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**Datasheet for the decision
of 21 April 2017**

Case Number: T 1672/15 - 3.3.05

Application Number: 06761180.6

Publication Number: 1910234

IPC: C02F3/30, B01D53/22, C02F3/06,
C02F3/00

Language of the proceedings: EN

Title of invention:
Method for treating flue gas desulfurisation blowdown water

Patent Proprietor:
Zenon Technology Partnership

Opponent:
Evoqua Water Technologies LLC

Headword:
Water treatment/ZENON

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
All requests - extension beyond the content of the application
as filed (yes)

Decisions cited:

Catchword:



Beschwerdekammern
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Case Number: T 1672/15 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 21 April 2017

Appellant: Zenon Technology Partnership
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 29 May 2015
revoking European patent No. 1910234 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman E. Bendl
Members: J.-M. Schwaller
R. Winkelhofer

Summary of Facts and Submissions

- I. The present appeal lies from the decision of the opposition division to revoke European patent No. 1 910 234 on the grounds that none of the requests then on file met the requirements of Article 123(2) or (3) EPC.
- II. With the grounds of appeal, the appellant contested the decision and requested that the patent be maintained as granted, i.e. with claim 1 reading:

"1. A process for the treatment of a liquid waste stream comprising flue gas desulfurization blow down water (202) comprising

- (a) physical and/or chemical pretreatment of the liquid to remove suspended solids and to soften the liquid;*
- (b) ammonia stripping of the liquid;*
- (c) anoxic treatment to remove nitrate;*
- (d) a second anoxic treatment after step (c) to remove selenium and anaerobic treatment to remove heavy metals; and*
- (e) membrane separation of the liquid upstream of step (d)."*

Alternatively, it requested to maintain the patent in amended form on the basis of auxiliary requests 1 and 2 underlying the decision, claim 1 of which being identical with claim 1 above.

Further it submitted an additional set of claims as auxiliary request 3, with claim 1 reading (amendments to above claim 1 shown in **bold**):

"1. A process for the treatment of a liquid waste stream comprising flue gas desulfurization blow down water (202) comprising

- (a) physical and/or chemical pretreatment of the liquid to remove suspended solids and to soften the liquid;
- (b) ammonia stripping of the liquid **in a pretreatment process or by a biological process**;
- (c) anoxic treatment to remove nitrate;
- (d) a second anoxic treatment after step (c) to remove selenium and anaerobic treatment to remove heavy metals; and
- (e) membrane separation of the liquid upstream of step (d)."

III. With its reply to the grounds of appeal, the respondent objected to the different sets of claims underlying the grounds of appeal inter alia under the provisions of Articles 123(2) and 56 EPC.

IV. In response to the board's preliminary opinion stating that none of the above requests appeared to meet the requirements of Article 123(2) EPC, the appellant submitted eight further auxiliary requests on 21 March 2017.

Claim 1 of auxiliary requests 4 to 6 was identical with claim 1 as granted, and claim 1 of auxiliary request 7 with claim 1 of auxiliary request 3.

Claim 1 of auxiliary request 8 to 10 reads as follows (amendments to claim 1 as granted shown in **bold**):

"1. A process for the treatment of a liquid waste stream comprising flue gas desulfurization blow down water (202) comprising

- (a) *physical and/or chemical pretreatment of the liquid to remove suspended solids and to soften the liquid;*
- (b) *ammonia stripping of the liquid;*
- (c) *anoxic treatment to remove nitrate;*
- (d) *a second anoxic treatment after step (c) to remove selenium and anaerobic treatment to remove heavy metals; and*
- (e) *membrane separation of the liquid upstream of step (d), and*
- (f) *dilution upstream of the second anoxic treatment of step (d).***"

Claim 1 of auxiliary request 11 reads as follows
(amendments to claim 1 as granted shown in **bold**):

- "1. A process for the treatment of a liquid waste stream comprising flue gas desulfurization blow down water (202) comprising
- (a) *physical and/or chemical pretreatment of the liquid to remove suspended solids and to soften the liquid;*
 - (b) *ammonia stripping of the liquid **in a pretreatment process or by a biological process;***
 - (c) *anoxic treatment to remove nitrate;*
 - (d) *a second anoxic treatment after step (c) to remove selenium and anaerobic treatment to remove heavy metals; and*
 - (e) *membrane separation of the liquid upstream of step (d), and*
 - (f) *dilution upstream of the second anoxic treatment of step (d).***"

V. At the oral proceedings, which took place on 21 April 2017, the discussion focused on the admissibility of these further requests and on the allowability under Article 123(2) EPC of all requests on file.

