

142 FERC ¶ 61,095
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
Cheryl A. LaFleur, and Tony T. Clark.

Transcontinental Gas Pipe Line Company, LLC

Docket Nos. CP11-551-000
and RP12-993-001

ORDER APPROVING ABANDONMENT, AMENDING CERTIFICATE
AUTHORITY, AND GRANTING CLARIFICATION

(Issued February 7, 2013)

1. On September 29, 2011, Transcontinental Gas Pipe Line Company, LLC (Transco) filed an application under section 7(b) of the Natural Gas Act (NGA)¹ and Part 157 of the Commission's regulations² to abandon four of seven existing natural gas storage caverns at the Eminence Salt Dome Storage Field (Eminence Storage Field) near Seminary, Covington County, Mississippi. Transco also requests, under section 7(c) of the NGA,³ that the Commission amend Transco's existing certificate authority to reduce the total certificated storage capacity and deliverability of the Eminence Storage Field following the proposed abandonment. In addition, Transco requests that the Commission (1) certificate the amount of the Eminence Storage Field's reduced storage capacity that Transco may retain for system operations and flexibility and the amount of storage capacity that will be available to customers under service agreements; and (2) authorize corresponding reductions in Transco's customers' existing contract demands.

2. On October 31, 2012, the North Carolina Utilities Commission, the New York Public Service Commission, the Pennsylvania Office of Consumer Advocate, and the New Jersey Board of Public Utilities (collectively, State Agencies) filed a request for clarification or, in the alternative, rehearing of the Commission's September 28, 2012

¹ 15 U.S.C. §717f(b) (2006).

² 18 C.F.R. Part 157 (2012).

³ 15 U.S.C. § 717f(c) (2006).

order issued in Docket No. RP12-993-000.⁴ This proceeding involves Transco's general rate increase filing under section 4 of the NGA, which includes recovery of its costs to abandon the four subject caverns at the Eminence Storage Field. Specifically, the State Agencies seek clarification that the Suspension Order does not preclude them from challenging Transco's recovery of any costs to abandon the four subject caverns at the Eminence Storage Field.

3. We are granting in part and denying in part Transco's proposal, as discussed herein, and granting the State Agencies' request for clarification.

I. Background

4. Transco is a natural gas pipeline company formed under the laws of Delaware and subject to the Commission's jurisdiction as a natural gas company within the meaning of NGA section 2(6).⁵ Transco's natural gas transmission system extends from its principal sources of supply in Texas, Louisiana, Mississippi, and Alabama and offshore areas in the Gulf of Mexico, through the States of Georgia, South Carolina, North Carolina, Virginia, Maryland, Pennsylvania, and New Jersey, to its termini in New York City, New York.

5. Transco's Eminence Storage Field currently includes seven salt caverns.⁶ Caverns 1, 2, 3, and 4 were certificated in the early 1970's.⁷ Caverns 5, 6, and 7 were certificated in 1991, significantly expanding the field's total capacity.⁸ In the 1991 proceeding, Transco was authorized to operate the Eminence Storage Field with a total field capacity limitation, instead of operating the field with specific cavern capacity limitations, and to exceed the field's total capacity limitation by up to 15 percent on a temporary basis in any one year.⁹

⁴ *Transcontinental Gas Pipe Line Co., LLC*, 140 FERC ¶ 61,251 (2012) (Suspension Order).

⁵ 15 U.S.C. § 717a(6) (2006).

⁶ The caverns are designated Cavern 1 through Cavern 7.

⁷ *Transcontinental Gas Pipe Line Corp.*, 43 FPC 100 (1970); *Transcontinental Gas Pipe Line Corp.*, 47 FPC 1018 (1972).

⁸ *Transcontinental Gas Pipe Line Corp.*, 55 FERC ¶ 61,078 (1991), *order granting reh'g and clarification*, 55 FERC ¶ 61,443 (1991).

⁹ *Transco*, 55 FERC ¶ 61,443 at 62,326.

