

**IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS  
HOUSTON DIVISION**

**AIR LIQUIDE LARGE INDUSTRIES  
U.S. LP**

**Plaintiff,**

**v.**

**PRAXAIR, INC.,  
PRAXAIR TECHNOLOGY, INC.**

**Defendants.**

§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§

**CASE NO: 4:15cv1366**

**JURY DEMANDED**

**PLAINTIFF AIR LIQUIDE’S FIRST AMENDED COMPLAINT  
FOR DECLARATORY JUDGMENT OF NON-INFRINGEMENT**

Air Liquide Large Industries U.S. LP (“Air Liquide”), requests a declaratory judgment of non-infringement of certain patents owned and controlled by Praxair Technology, Inc. and Praxair, Inc. (collectively “Praxair”) based on the following:

**The Parties**

1. Air Liquide is a Delaware limited partnership with a principal place of business in Houston, Texas.
2. On information and belief, Praxair, Inc. is a Delaware corporation with a place of business in Deer Park, Texas.
3. On information and belief, Praxair Technology, Inc. is a Delaware corporation.

**Jurisdiction & Venue**

4. This Court has original subject matter jurisdiction over this declaratory judgment action that arises under the patent laws of the United States pursuant to 28 U.S.C. §§ 1331, 1338(a), 2201, and 2202.

5. On information and belief, a substantial controversy of sufficient immediacy and reality exists between the parties that warrants the issuance of a declaratory judgment. Praxair has asserted to Air Liquide and its prospective clients that Air Liquide will infringe Praxair patents with the planned operation of its hydrogen gas storage cavern. Praxair's actions have injured and will continue to injure Air Liquide.

6. This Court has personal jurisdiction over the defendants because Praxair has directed communications forming the basis for declaratory jurisdiction to this District.

7. Venue is properly within this district in accordance with 28 U.S.C. § 1391 and § 1400 (b) at least because a substantial part of the events or omissions giving rise to the declaratory judgment claims occurred in this District and both parties have regular and established places of business in this district.

### **Facts and Background**

#### **Air Liquide Invests Millions in Developing the Spindletop Cavern**

8. Air Liquide is a world leader in supplying gases and related technologies for industrial and medical applications. As part of its offerings, Air Liquide produces and contracts to supply hydrogen to the refining and petrochemical industries.

9. In 2007, Air Liquide announced the construction of a hydrogen storage cavern in Spindletop salt dome near Beaumont, Texas. The cavern will improve Air Liquide's ability to provide hydrogen on demand to its refinery customers.

10. In 2008, after notice and a public hearing, the Railroad Commission of Texas unanimously approved Air Liquide's application to operate and maintain an underground gas storage facility at the Spindletop salt dome.

11. In 2010, Air Liquide began drilling and excavating the storage cavern at Spindletop.

12. In 2013, Air Liquide began construction of the topside equipment at the Spindletop cavern used to inject, maintain, and withdraw hydrogen.

13. Air Liquide expects to start commercial hydrogen storage operations in the Spindletop cavern in early 2016. Air Liquide has begun to commercialize its cavern by negotiating supply contracts for hydrogen based upon its expected capacity once the cavern is operational.

14. To date, Air Liquide has invested in excess of \$100 million in the design and construction of the Spindletop hydrogen storage salt cavern.

#### **Praxair's Patents**

15. On information and belief, Praxair Technology, Inc. is the assignee of U.S. Patent Nos. 8,757,926 (“926 patent”), 8,425,149 (“149 patent”), and 8,950,419 (“419 patent”) (collectively the “Praxair patents”). These patents are included as Exhibits A, B, and C respectively. On information and belief, Praxair, Inc. owns rights to these patents.

#### **Praxair Asserts its Patents against the Spindletop Cavern**

16. Following the announcement of Air Liquide's expansion project in 2007, Praxair notified Air Liquide that it was concerned the Spindletop cavern may infringe the Praxair patents. Praxair expressed its concerns again about infringement of its patents in 2010 and 2013 after Air Liquide began construction first of the cavern and later of its topside.

17. Air Liquide responded to Praxair's concerns, but Praxair continued to express concern about infringement of its patents.

