

120 FERC ¶ 61,226
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Joseph T. Kelliher, Chairman;
Sudeen G. Kelly, Marc Spitzer,
Philip D. Moeller, and Jon Wellinghoff.

Petal Gas Storage, L.L.C.

Docket No. CP07-30-001

ORDER ON REHEARING

(Issued September 10, 2007)

1. On April 27, 2007, Petal Gas Storage, L.L.C. (Petal) filed a request for clarification or, in the alternative, rehearing of the Commission's March 28, 2007 Order issuing to Petal a certificate of public convenience and necessity to construct and operate its Cavern Conversions Project in Forrest County, Mississippi.¹ Petal seeks clarification and/or rehearing of the March 28 Order's requirement that Petal execute firm contracts for the capacity levels represented in its precedent agreements prior to commencing construction, and certain of the engineering conditions imposed by the Order. As discussed below, the Commission grants rehearing with respect to the condition requiring the execution of firm contracts, and grants and denies rehearing with respect to the various engineering conditions.

I. Background

2. Petal operates an existing natural gas storage facility consisting of several natural gas storage caverns on the Petal Salt Dome east of Hattiesburg, Mississippi.² In August 1993, the Commission authorized Petal to construct and operate its first salt dome natural gas storage cavern, Cavern No. 6, in Forrest County, Mississippi.³ In March 1999, the Commission authorized Petal to construct its second salt dome natural gas storage cavern,

¹ *Petal Gas Storage, L.L.C.*, 118 FERC ¶ 61,253 (2007)(March 28 Order).

² The Petal Salt Dome is a subsurface geologic salt formation underlying the property owned by Petal for its existing natural gas storage operations.

³ *Petal Gas Storage Company*, 64 FERC ¶ 61,190 (1993).

Cavern No. 7, adjacent to Cavern No. 6.⁴ In February 2003, the Commission authorized Petal to develop its third and fourth natural gas storage cavern. Specifically, the Commission authorized Petal to convert an existing brine storage cavern, Cavern No. 3, to a natural gas storage cavern, and to construct and operate a new natural gas storage cavern, Cavern No. 8.⁵ In these and other orders,⁶ the Commission also authorized the expansion of several of the caverns' storage capacity, and the construction and expansion of various storage header and mainline facilities, including compression and interconnection facilities. Further, the Commission has authorized Petal to charge market-based rates for its storage services and cost-based rates for its open-access transportation services.⁷

3. In the March 28 Order, the Commission authorized Petal to develop its fifth and sixth caverns by converting two existing salt dome caverns into natural gas storage caverns and to construct approximately one-half mile of pipeline facilities to connect the converted caverns to Petal's existing storage facility. One of the caverns (Cavern No. 9) has been used to store natural gas liquids (NGL).⁸ The other cavern (Cavern No. 10) has been used for brine storage, and is proposed to have a total maximum capacity of 3.45 Bcf, of which 2.2 Bcf will be working gas and 1.25 Bcf will be cushion gas. Conversion

⁴ *Petal Gas Storage Company*, 86 FERC ¶ 61,224 (1999).

⁵ *Petal Gas Storage, L.L.C.*, 102 FERC ¶ 61,243 (2003). All of Petal's authorized storage caverns are in service, except Cavern No. 8, which is projected to be in service in April 2008.

⁶ See *Petal Gas Storage, L.L.C.*, 90 FERC ¶ 61,243 (2000); *Petal Gas Storage, L.L.C.*, 92 FERC ¶ 61,220 (2000); *Petal Gas Storage, L.L.C.*, 97 FERC ¶ 61,097 (2001); and *Petal Gas Storage, L.L.C.*, 110 FERC ¶ 61,260 (2005).

⁷ See *Petal Gas Storage Co.*, 64 FERC ¶ 61,190 (1993); *Petal Gas Storage Co.*, 86 FERC ¶ 61,224 (1999); *Petal Gas Storage, L.L.C.*, 90 FERC ¶ 61,243 (2000); *Petal Gas Storage L.L.C.*, 102 FERC ¶ 61,243 (2003); and *Petal Gas Storage L.L.C.*, 118 FERC ¶ 61,253 (2007).