VI. At the end of the oral proceedings, the parties' requests were as follows:

The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained as granted or, alternatively, in amended form on the basis of the first or second auxiliary requests underlying the decision, the third auxiliary request as submitted with the grounds of appeal, or the fourth to eleventh auxiliary request as submitted on 21 March 2017.

The respondent (opponent) requested that the appeal be dismissed.

Reasons for the Decision

1. Main request - allowability under Article 123(2) EPC

For the board, the subject-matter of claim 1 of this request extends beyond the content of the application as filed for the following reasons:

1.1 According to claim 1 taken in combination with claim 2 of the application as filed, the invention originally disclosed a water treatment process including the three following steps:

- an anoxic treatment to denitrify a waste stream,
- followed by an anoxic treatment to remove selenium,
- an anaerobic treatment to remove heavy metals, for example arsenic, mercury or sulphur.

Claim 1 as granted, however, comprises three further steps, namely:

- a physical and/or chemical pretreatment of the liquid to remove suspended solids and soften the liquid,
- an ammonia stripping step of the liquid, and
- a membrane separation of the liquid upstream of the second anoxic treatment.

The question thus arises whether the **combination** of these three further steps with the three steps according to claims 1 and 2 as filed has been directly and unambiguously disclosed in the application as filed.

For the board, the answer is negative. A basis for the three further steps can be found - as argued by the appellant - in paragraph [0009] as filed. However, this passage does not describe the features at issue as being essential, but they are rather optional and not disclosed **in combination** with the other three steps. The paragraph [0009] starts with the description of the process steps of "*anoxic treatment to denitrify a waste stream, anoxic treatment to remove selenium and anaerobic treatment to remove heavy metals **or sulphur or both***" (emphasis added by the board). Thus, removal of heavy metals, as required in claim 1 at issue, is only one of the options which may be combined with one or more of the steps listed in the rest of the paragraph.

The said paragraph continues to teach that "[t]he process may further include **one or more** of:

- (a) *membrane separation of the waste stream upstream of the anoxic digestion to remove selenium,*
- (b) *dilution upstream of the biological treatment step,*

(c) *physical/chemical pretreatment upstream of the biological processes or dilution step to remove TSS and soften the waste stream,*
(d) *ammonia stripping upstream of the biological treatment steps or dilution step, or*
(e) *aerobic treatment to remove COD and nitrify the waste stream upstream of the anoxic treatment.*" (emphasis added).

Accordingly, in order to arrive at the subject-matter of claim 1 as granted, the skilled person would have to choose some of the steps listed above, but there is no indication in the application as filed as to why three steps should be chosen and in particular why the above steps (a), (c) and (d) were the preferred ones in combination with the other three already claimed, whereas other steps mentioned in paragraph [0009] should be omitted. It follows that the subject-matter of claim 1 as granted cannot be seen as deriving directly and unambiguously from these passages of the application as filed.

1.2 The same conclusion arises from the disclosure of claim 4 as filed, which describes that the "*process of any of claims 1 to 3 further comprising **one or more** steps of: a) *membrane separation of the waste stream upstream of the step of anoxic digestion to remove selenium;* b) *dilution upstream of the digestion steps; or* c) *physical/chemical pretreatment upstream of the digestion steps or the dilution step to remove TSS and soften the waste stream*" (emphasis added), since in order to arrive at the subject-matter of claim 1 as granted the skilled person has first to choose two from these three steps, without any information in the application as filed as to why exactly two steps and in particular steps a) and c) would be preferred in*

combination with those of claims 1 and 2 as filed. In a second step the skilled person had further to choose the ammonia stripping step from (paragraph [0009] of) the description.

A direct and unambiguous disclosure of the subject-matter of claim 1 as granted can thus not be seen either from the subject-matter of claims 1, 2 and 4 as originally filed in combination with a passage from the description.