18. Praxair and Air Liquide met in October of 2014 so that Praxair could “ understand why Air Liquide believes it will not be in violation of [Praxair's] patents during the operation of its cavern.” Following the meeting, Praxair informed Air Liquide that Praxair “continue[s] to believe that there is a high likelihood that Air Liquide will violate one or more of [Praxair's]

patents or pending applications upon start-up and operation of its hydrogen storage cavern and Praxair will take all necessary steps to protect its valuable intellectual property rights.”

19. On information and belief, Praxair has told customers, including through communications directed to this District, that the Air Liquide cavern in Spindletop will infringe the Praxair patents. These allegations have undermined Air Liquide’s efforts to enter into contracts for supplying hydrogen based on the storage capacity of the Spindletop cavern.

20. Air Liquide is entitled to bring this action because there is a substantial controversy between Air Liquide and Praxair of sufficient immediacy and reality at least because: Air Liquide has a reasonable apprehension that Praxair will sue Air Liquide for infringement of its patents, including the '926, '149, and '419 patents; Air Liquide has a real and reasonable apprehension that its construction, commercialization, and operation of the Spindletop cavern could, according to statements made by Praxair to Air Liquide and its customers, subject it to liability for patent infringement; and Air Liquide has taken significant, concrete steps to conduct activity through substantial investments in and commercial marketing of the Spindletop cavern that, according to Praxair, is designed to infringe the Praxair patents.

**Count 1 – Declaratory Judgment of Non-Infringement of U.S. Patent No. 8,757,926**

21. All of the '926 patent claims require a conduit for injecting compressed hydrogen into a salt cavern with a lower end located in the interior region of the cavern. Air Liquide has built an injection conduit at the Spindletop cavern in the form of cemented casing that does not extend into the interior of the salt cavern.

22. Specifically, all claims of the '926 patent require a “conduit in communication with the salt cavern” for injecting and withdrawing hydrogen. The lower end of the conduit must be “no less than 50 feet” from the top of the salt cavern and “no less than 40 feet” from the

cavern sides as measured from a “vertical line extending between 10 and 250 feet below” the conduit.

23. Air Liquide designed and built a conduit for injecting and withdrawing hydrogen from its Spindletop cavern in the form of steel casing cemented into a borehole leading to the wider storage cavern. The casing extends from the surface to approximately 3622 feet below the ground, but the roof of the cavern does not begin until approximately 3950 feet below the ground—meaning that the casing conduit ends over 300 feet before the borehole reaches the roof of the cavern. Further, the lower end and the vertical line extending between 10 and 250 feet below the conduit is less than 40 feet from the sides of the borehole leading to the cavern.

24. Accordingly, the Spindletop cavern does not contain every requirement for any of the claims of the '926 patent at least because the conduit for injecting and withdrawing hydrogen from the Spindletop cavern does not extend from the borehole into the cavern.

25. Air Liquide has not infringed, either literally or under the doctrine of equivalents, directly or indirectly through others, any claim of the '926 patent.

26. Air Liquide therefore seeks a declaratory judgment that its plans and actions to construct, commercialize, and operate the Spindletop cavern have not and will not infringe any claim of the '926 patent.

**Count 2 – Declaratory Judgment of Non-Infringement of U.S. Patent No. 8,425,149**

27. All of the '149 patent claims require a conduit for injecting compressed hydrogen into a salt cavern with a lower end located in the interior region of the cavern. Air Liquide has built an injection conduit at the Spindletop cavern in the form of cemented casing that does not extend into the interior of the salt cavern.

28. Specifically, all claims of the '149 patent require a “conduit” for injecting and withdrawing hydrogen into and from the salt cavern. The lower end of the conduit must be

“located in an interior region of the salt cavern” and spaced “from the side regions of the salt cavern.”

29. Air Liquide designed and built a conduit for injecting and withdrawing hydrogen from its Spindletop cavern in the form of steel casing cemented into a borehole leading to the wider storage cavern. The casing extends from the surface to approximately 3622 feet below the ground, but the roof of the cavern does not begin until approximately 3950 feet below the ground—meaning that the casing conduit ends over 300 feet before the borehole reaches the roof of the cavern.

30. Accordingly, the Spindletop cavern does not contain every requirement for any of the claims of the '149 patent at least because the conduit for injecting and withdrawing hydrogen from the Spindletop cavern does not extend from the borehole into the cavern and away from the sides of the cavern.

31. Air Liquide has not infringed, either literally or under the doctrine of equivalents, directly or indirectly through others, any claim of the '149 patent.