⁸ On July 23, 2007, Petal filed an application to abandon Cavern No. 9, the six-inch diameter natural gas pipeline connecting Cavern No. 9 to Cavern No. 8, and other appurtenant facilities related to Cavern No. 9, since testing disclosed that Cavern No. 9 would not be suitable for natural gas storage. Cavern No. 9 had a proposed capacity of 1.0 Bcf, of which 0.65 Bcf was to be working gas and 0.35 Bcf was to be cushion gas. Commission action on Petal's application for partial abandonment is pending.

of the caverns for natural gas storage will require a workover of the existing wells to install a new well bore casing, while existing facility control structures and subsurface electrical lines, used for NGL and brine operations, will be modified to house fiber optics cables and equipment for remote control of the natural gas wellhead and appurtenant facilities. All of the project's natural gas storage facilities will be located within Petal's property boundaries.

4. The Commission held in the March 28 Order that, pursuant to its Certificate Policy Statement,⁹ Petal's Cavern Conversions Project is required by the public convenience and necessity. The Commission concluded that the Cavern Conversions Project will meet unserved storage demand, facilitate the additional development of growing market demand for natural gas in the Southeast United States, and provide increased efficiency and reliability of service. In addition, the Commission noted that Petal had signed binding precedent agreements for virtually all of the working gas capacity of the project. Therefore, the Commission conditioned Petal's certificate authority on Petal's execution of firm contracts for the capacity levels represented in its precedent agreements, prior to commencing construction.¹⁰

5. The Commission also conditioned its grant of certificate authority on Petal's compliance with a number of environmental and engineering conditions.¹¹ As is relevant to the instant request for rehearing, Engineering Condition No. 4 requires that Petal conduct a leak detection test twice annually. Engineering Condition No. 5 requires that each cavern's well be periodically logged to check the cavern roof and status of each casing string, and that Petal conduct sonar surveys of the caverns every five years and file the results with the Commission. Engineering Condition No. 6 requires Petal to conduct an annual inventory verification study on each cavern and to file the results with the Commission.

II. Request for Clarification or Rehearing

6. In its request for clarification or, in the alternative, rehearing, Petal seeks the elimination of the requirement in Ordering Paragraph B(2) that Petal execute firm

⁹*Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *order on clarification*, 90 FERC ¶ 61,128, *order on clarification*, 92 FERC ¶ 61,094 (2000) (Certificate Policy Statement).

¹⁰ 118 FERC ¶ 61,253 at P 27, n.13 and Ordering Paragraph B(2).

¹¹ *Id.* at Appendices A and B.

contracts prior to commencing construction as inconsistent with Commission policy with respect to storage projects with market-based rate authority and limited environmental/landowner impacts. Petal also argues that Engineering Condition Nos. 5 and 6 are new requirements imposed without explanation in the March 28 Order and appear to be unnecessary in Petal's circumstances, as well as potentially costly and disruptive to its provision of service. Petal seeks the elimination of Engineering Condition No. 5 and the modification of Engineering Condition No. 6. Further, Petal maintains that Engineering Condition No. 4 is inconsistent with the Commission's prior clarification in one of its earlier proceedings, and requests that the Commission clarify Engineering Condition No. 4 as previously clarified in Docket No. CP02-387-000.

III. Discussion

A. Ordering Paragraph (B)(2)

7. Petal seeks clarification that the Commission's imposition of the requirement in Ordering Paragraph B(2) that Petal execute firm contracts for the capacity levels represented in its precedent agreements, prior to commencing construction was inadvertent because, maintains Petal, under Commission policy, such a condition is inapplicable to storage projects with market-based rate authority and limited impacts on landowners and the environment. Petal asserts that such a condition has not been imposed on other certificate authorizations for similar storage projects granted either before or after the issuance of the March 28 Order,¹² nor was it imposed on the certificates granted to Petal for its four previously authorized storage caverns. Petal argues that in the one case where such a condition was imposed, the Commission subsequently waived the condition finding that a condition requiring the execution of firm contracts is not necessary to protect the public interest where the storage project is a new entrant to the market, bears the full risk of any unsubscribed capacity, and imposes no significant burdens on the environment or affected landowners.¹³ Rather, argues Petal, this kind of condition is typically required by the Commission only where the

