thermal Storage discloses stratified storage both above *and below* the temperature

³ “Summer Peaking Capacity Via Chilled Water Storage Cooling of Combustion Inlet Air.” Proceedings of the Am. Power Conference, Vol. 56-II (Ex. 1010).

⁴ “Innovations in District Heating and Cooling 1984-1994 and Their Economic Impact,” ASHRAE Transactions: Symposia (Ex. 1008).

of maximum density of water. Decision 22 (citing Pet. 9–10, Ex. 1009, 5). We acknowledged the well-accepted scientific principle, discussed in the Specification, that the temperature of maximum water density is about 39.2° F for pure water, dependent on atmospheric conditions or chemical additives. *Id.* at 23. Thus, the disclosure in ASHRAE Thermal Storage that “stratified storages have been charged with water as low as 37.8 °F *with few problems*” (Ex. 1009, 5) (emphasis added) discloses it is possible to achieve stratified storage at temperature below the temperature of maximum water density for pure water at normal atmospheric conditions.

Immediately preceding the clause on which Petitioner relies, however, ASHRAE Thermal Storage also discloses that “[w]ater become less dense as its temperature is lowered from 39°F [the approximate temperature of maximum water density for pure water under normal atmospheric conditions] to freezing (Table I). Therefore, *stratification would not work in this range . . .*” *Id.* (emphasis added). ASHRAE Thermal Storage suggests, at best, that lowering the temperature more than 1.2° F below the temperature of maximum water density for pure water at normal atmospheric conditions *will not work*. We considered this complete disclosure of the reference in determining whether it was reasonably likely that claim 2 would have been obvious based on Andrepont, Mornhed, and ASHRAE Thermal Storage.

In our Decision, we focused on the requirement in independent claim 2 that: in the charge cycle, the chillers provide chilled water to the thermal storage tank at a temperature that is (1) “below the temperature of maximum water density,” and (2) “is sufficient to lower the average temperature of the volume of stored water to a temperature that is below the temperature of maximum water density.”

Decision 23 (citing Ex. 1001, col. 14, ll. 50–59). We noted specifically that “claim

2 is *not* limited to pure water.” *Id.* Claim 2 expresses the temperature of water provided to the storage tank as a variable physical property of water, i.e., the “temperature of maximum water density.” Additionally, we pointed out that the Specification discloses a wide variability of the temperature of maximum water density in the disclosed embodiments that range “from about 20° F. to about 39.2° F.” *Id.* at 23–24 (citing Ex. 1001, col. 3, ll. 35–40). The disclosed temperature of 37.8° F in ASHRAE Thermal Storage clearly is not below 20° F, which, as disclosed, is within the scope of the claim term “temperature of maximum water density,” as interpreted for purposes of our Decision. Petitioner also does not point us to any persuasive disclosure that ties the temperature of water introduced during the charge cycle to the specific requirements of claim 2, which are that the chilled water is provided at a temperature that is (1) “below the temperature of maximum water density,” and (2) “is sufficient to lower the average temperature of the volume of stored water to a temperature that is below the temperature of maximum water density.”

We acknowledged Petitioner’s argument that “ASHRAE Thermal Storage discloses charging a stratified tank at temperatures below the temperature of maximum water density of 39.2° F.” *Id.* at 24 (citing Pet. 44, Ex. 1004, 40–42). We also acknowledged Dr. Reindl’s testimony that “ASHRAE Thermal Storage discloses ‘that temperatures below the temperature of maximum water density may be used in thermal storage tanks with few problems.’” *Id.* at 24 (citing Ex. 1004 ¶ 40). We specifically cited Dr. Reindl’s testimony that “ASHRAE Thermal Storage discloses that ‘there is *some flexibility* in storage operating at a temperature condition below 39.2° F.’” *Id.* (citing Ex. 1009 ¶ 41) (emphasis added). Dr. Reindl testifies “[a]s a *practical matter*, operating water chillers *near* the temperature of maximum density of water may include a range of temperatures

above and below the temperature of maximum density.” Ex. 1004 ¶ 41. A disclosure that charging water must be *near* the temperature of maximum water density, within some practical tolerance range, is *not* what is claimed in claim 2. Claim 2 is not limited to *some flexibility* in operating at a temperature *near* 39.2° F, within some practical operating tolerances. We did not overlook or misapprehend the ASHRAE Thermal Storage disclosure on which Petitioner relies. We determined that it was not persuasive to establish, in conjunction with the other references, that there was a reasonable likelihood that claim 2 was not patentable. Neither Petitioner’s argument nor Dr. Reindl’s testimony address the specific limitations in claim 2 discussed above.

Petitioner also suggests that we misapprehended or overlooked evidence because we did not address the two specific requirements in claim 2 discussed above. Req. Reh’g. 4. We, in fact, discussed these two requirements specifically. Decision 23, 25, 26. As stated in our Decision:

Petitioner has not directed our attention to any persuasive disclosure in Andrepont, Mornhed, or ASHRAE Thermal Storage that establishes a relationship between the numerical temperature disclosed in the references and the temperature of maximum water density such that during the charge cycle, chilled water (1) “below the temperature of maximum water density” is provided to the thermal storage tank, and (2) the provided chilled water “is sufficient to lower the average temperature of the volume of stored water to a temperature that is below the temperature of maximum water density,” as required by claim 2.

Id. at 26.

Claim 10 depends from claim 2 and requires the temperature of the stored water to have a temperature of from about 34° F to about 40° F. Ex. 1001, col. 16, ll. 13–15. Claim 11 depends from claim 2 and requires the output of the gas turbine power plant system to be from about 50 megawatts to about 250 megawatts. *Id.* at col. 16, ll. 16–18. Claims 10 and 11 include all the elements and

limitations of claim 2, from which they depend. Our analysis above applies equally to claims 10 and 11.

Accordingly, we are not persuaded that we abused our discretion, or overlooked or misapprehended the ASHRAE Thermal Storage reference in our consideration of claims 2, 10, and 11.

b. Claim 7

Claim 7, dependent from claim 1, requires that the chilling water removed during the charge cycle is sufficient to chill substantially all of the water in the thermal water storage tank to a temperature below the temperature of maximum water density. Ex. 1001, col. 16, ll. 1–5. Petitioner repeats its assertion that we overlooked or misapprehended the same disclosure in ASHRAE Thermal Storage discussed above. Req. Reh’g. 5–6.

For the reasons discussed above in our analysis of claim 2, we are not persuaded that we abused our discretion, or overlooked or misapprehended the ASHRAE Thermal Storage reference in our consideration of claim 7.

III. CONCLUSION

Petitioner has not persuaded us that the determination not to institute an *inter parte* review of claims 2, 7, 10, and 11 of the ’065 patent was an abuse of our discretion, or that we misapprehended or overlooked any matter. Accordingly, we deny the request for rehearing.

IV. ORDER

For the reasons given, it is

ORDERED that the request for rehearing is *denied*.

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