6. In addition to the salt caverns, Transco's certificated facilities at the Eminence Storage Field include four compressor units with a total horsepower (hp) of 15,635; seven injection/withdrawal wells; two observation wells; 1.56 miles of looped 30-inch diameter pipeline that connect the Eminence Storage Field facilities to Transco's mainline; and related facilities. The Eminence Storage Field's current total maximum certificated storage capacity, including the four caverns to be abandoned, is 20.5 billion cubic feet (Bcf), of which 15.0 Bcf is certificated working gas. The Eminence Storage Field's certificated maximum daily deliverability is 1,500 million cubic feet (MMcf) per day and its certificated maximum daily injection capability is 144.6 MMcf per day. Eminence Storage Field's current certificated parameters are summarized in Table I below:

Table I
Summary of Eminence Storage Field's Current Certificated Operating Parameters

Total Capacity	20.5 Bcf
Working Gas Capacity	15.0 Bcf
Cushion Gas Capacity	5.5 Bcf
Maximum Pressure	3,800 pounds per square inch absolute (psia)
Minimum Pressure	1,115 psia
Acreage	450 acres
I/W Wells (caverns)	7
Obs. Wells	2
Storage formation	Louann Salt
Caprock	Not identified
Peak Deliverability	1,500 MMcf per day
Max Injection	144.6 MMcf per day
Horsepower	15,635 hp

7. Transco uses the Eminence Storage Field to provide (1) operating flexibility to its pipeline system and (2) open-access Part 284 storage services under Rate Schedule ESS (Eminence Storage Service) and Rate Schedule EESWS (Emergency Eminence Storage Withdrawal Service).¹⁰

¹⁰ EESWS is a withdrawal service for back-up supply during *force majeure* events.

A. Transco's Description of the Events and Loss of Gas from the Eminence Storage Field and its Responsive Measures

8. On December 26, 2010, Transco detected a large, unexpected pressure drop in Cavern 3.¹¹ Transco subsequently determined that gas was leaking from the cavern.¹² Transco initially responded to the leak by flowing approximately 306 MMcf of gas into its pipeline system. In response to another gas leak from the wellhead of Cavern 3 and water shooting into the air from on-site water wells, Transco also vented at least 1 Bcf of gas from Cavern 3 from December 28, 2010, to January 3, 2011.¹³ On January 4, 2011, Transco ceased venting and began flaring gas from Cavern 3 until its production tubing became clogged with debris. Transco states that it flared approximately 9.8 MMcf of gas from Cavern 3.¹⁴

9. Meanwhile, on December 31, 2010, Transco discovered that gas was escaping externally from the ground around the wellhead of Cavern 1. Transco states that the gas continued to flow around the wellhead until March 10, 2011, when a large cave-in occurred, sealing off the flow.¹⁵

10. On January 4, 2011, due to the gas escape at the surface of Cavern 1 and based on a determination that the reduced pressure in Cavern 3 posed a risk to the salt pillars separating Cavern 3 from Caverns 1 and 2, Transco began to reduce the pressures of Caverns 1 and 2 by flowing gas into its pipeline.¹⁶ Also on January 4, 2011, Transco began drilling monitoring wells in the surrounding freshwater zones to mitigate the threat to the storage facilities, to determine the footprint of escaped gas, and to confirm that gas

¹¹ Specifically, the pressure dropped 357 pounds per square inch in one minute. Unless indicated otherwise, the description of the 2010 incident is based on pages 3 through 6 of the "Event Summary and Response Plan" (ESRP) dated November 3, 2011, that Transco submitted to the Mississippi Public Service Commission on Environmental Quality and also submitted to the Commission in various data responses in this proceeding.

¹² Application, Exhibit Z-2, Transco's January 31, 2011 Advance Report of Emergency Blanket Certificate Activities at p. 1.

¹³ Transco's ESRP at 3.

¹⁴ *Id.*

¹⁵ *Id.* at 4.