¹² Petal cites *Mississippi Hub, LLC*, 118 FERC ¶ 61,099 (2007); *SG Resources Mississippi, LLC*, 118 FERC ¶ 61,048 (2007); *Unocal Windy Hill Gas Storage, LLC*, 115 FERC ¶ 61,218 (2006); *Port Barre Investments, LLC*, 116 FERC ¶ 61,052 (2006); *Liberty Gas Storage LLC*, 113 FERC ¶ 61,247 (2005); *Starks Gas Storage LLC*, 112 FERC ¶ 61,109 (2005); *Caledonia Energy Partners, LLC*, 111 FERC ¶ 61,095 (2005); *Freebird Gas Storage, LLC*, 111 FERC ¶ 61,054 (2005); and *Pine Prairie Energy Center, LLC*, 109 FERC ¶ 61,215 (2004).

¹³ *SG Resources Mississippi, LLC*, 108 FERC ¶ 61,051 (2004) (*SG Resources*).

certificate authorization involves the construction of long-haul, large-diameter pipeline systems, or for projects that potentially involve rights-of-way through several hundred miles of publicly and privately owned land.¹⁴ Thus, Petal requests that the Commission clarify that the condition is inapplicable to the Cavern Conversions Project and therefore vacate the condition.

8. In the alternative, Petal requests rehearing of the imposition of the Ordering Paragraph B(2) condition, arguing that the Cavern Conversions Project is similarly situated in every respect to the other storage projects it referenced, none of which was required to execute firm contracts prior to the commencement of construction. Petal asserts that it is indisputable that it will bear the risks of any unsubscribed capacity, and that the environmental and landowner impacts of the project will be no less limited than in *SG Resources*.

Commission Response

9. In a supplement to its application, Petal had stated that as a result of its open season for the project, it had signed precedent agreements for 100 percent of the working gas capacity for the first phase of the project, or 2.35 Bcf of the total project working gas capacity of 2.85 Bcf.¹⁵ Petal specifically indicated that it had executed binding precedent agreements for firm gas storage service under Rate Schedule FSS, for an average term of four years, with Magnus Energy, AGL Resources, Sempra Commodities, and the Tennessee Valley Authority for the corresponding capacity amounts of .85 Bcf, .54 Bcf, .54 Bcf, and .42 Bcf.¹⁶ Consequently, the Commission's discussion of the Certificate Policy Statement noted Petal's representations that the working gas capacity of the first phase of the project was fully subscribed under binding precedent agreements.¹⁷

10. However, while recognizing that contracts or precedent agreements will always be important evidence of demand for a project, the Certificate Policy Statement does not require that an applicant rely on such evidence to establish need for a proposed project.¹⁸

¹⁴ See *Rockies Express Pipeline, LLC*, 116 FERC ¶ 61,272 (2006).

¹⁵ Petal's February 23, 2007 Third Supplemental Filing to its Cavern Conversions Project application.

¹⁶ *Id.*

¹⁷ 118 FERC ¶ 61,253 at P 27.

¹⁸ *Certificate Policy Statement*, 88 FERC 61,227 at p. 61,748 (1999).

As Petal points out, the Commission has in appropriate cases issued certificates for projects where there were no existing precedent agreements or executed contracts.¹⁹

11. Petal gives no explanation why it believes the requirement to execute contracts for the volumes represented in its precedent agreements would be burdensome. However, we will consider Petal's alternative request for elimination of the condition, and we are granting the request for the following reasons. As stated in the March 28 Order, Petal's application stated that its Cavern Nos. 3, 6, and 7 are fully subscribed on a firm basis, and that it regularly receives inquiries regarding the availability of firm storage capacity prior to 2008 when Cavern No. 8 is expected to be in service. Petal stated that such strong interest is likely attributable to: (1) concern regarding the market dislocations created by hurricanes Katrina and Rita; (2) the impact of major, new pipeline and LNG supply projects in the Gulf Coast region anticipated to be placed in service prior to 2008; and (3) an overall increase in market demand for multi-cycle, high-deliverability firm storage services.²⁰ Further, Petal stated in its application that initial indications from its open season are that the proposed capacity will be fully subscribed.²¹