32. Air Liquide therefore seeks a declaratory judgment that its plans and actions to construct, commercialize, and operate the Spindletop cavern have not and will not infringe any valid claim of the '149 patent.

**Count 3 – Declaratory Judgment of Non-Infringement of U.S. Patent No. 8,950,419**

33. The claims of the '419 patent require diluting the amount of contaminants in a hydrogen stream removed from a cavern by mixing it with hydrogen from a pipeline before introducing the cavern gas into the pipeline. Air Liquide has not built facilities designed to blend-down impurities from withdrawn cavern hydrogen with pipeline hydrogen, and has no plans to utilize an identical or equivalent system in the Spindletop cavern.

34. Specifically, every claim of the '419 patent requires withdrawing hydrogen from the pipeline “when supply is less than demand” for hydrogen pipeline gas. Every claim also requires “mixing” the “hydrogen dilution stream” withdrawn from the pipeline with a “crude hydrogen stream” withdrawn from the salt cavern with contaminants above purity specifications. The mixture creates a “hydrogen product stream” with lower levels of contaminants than the crude hydrogen stream. Every claim also requires “controlling the flow rate” of the hydrogen dilution stream “such that the contaminants are present in the hydrogen product stream at or below the product purity specification.”

35. Air Liquide designed and built facilities that withdraw hydrogen from the Spindletop cavern and inject it into the pipeline without mixing it first with pipeline hydrogen to lower the level of contaminants. Instead, Air Liquide designed and built equipment to remove expected water contamination from the hydrogen withdrawn from the cavern before injecting it into the pipeline without using pipeline gas in the process. Because Air Liquide does not use pipeline gas to blend-down contaminants in its withdrawn cavern gas, it has not planned any operations that would withdraw hydrogen from the pipeline when demand exceeds supply for the pipeline gas and has not designed or built controllers that control the flow rate of a hydrogen dilution stream to lower containment levels of withdrawn cavern gas.

36. Accordingly, the Spindletop cavern does not contain every requirement for any of the claims of the '149 patent at least because the facilities and operations have not been designed to blend-down impurities in cavern gas with pipeline gas before injecting into the pipeline.

37. Air Liquide has not infringed, either literally or under the doctrine of equivalents, directly or indirectly through others, any claim of the '419 patent.

38. Air Liquide therefore seeks a declaratory judgment that its plans and actions to construct, commercialize, and operate the Spindletop cavern have not and will not infringe any valid claim of the '419 Patent.

**Jury Demand**

Air Liquide demands a trial by jury.

**Prayer**

WHEREFORE, Air Liquide prays the Court to grant:

- (a) Declaratory judgment that has not and will not infringe any valid claims of the '926, '149, and '419 patents through its construction, commercialization, and operation of the Air Liquide hydrogen salt cavern in Spindletop;
- (b) An award of attorney fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law against Praxair;
- (c) All costs of suit; and
- (d) Such other and further relief as the Court may deem just and proper.



Dated: December 3, 2015

Respectfully submitted,

/s/ Charles B. Walker Jr.

Charles B. Walker, Jr.  
Attorney-in-Charge  
State Bar No. 00794808  
S.D. Tex. Bar No. 19307  
Fulbright Tower  
1301 McKinney, Suite 5100  
Houston, TX 77010-3095  
Telephone: 713.651.5203  
Facsimile: 713.651.5246  
Email: charles.walker@nortonrosefulbright.com

COUNSEL FOR PLAINTIFF  
AIR LIQUIDE LARGE INDUSTRIES U.S. LP

OF COUNSEL:  
NORTON ROSE FULBRIGHT US LLP  
James Repass  
State Bar No. 16786940  
S.D. Tex. Bar No. 9166  
Daniel Leventhal  
State Bar No. 24050923  
S.D. Tex. Bar No. 609131  
Fulbright Tower  
1301 McKinney, Suite 5100  
Houston, TX 77010-3095  
Telephone: 713.651.5151  
Facsimile: 713.651.5246  
Email: jim.repass@nortonrosefulbright.com  
daniel.leventhal@nortonrosefulbright.com

**CERTIFICATE OF SERVICE**

I certify that on December 3, 2015, all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system. Any other counsel of record will be served in accordance with the Federal Rules of Civil Procedure.

/s/Charles B. Walker, Jr. \_\_\_\_\_

Charles B. Walker, Jr.