¹⁶ *Id.* at 6.

had not migrated beyond the field's boundaries and into residential water wells.¹⁷ By January 24, 2011, Transco decided to take Caverns 1 and 3 out of service and began filling Cavern 1 with water.¹⁸

11. Transco estimates that just before the unexpected pressure drop that occurred on December 26, 2010, the Eminence Storage Field contained 21.282 Bcf of gas stored in six of its seven caverns, in the following amounts:¹⁹

Table II
December 26, 2010 Total Gas Inventory by Cavern

Cavern 1	1.793 Bcf
Cavern 2	1.126 Bcf
Cavern 3	2.719 Bcf
Cavern 4	0 Bcf
Cavern 5	5.771 Bcf
Cavern 6	4.128 Bcf
Cavern 7	5.745 Bcf

12. In a data response, Transco stated that it had vented 1.20 Bcf, flared 1.94 Bcf, and produced 1.27 Bcf of gas from the caprock and surrounding water zones.²⁰

¹⁷ *Id.* Also, Transco drilled 13 pilot wells to safely flare gas that migrated into the caprock and sands above Cavern 3, and it drilled 270 monitoring wells at a variety of depths to locate gas that escaped from Cavern 3 into freshwater formations. *Id.* at 7.

¹⁸ *Id.* at 6.

¹⁹ Transco's April 25, 2012 Response to April 5, 2012 Staff Engineering Data Request No. 2, Question No. 6.

²⁰ Transco's April 25, 2012 Response to April 5, 2012 Staff Engineering Data Request No. 2, Question No. 11. It appears this vented, flared, and produced gas could only have come from Caverns 1 and 3 as a result of the incident and from Cavern 7 due to a leak into the caprock that Transco discovered in 2009. *Id.*; Transco's ESRP at 5-6; and Transco's Application at 16-17.

B. Additional Emergency Response Measures

13. On January 31, 2011, in response to the events at the Eminence Storage Field, Transco filed an “Advanced Report of Emergency Blanket Certificate Activities” in Docket No. CP11-73-000, as required by section 157.207 of the Commission’s regulations.²¹ This report detailed the 2010 incident, including Transco’s plans to drill test pilot and relief wells into Cavern 3 to remove any remaining gas and fill the cavern with water. The report also explained Transco’s plans to drill test wells into the caprock to locate and flare any stranded gas and to reduce pressure in the caprock to ensure safe drilling of the relief wells.

14. On March 31, 2011, Cavern 1 was completely filled with water. On July 15, 2011, Transco filed additional information in Docket No. CP11-73-000 to update the Commission about Transco’s emergency response. Transco stated it planned to capture gas from its pilot wells and inject that captured gas into its system. Transco also stated it was investigating the feasibility of drilling a sidetrack from Cavern 4’s wellbore into Cavern 3 to remove any remaining gas from Cavern 3 and fill it with water.²² In subsequent filings, Transco reported that in September 2011, after a shut-in pressure test indicated a slow leak from Cavern 2, it began to fill Cavern 2 with water, and that on October 23, 2011, Cavern 2 was completely filled with water.

15. Transco retained a consulting company, Subsurface Technology, Inc. (Subsurface), to conduct an overall evaluation of Caverns 1, 2, 3, and 4. Subsurface concluded that, given the age of the four caverns and their documented history and condition, including damage caused by salt creep, none of the four caverns should continue to be used for long-term natural gas storage services.²³ Transco states that it has thus decided to seek abandonment authority to permanently remove Caverns 1, 2, 3, and 4 from service.²⁴

16. Transco states that it had ceased using Cavern 4 for service in 2004 and filled it with water when its well casing failed at a depth of 5,379 feet. Transco had originally planned to further investigate Cavern 4 to determine if the cavern could be salvaged by sidetracking the collapsed casing. Now, however, Transco seeks approval to abandon

²¹ 18 C.F.R. § 157.207 (2012).