12. Moreover, Petal proposes to charge market-based rates for the new capacity created by the Cavern Conversion Project. Thus, as the Commission found in the March 28 Order, Petal will financially support the project without relying on subsidization from existing customers since Petal will bear the economic risks associated with the project's costs to the extent any capacity is unsubscribed, and existing customers will continue to receive service under contracts with market-based rates. In addition, the project will not adversely impact existing customers in the market and their captive customers, since the project is meeting new market demand for storage and will improve the flexibility and reliability of service for shippers. Further, since all of the project facilities will be constructed solely on land owned by Petal and within the boundaries of the existing Petal storage facility, there should be minimal, if any, adverse impact on associated landowners. Additionally, no environmental impacts from approval of this project have been identified.

¹⁹ See footnote 11, *supra*. See also, *Copiah County Storage Company*, 99 FERC ¶ 61,316 (2002) (where the Commission relied on applicant's analysis of current and projected growth in demand for storage and hub services and non-binding expressions of interest during the open season to support project need, rather than executed contracts).

²⁰ Application of Petal at 6-7.

²¹ See *Copiah County Storage Company*, 99 FERC ¶ 61,316 (2002).

13. Given that the Cavern Conversions Project is a storage project with market-based rates, imposes no significant burdens on the environment or affected landowners, and will provide additional storage capacity to meet growing market demand in the southeast United States and increased efficiency and reliability of service, the Commission finds that there is sufficient evidence to establish a need for the project without reliance on the executed precedent agreements. Requiring Petal to execute contracts for the Phase I capacity before commencing construction is not necessary to protect the public interest and, therefore, the Commission grants rehearing and eliminates the contract execution condition in Ordering Paragraph (B)(2).²² Petal, however, may not commence construction until it has satisfied all other applicable certificate conditions and Commission regulations.

B. Engineering Condition No. 4

14. Engineering Condition No. 4 provides that “twice annually, Petal shall conduct a leak detection test during storage operations to determine the integrity of each cavern, well bore, casing and wellhead, and file the results with the Commission.”

15. Petal requests that the requirement to conduct a leak detection test on a semi-annual basis be clarified so as to limit it to the construction and development phase of the project, and permit it to be discontinued once each cavern satisfactorily commences full commercial operations. Petal asserts that in Docket No. CP02-387-000, the Commission imposed this same condition on the certificate authority granted for Petal’s Cavern Nos. 3 and 8, but later, on rehearing, clarified the condition in this manner. Petal requests the same clarification here.

Commission Response

16. In Docket No. CP02-387-001, the Commission clarified that, “consistent with the reporting requirements of Section 157.214(c) of the Commission's regulations, . . . Petal's requirement to perform semi-annual leak detection tests under Engineering Condition "C" will be discontinued one year after the storage inventory volume reaches or closely

²² See *SG Resources* at P 15. In *SG Resources*, the Commission granted a request for waiver of the condition requiring executed contracts before commencement of construction. The Commission granted the waiver because it had previously found that the project would impose no significant burdens on the environment or affected landowners and there was no potential for subsidization since SG Resources had no existing customers and had received market-based rate authority, thereby assuming the economic risks of the project.

approximates the full authorized capacity, unless otherwise ordered by the Commission.”²³ The Commission explained that the twice-annual filing of leak detection tests during the construction and development stage of the project is appropriate for safety reasons and to enable verification of proper cavern development. The Commission further clarified that, consistent with the requirement to file semi-annual reports of leakage of injected gas under section 157.214(c) of the Commission's regulations, these tests need not be continued beyond the development stage.

17. Accordingly, the Commission clarifies that Petal’s obligation under Engineering Condition No. 4 to conduct semi-annual leak detection tests will be discontinued one year after the storage inventory volume reaches or closely approximates the full authorized capacity, unless otherwise ordered by the Commission. This clarification, however, does not alter or affect Petal's obligations to comply with the requirements of the State of Mississippi regarding leak detection tests.

C. Engineering Condition No. 5

18. Engineering Condition No. 5 states:

Each cavern’s well will be periodically logged to check the cavern roof and status of each casing string. Additionally, every five years Petal shall conduct sonar surveys of the caverns to monitor their dimensions and shape and to estimate pillar thickness between openings throughout the storage operations, and file results with the Commission.