- 1.3 Eventually, the same conclusion arises from the figures as filed which do not either disclose the ammonia stripping step as an essential feature of the invention.

As the figures moreover disclose further steps presented as essential parts of the specific embodiments shown, in addition to the steps defined in claim 1 as granted, and since there is no hint in the application as filed as to why these additional steps should be left out, the subject-matter of claim 1 as granted boils down in a non-admissible intermediate generalisation of the figures which, according to the case law of the boards of appeal, extends beyond the content of the application as filed.

- 1.4 It follows from the above considerations that claim 1 as granted does not meet the requirements of Article 123(2) EPC.

2. First and second auxiliary requests - allowability under Article 123(2) EPC

The wording of claim 1 of these requests is the same as that of claim 1 as granted, and so for the same reasons

as above these requests are not allowable under Article 123(2) EPC.

3. Third auxiliary request - allowability of the amendments

Claim 1 of this request differs from that of claim 1 as granted in that the feature "*(b) ammonia stripping of the liquid*" has been supplemented by the features "*in a pretreatment process or by a biological process*".

The first option "*in a pretreatment step*" is based on the passage on page 9, lines 14 to 16 of the application as filed reading: "*... removing the ammonia, for example, **by stripping the ammonia as NH₃ in a pre-treatment process** or by removing ammonia biologically by a nitrification/denitrification process ...*". The passage links the term "stripping" with the conversion to NH₃.

The board cannot follow appellant's argument that a basis for the second option, i.e. "*ammonia stripping by a biological process*" has a basis in the same passage because the removal of ammonia by nitrification/denitrification is a biological removal, while the ammonia stripping is a physical removal. Thus, the feature "*removing ammonia biologically by a nitrification/denitrification process*" is not synonymous with "*stripping ammonia by a biological process*".

As a consequence thereof the amendment proposed discloses an embodiment which is not directly and unambiguously derivable from the application as filed, contrary to Article 123(2) EPC.

4. Auxiliary requests 4 to 11 - admissibility

4.1 These requests have been filed in response to the preliminary negative opinion of the board. They appear a priori as a serious attempt to overcome the objections raised by the board, in particular in view of the line of argument presented in its preliminary opinion.

4.2 However, this argument applies only to auxiliary requests 8 to 11, which are therefore admitted under Article 13(1) RPBA, but not to auxiliary requests 4 to 7. The latter requests appear to correspond to the main and first to third auxiliary requests with the exception that at least the claim corresponding to claim 2 as granted was deleted in order to "render any added matter issues with claim 2 moot" (see appellant's submission of 21 March 2017, page 4, paragraph 4). The line of argument followed by the board in its preliminary opinion that claim 2 had no basis in the application as filed is the same as the one raised in the contested decision (point 3.1.2), with the consequence that auxiliary requests 4 to 7 ought to have been filed at the latest with the grounds of appeal. Accordingly, auxiliary requests 4 to 7 are considered late-filed and not admitted into the proceedings (Article 13(1) RPBA).

5. Auxiliary requests 8 to 11 - allowability under Article 123(2) EPC

The subject-matter of claim 1 of these four requests comprises the additional step "*(f) dilution upstream of the second anoxic treatment of step (d).*"

There is no basis for this feature in the application as filed, in particular contrary to the appellant's argument that a basis for this additional step was to be found in claim 4 as filed.

Claim 4 as filed defines in step b) a "*dilution upstream of the digestion steps*", which is not synonymous with a dilution upstream of the second anoxic zone, since there are two anoxic zones in claim 1, on which claim 4 as filed is dependent. Thus, as original claim 4 requires the dilution upstream of "the", i.e. both digestion steps, but claim 1 of auxiliary requests 8 to 11 requires only a dilution upstream of the second digestion step/anoxic treatment, it follows that the subject-matter of auxiliary requests 8 to 11 do not meet the requirements of Article 123(2) EPC.

6. As none of the sets of claims underlying the proposed requests meets the requirements of the EPC, the appeal cannot succeed and the decision to revoke the patent is confirmed.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar:

The Chairman:



C. Vodz

E. Bendl

Decision electronically authenticated