²² Transco’s Application, Exhibit Z-2.

²³ Transco’s Application, Exhibit Z-3 at 8.

²⁴ Transco’s Application at 10.

Cavern 4 because of the failure of Cavern 3 and Subsurface's recommendation that Cavern 4 be taken out of service permanently.²⁵

C. Transco's Communications with its Customers

17. On February 17, 2011, Transco sent its Rate Schedules ESS and EESWS customers a "Notice of Force Majeure Event" that Caverns 1 and 3 would not be returned to service, and that Transco would file an application with the Commission to abandon both caverns.²⁶ In the March 4, 2011 letter, Transco indicated that its recovery of costs related to the abandonment of Caverns 1, 2, 3, and 4 would be addressed in Transco's next NGA general rate case.²⁷

18. In a May 19, 2011 letter to customers, Transco noted that it had experienced no base gas losses due to the incidents at the Eminence Storage Field, but had lost 1,868,382 dekatherms (Dth) of top gas for which it received partial insurance reimbursement.²⁸ However, Transco stated that it would not seek to recover gas losses from the incidents from its storage customers through the fuel tracker provisions in section 38 of its General Terms & Conditions (GT&C) in its tariff.²⁹

II. Proposal

A. Proposed Abandonment of Facilities and Capacity and Certification of Reduced Storage Capacity, Withdrawal Capability, and Operating Pressure

19. As discussed above, Transco proposes to abandon Caverns 1, 2, 3, and 4 at the Eminence Storage Field. In addition, although the Eminence Storage Field, as a whole, has a currently certificated maximum operating pressure of 3,800 psia – and no certificated maximum operating pressures for the individual caverns – Transco proposes to establish 3,600 psia as the certificated maximum operating pressures for Caverns 5 and 6 and 2,775 psig for Cavern 7. Transco states these proposals will, in total, reduce the

²⁵ *Id.* at 14.

²⁶ *Id.* at 10-11; Exhibit Z-4, February 17, 2011, "Notice of Force Majeure Event."

²⁷ Transco's Application at 11-12. On August 31, 2012, Transco filed a general rate case in Docket No. RP12-993-000.

²⁸ Transco's Application at 11; Exhibit Z-4, May 19, 2011 Response to Eminence Customer Group Questions, Responses No. 7 and 8.

²⁹ *Id.* at Response No. 8.

Eminence Storage Field's storage capacity by 5.475 Bcf and its storage deliverability by 300 MMcf per day. Therefore, Transco requests amendment of its certificate authority for the Eminence Storage Field to reduce its total certificated storage capacity from 20.5 Bcf to 15.025 Bcf, including 10.05 Bcf of working gas capacity and 4.975 Bcf of base gas capacity,³⁰ and to reduce the storage field's certificated deliverability from 1,500 MMcf per day to 1,200 MMcf per day.³¹

20. To accomplish the proposed abandonment, Transco proposes to convert nine of the pilot wells constructed under its Part 157 blanket certificate emergency authority to observation wells;³² plug and abandon two existing observation wells; remove above-ground piping and related facilities connecting Caverns 1, 2, 3, and 4 to the station yard; install pressure gauges to monitor pressure in the abandoned caverns; install four 210-barrel tanks and related facilities to collect water that flows back from each cavern due to salt creep; install flow meters to record the water volume in each cavern; and plug and abandon the wells in Caverns 1, 2, 3, and 4 once the caverns have stabilized.³³ Transco estimates that these abandonment activities will cost \$76 million.³⁴

B. Sale of Eminence Storage Field Base Gas

21. Transco proposes to sell base gas from Caverns 1 through 4 and surplus base gas it believes it will no longer need to support operations in Caverns 5 through 7 at reduced operating pressure, and to retain the profits.³⁵ Transco states that it initially paid for this gas, it has not been reimbursed by its customers through depreciation or amortization for the capital it used to purchase this gas, and its customers have not borne risks associated

³⁰ Transco's December 6, 2011 Response to November 16, 2011 Engineering Data Request, Question No. 2; Transco's Application at 16.