19. Petal raises a number of issues with respect to this condition, and requests that the Commission either eliminate this condition, or limit its applicability to the extent that Petal, after the commencement of full operations, injects and withdraws water from the caverns.

Request for Clarification of Condition

20. Petal asserts that the language of the condition itself is confusing and requests that the Commission clarify what is required by the condition.²⁴ Petal states that it appears that the condition distinguishes between the periodic logging of the cavern roof and casing strings, and the requirement to conduct sonar surveys of the caverns’ dimensions every five years. However, because, asserts Petal, the cavern roof can only be logged

²³ *Petal Gas Storage, L.L.C.*, 103 FERC ¶ 61,311 at P 8 (2003).

²⁴ Request for Rehearing at 7, n.20.

through a sonar survey, Petal assumes that the two parts of the condition form a single requirement to conduct either electronic logs or sonar surveys, whichever is applicable, on an every-five year basis for the cavern roof, the status of each casing string, and the dimensions of the cavern.

Commission Response

21. The intent of this condition is to require measures that will ensure the safe and reliable operation of the approved cavern conversion on a continuing basis.²⁵ The Commission clarifies that this condition encompasses two different cavern features that require monitoring (casing string and cavern geometry) by two different, respective methods (well logging and sonar survey). Further, the frequency of monitoring required by the condition may be, but is not necessarily the same for each method, as explained further below.

22. The purpose of requiring periodic well logging is to ensure that the quality of the pipe strings, cement, and cement bonds do not degrade sufficiently to produce unsafe conditions or allow leaking of the pressurized gas. While the Commission acknowledges that the down-hole pipe string and cement assemblage is typically very stable structurally, degradation can and does occur over normal storage cavern operations and warrants periodic monitoring. However, the Commission believes that the frequency of such monitoring is best left up to the discretion of the operator, who is in a much better position to set a monitoring schedule based on the specific operating parameters and physical characteristics of the subsurface material and installed equipment.

23. The intent behind requiring sonar surveys of the underground cavern is to create a record of the changes in cavern geometry over time. Unlike the down-hole pipe assemblage, the void space created in underground salt dome structures is known to change over time due to the flowing or “salt creep” that occurs under the pressure and temperature conditions found at that depth. Coupled with the fact that multiple caverns are often constructed in the same salt dome structure (as is the case in the Petal Dome), the Commission believes that these circumstances warrant a specifically stated survey interval for the sonar surveys. The Commission finds that a record of the cavern geometry, measured every five years, would enable cavern operators to make adjustments to the cavern shape, if needed.

²⁵ While, in this case, the approved action is the conversion of a salt cavern from natural gas liquids to natural gas storage, the Commission notes that this condition may also appropriately be applied to cases in which the proposal is to develop a new cavern or to expand an existing cavern used for natural gas storage.

24. Accordingly, the Commission is revising the language of Condition No. 5, as follows:

Each cavern's well will be periodically logged to check the status of each casing string. Additionally, every five years Petal shall conduct sonar surveys of the caverns to monitor their dimensions and shape, including the cavern roof, and to estimate pillar thickness between openings throughout the storage operations, and file results with the Commission.

Applicability and Purpose of Condition

25. Petal argues that this condition has no applicability to the operation of Petal's Cavern Conversions Project. Petal states that the condition appears to assume that the caverns may increase in size once placed in service, from either water or liquid hydrocarbons being injected into and withdrawn from the caverns, effectively continuing the solution mining of the caverns, since the sonar survey requirement is to "monitor their dimensions and shape and to estimate pillar thickness between openings through the storage operations" However, Petal states that the only consequence of the authorized storage operations would be a decrease in cavern size due to salt "creep," and that it contemplates further leaching of the caverns only as necessary to address cavern "creep" and then only to the extent necessary to restore capacity to its certificated levels. Thus, Petal questions the purpose of the periodic logging or sonar surveying requirements.