³¹ *Id.*

³² The pilot wells to be converted are: 41B, MW9, MW10, JB1, GH1, BB1, CP1, BS1, and IS1.

³³ Under Transco's proposal, water will free-flow out of the caverns and into the 210-barrel tanks until the water in the caverns has reached stable temperatures. Transco estimates it will take up to 20 years before the wells can be safely plugged and abandoned.

³⁴ Transco states its estimated abandonment costs of \$76 million have not been adjusted to reflect amounts that it may recover from insurance claims or the costs of converting pilot wells to monitoring wells. Transco's Application at 15.

³⁵ *Id.* at 18.

with this base gas. Therefore, Transco states its retention of any net gain from its sale of the base gas would be consistent with Commission precedent.³⁶

22. Transco requests a waiver of section 358.5 of the Commission's regulations to permit its transmission function employees to administer the sale of base gas. In addition, as GT&C Section 43 of Transco's tariff provides only for emergency sales of gas for operational reasons, Transco also requests a waiver to conduct the sale of the base gas using the posting and bidding procedures under sections 43.2, 43.3, and 43.4 of its GT&C.³⁷

C. Service Under Rate Schedules ESS and EESWS

23. In view of the reductions in storage capacity and deliverability that would result from the proposed abandonment, Transco seeks the Commission's approval to reduce the total Storage Capacities and total Storage Demand Quantities available to customers under Rate Schedules ESS and EESWS. Transco also seeks the Commission's approval to amend its existing service agreements under these rate schedules, including service agreements for released capacity, so that its contractual obligations will not exceed the reduced levels of storage capacity and withdrawal capability that will be available for these services.

24. Specifically, Transco seeks the Commission's approval of the reduction of the total Storage Capacity Quantity available for customers under Rate Schedule ESS from 14,444,229 dekatherms (Dth) to 9,676,006 Dth and the reduction of the total Storage Demand Quantity that these customers can withdraw during the storage withdrawal season under Rate Schedule ESS from 1,443,977 Dth per day to 1,153,326 Dth per day. Transco does not propose any reduction in the total maximum quantity of 142,416 Dth per day that these customers can inject under Rate Schedule ESS during the storage injection season.

25. Similarly, Transco seeks the Commission's approval to reduce the total Storage Capacity Quantity available for customers under emergency Rate Schedule EESWS from 171,601 Dth to 114,953 Dth and to reduce the total Storage Demand Quantity that these customers can withdraw on an emergency basis from 17,229 Dth per day to 13,761 Dth per day. Transco does not propose any reduction in the total maximum quantity of 142,416 Dth per day that it can inject for customers under Rate Schedule EESWS.

³⁶ *Id.* at 20 (citing *Texas Gas Transmission, LLC*, 122 FERC ¶ 61,190, at P 48 (2008)).

³⁷ *Id.* at 18.

D. Consideration of Rate Consequences of Transco's Abandonment Proposal

26. Transco asserts its ongoing NGA section 4 rate case in Docket No. RP12-993-000 is the appropriate forum for addressing all rate consequences of its abandonment proposal in this proceeding.

III. Interventions

27. Notice of Transco's application was published in the *Federal Register* on October 14, 2011 (76 Fed. Reg. 63,916). Twenty-four parties filed timely, unopposed motions to intervene.³⁸ These parties are identified in Appendix C to this order. The New York State Public Service Commission and the North Carolina Utilities Commission filed notices of intervention.³⁹

28. Delmarva Power and Light Company (Delmarva) filed a motion to intervene out of time. We grant Delmarva's motion as doing as at this stage of the proceeding will not cause undue delay, disruption, or prejudice to any parties.⁴⁰

29. Consolidated Edison Company of New York, Inc. and Philadelphia Gas Works jointly filed a limited protest (collectively, Consolidated Edison). Patriots Energy Group (Patriots Energy)⁴¹ and Transco Municipal Group (Transco Group)⁴² filed a joint protest. The Indicated Local Distribution Companies⁴³ and Piedmont Natural Gas Company, Inc.

³⁸ Timely, unopposed motions to intervene are granted by operation of Rule 214 of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214 (2012).

³⁹ A timely notice of intervention filed by a state commission is granted by operation of Rule 214(a)(2). 18 C.F.R. § 385.214(a)(2) (2012).

⁴⁰ 18 C.F.R. § 385.214(d) (2012).

⁴¹ The Patriots Energy Group is a joint-action group whose members include the York County Natural Gas Authority, the Chester County Natural Gas Authority, and the Lancaster County Natural Gas Authority, all of South Carolina.

⁴² The members of Transco Group include the Cities of Alexander City and Sylacauga, Alabama; the Commissions of Public Works of Greenwood, Greer, and Laurens, South Carolina; the City of Union, South Carolina; and the Cities of Bessemer City, Greenville, Kings Mountain, Lexington, Monroe, and Shelby, North Carolina.

⁴³ The Indicated Local Distribution Companies include the Brooklyn Union Gas Company d/b/a National Grid NY; KeySpan Gas East Corporation d/b/a National Grid; Boston Gas Company, Colonial Gas Company, and Essex Gas Company (collectively

(Piedmont) separately filed comments. The National Park Service submitted a filing stating they have no comments.

30. Protestors object to Transco's stated intent to retain the proceeds of its proposed sale of its base gas from the Eminence Storage Field. Protestors state that they, as customers of Transco, are entitled to all or a portion of the net sale proceeds. In support, protestors state they are losing storage rights for which they have paid for years to maintain and that Transco may also seek in its rate case to recover its estimated \$76 million in costs to implement the proposed abandonment. Therefore, they claim they should share, or be given in its entirety, any gain on the sale of base gas Transco may receive as a result of this proceeding. Protestors also request that any order approving Transco's abandonment proposal be conditioned so as to require the issue of how proceeds from Transco's sale of Eminence Storage Field base gas are allocated be addressed in Transco's next rate case, which has since been initiated by Transco's filing of a general rate increase in Docket No. RP12-993-000.

31. As discussed further below, because we are denying Transco's request for authorization to abandon by sale any of its gas in the Eminence Storage Field, the protestors' arguments to support their position that Transco's customers are entitled to a share or all of the profits from Transco's proposed sale are moot.⁴⁴

IV. Discussion

32. Transco seeks to abandon existing facilities at the Eminence Storage Field that have been certificated for the transportation of natural gas in interstate commerce. In

d/b/a National Grid); EnergyNorth Natural Gas, Inc. d/b/a National Grid NH; Niagara Mohawk Power Corporation d/b/a National Grid; and the Narragansett Electric Company d/b/a National Grid, all subsidiaries of National Grid USA, Inc. (collectively the National Grid Gas Delivery Companies or National Grid); Atlanta Gas Light Company; Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas; Virginia Natural Gas, Inc.; Atmos Energy Corporation; and PSEG Energy Resources & Trade LLC.

⁴⁴ In its limited protest, Consolidated Edison requests that the Commission refrain from characterizing the December 26, 2010 incident as a *force majeure* event. Consolidated Edison argues that such a characterization might prejudice the determination of reservation charge credits customers may be entitled to under applicable state contract law. Whether the December 26, 2010 incident or any subsequent events that led to Transco's decision to take Caverns 1, 2, and 3 out of service in January 2011 constitute *force majeure* is not an issue in this abandonment proceeding, and we make no finding in this order that should be construed as the Commission's position on whether a *force majeure* event has occurred.

addition, Transco seeks amendment of the certificated storage capacity and withdrawal capability of the Eminence Storage Field and to establish individual maximum operating pressures for the storage field's remaining caverns. Therefore, Transco's proposals are subject to the Commission's jurisdiction pursuant to subsections (b) and (c) of section 7 of the NGA.