Commission Response

26. The purpose of Engineering Condition No. 5 is not to address potential increases in cavern size, but to protect overall cavern integrity from decreases in cavern size resulting from salt creep. Because salt deforms plastically in relatively short time frames, cavern geometry changes, or shrinks, over time. As stated in "A Brief History of Salt Cavern Use,"²⁶ large volume losses due to salt creep have occurred in natural gas storage caverns. Petal itself acknowledges the likelihood of salt creep, which is natural for salt caverns of this type. With a change in cavern geometry, comes the likelihood of a change in pillar thickness between caverns, the possible introduction of permeable lenses or veins, and possible degradation of the bond between the casing string and cavern wall at the top or roof of the cavern. In light of these potential changes, the purpose of the sonar survey of this condition is to monitor the cavern's size to ensure that salt creep does not

²⁶ Thomas, R.L. and Gehle, R.M., "A Brief History of Salt Cavern Use."

damage the integrity of the cavern. Cavern integrity is necessary to ensure the safety and reliability of the facility and to avoid the loss of gas and reductions in storage capacity.

Need for Condition to Reflect New Technology

27. Petal asserts that Engineering Condition No. 5 is a new requirement that the Commission did not previously impose on the certificate authorizations for its four previously authorized storage caverns.²⁷ Petal adds that the State of Mississippi's rules and regulations governing salt dome cavern operations do not provide similar requirements. Thus, Petal seeks an explanation of the basis for the Commission's imposition of this condition.

Commission Response

28. Petal correctly points out that the Commission did not impose this condition in any previous authorizations for its other caverns. Petal also correctly observes that the Commission first began requiring well logs and sonar surveys for salt cavern projects in the summer of 2005, two years after Petal's most recent salt cavern project. The Commission seeks to stay abreast of new technology, emerging trends, and the growing data base of information relevant to its jurisdictional industries, and specifically, in this case salt cavern storage. As more information and technology concerning the storage and monitoring of natural gas salt dome caverns become available, the Commission will continue to adjust its monitoring requirements to reflect these advancements to ensure the integrity of natural gas storage facilities.

Justification for Burden Created by Condition

29. Petal argues that compliance with Engineering Condition No. 5 will be highly disruptive and burdensome to its provision of service, as well as costly. Petal explains that the brine de-watering casings put in the caverns to facilitate filling the caverns with natural gas will remain in the cavern wells to allow water to be injected and withdrawn subsequently to restore any loss in cavern capacity due to cavern creep. However, Petal asserts that to periodically log the wells and/or conduct sonar surveys, it will be necessary to remove the brine dewatering casings. Petal identifies two options for removal of the casings, both of which it maintains are costly and disruptive: (1) filling the caverns completely with water and then removing the casings; and (2) removing the casings

²⁷ Petal, however, acknowledges that the Commission has, in other cases, required periodic logging and sonar surveys, as well as annual inventory verification, beginning in 2005.

under pressure, with the natural gas in the caverns. Petal asserts that the latter option is too hazardous to consider except in emergency conditions, and that the former option would require that the caverns be removed from service for a minimum of five to eight months, creating an unreasonable burden for Petal and its firm service customers.

Commission Response

30. The Commission is not convinced that the burden imposed by Condition No. 5 approaches the order of magnitude represented by Petal. The total capacity of the new caverns is less than 10 times the associated increase in daily injection and withdrawal rates. Further, there is nothing unusual or excessively hazardous involved in working in a controlled environment with a maximum pressure of 1,725 psi. As discussed, *supra*, periodic sonar surveys are important to determine the integrity of a natural gas storage cavern. The Commission believes that a natural gas storage project must be reliable and sufficiently protect the customer's commodity in the provision of jurisdictional service. While in this particular case sonar surveys may be costly and disruptive, the protection of cavern integrity is of the utmost importance and outweighs the burden imposed to some extent. The Commission notes that it has previously issued certificates for other salt cavern facilities with this identical condition, and no other company has raised the issue of this condition being too burdensome.²⁸ Regardless, maintaining cavern integrity to provide service is an obligation incumbent upon any party that seeks to construct and operate a jurisdictional storage facility. The Commission will continue to require Petal to comply with Engineering Condition No. 5, as revised above and, therefore, denies rehearing.

Continuing Applicability of Condition

31. Petal states that, if the Commission is denying its rehearing request to eliminate the condition, at a minimum it should only be applicable to the extent that Petal, after commencement of full operations, injects and withdraws water from the caverns.

Commission Response

32. As discussed above, we do not presume the injection and withdrawal of water to be the sole determining factor that would have an effect on the cavern geometry and thus,

²⁸ *Mississippi Hub, L.L.C.*, 118 FERC ¶ 61,099 (2007); *Port Barre Investments, L.L.C. d/b/a Bobcat Gas Storage*, 116 FERC ¶ 61,052 (2006); *Unocal Windy Hill Gas Storage, LLC*, 115 FERC ¶ 61,218 (2006); and *Starks Gas Storage L.L.C.*, 112 FERC ¶ 61,109 (2005).

require monitoring via a sonar survey. Rather, the existence of the cavern void space itself, which is affected by the natural subsurface pressures, is the cause of the creep, notwithstanding the injection and withdrawal of gas, water, or any other substance.

33. Further, the Interstate Oil and Gas Compact Commission's (IOGCC) Hydrocarbon Storage in Mine Caverns Report (IOGCC Report) states that monitoring for cavern stability and successful hydrodynamic containment may be carried out throughout the life of the facility.²⁹ The Commission believes that cavern integrity is important throughout the life of the project and, therefore monitoring for cavern stability and containment should be carried out throughout the life of the project. Restricting the sonar testing only to periods when water is injected or withdrawn from the facility does not ensure effective monitoring of the cavern. A regular periodic check on cavern integrity is the only way to ensure the consistent safety and reliability of the facility.

Five-Year Sonar Surveys

34. Petal requests that the Commission explain the rationale for requiring an interval of every five years for the sonar surveys. Petal argues that there is no factual basis to support requiring Petal to conduct sonar surveys every five years. Petal maintains that the costs incurred, the risks presented, and the service disruptions involved by requiring such surveys every five years, outweigh any benefits, which Petal claims have not been sufficiently identified.

Commission Response

35. Given that periodic monitoring of cavern integrity should be carried out throughout the life of the facility, and that the Commission is obligated to ensure the operational integrity of jurisdictional facilities, the Commission does not believe that the requirement to conduct sonar surveys every five years is unreasonable. A five-year

²⁹ The IOGCC is a multi-state governmental agency that promotes and encourages conservation and efficient recovery of domestic oil and natural gas resources, while protecting health, safety, and the environment. The organization is comprised of twenty-nine oil and natural gas-producing states and six associate member states. It provides a nationwide resource for disseminating information about effective practices, solutions to problems derived from prior experience, and innovative and developing programs. It has published the "I.O.G.C.C. Member State Regulation of Natural Gas Storage," which summarizes the various state and federal statutes and regulations relating to the underground storage of natural gas, and "Natural Gas Storage in Salt Caverns: A Guide for State Regulators."

period is the typical time frame under most state regulations, although not all. The Commission believes that a five-year interval strikes the appropriate balance between appropriate monitoring of cavern stability, while not being overly burdensome to storage providers.

D. Engineering Condition No. 6

36. Engineering Condition No. 6 states that “Petal shall conduct an annual inventory verification study on each cavern, and file results with the Commission.”

37. Like Engineering Condition No. 5, Petal states that this condition is also a new requirement that had not been previously imposed on the certificate authorizations for its other storage caverns. Petal also similarly argues that the March 28 Order provides no explanation of the basis for this requirement. Petal requests that the Commission revise Engineering Condition No. 6 from an annual requirement to a requirement that Petal conduct a storage inventory study every five years. Petal notes that the State of Mississippi’s rules and regulations require storage inventory studies only every five years, and asserts that there is no reasonable basis to require inventory verification studies on a more frequent basis.

Commission Response

38. The annual inventory study required by the March 28 Order would use routinely recorded, readily available, injection and withdrawal data to provide an analysis of the gas inventory in storage. This annual analysis would also readily provide indications of compromise to the integrity of the storage facility. The Commission does not believe that merely applying simple calculations to already-recorded pressure and volume data, on an annual basis, is unduly burdensome. Therefore, the Commission denies Petal’s request to modify Engineering Condition No. 6.

The Commission orders:

Rehearing is granted in part and denied in part, as discussed in the body of this order.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.