A. Abandonment of Caverns 1 through 4

33. As stated above, Transco proposes to abandon Caverns 1-4, and appurtenant facilities, which would reduce the Eminence Storage Field's storage capacity by 5.475 Bcf and its storage deliverability by 300 MMcf per day.

34. Caverns 1, 2, 3, and 4 of the Eminence Storage Field are some of the oldest solution mined natural gas storage caverns in the United States. Caverns 1, 2, 3, and 4 were originally certificated in 1970 and were placed into service in 1970, 1971, 1973, and 1973, respectively. They were constructed using the appropriate construction techniques and materials of the time. The Eminence Storage Field has a certificated total facility capacity limit of 20.5 Bcf, including both base gas and working gas. However, Transco also has certificate authority to exceed its total facility capacity limit in any one year by up to 15 percent (or 3.075 Bcf) for a total authorized capacity of 23.575 Bcf. Operating parameters for the individual caverns of the field have not been certificated by the Commission.

35. Caverns 1 through 4 were constructed in a square formation, with a distance between wells of 700 to 990 feet. Based on the maximum diameter of each cavern, the salt pillar distance between any two caverns is at least 580 feet, which surpasses the Mississippi State Oil and Gas Board (MSOGB) minimum required distance of 300 feet. This distance is designed to prevent hydraulic communication between any two adjacent caverns so that operations at one cavern will not affect other caverns. Notwithstanding, because the cause of failure at Cavern 3 is currently unknown and because of the subsidence that occurred at Cavern 1, Transco believes that the integrity of these two caverns has been irreparably compromised; therefore, Transco states that the caverns should be abandoned.

36. Transco states that its data supports the conclusion that the integrity of Cavern 1 is probably compromised to some degree. The venting at the wellhead of Cavern 1 within six days of the incident at Cavern 3 indicates that some level of hydraulic communication occurred between the two caverns. Venting at the wellhead could occur from three causes – valve failure (allowing gas to flow out the wellhead valves), the breaking of the bond between the casing and the cement (allowing gas to flow up between the cement and the casing), or breaking of the bond between the cement and the surrounding rock. However, the subsequent subsidence at Cavern 1 indicates that gas was probably flowing behind cement at some point and eroding the rock.

37. Transco states that, while Cavern 2 did not show any immediate evidence of integrity loss, the state of its casing string is such that the extent of damage cannot be determined with any degree of accuracy. Therefore, Transco believes Cavern 2 should also be retired out of caution. Even though it did not show any immediate evidence of integrity loss like Cavern 1, Transco states that a September 2011 pressure test indicated Cavern 2 to have a slow leak. As Cavern 2 is the farthest cavern from Cavern 3, it may have been the least affected of the caverns. Nevertheless, Transco speculates that the leak indicates Cavern 2 was affected to some extent, and thus the cavern should be retired.

38. Transco also states that the integrity of Cavern 4 has most likely been compromised by being out of service for more than seven years in response to its casing condition and because it is of a comparable age and distance from Cavern 3 as Cavern 1. As part of Transco's emergency activities under its Part 157 blanket certificate, it states it investigated the possibility of using the well of Cavern 4 to sidetrack into Cavern 3 to remove any remaining gas from Cavern 3 and fill it with water. However, Transco determined that the state of Cavern 4's well was such that it was unsuitable and would need some type of workover to even abandon safely. While there is no overwhelming physical evidence to support Cavern 4's loss of integrity, Transco believes that there is enough empirical evidence to support removal of Cavern 4 from service.

39. We find that the abandonment of Caverns 1, 2, 3, and 4, the related wells, and associated surface facilities is permitted by the public convenience or necessity. In December 2010, Transco experienced a catastrophic incident within Cavern 3, and that event affected the integrity of Caverns 1, 2, and 4. Transco's proposed abandonment plan for the four caverns, related wells, and surface facilities is technically feasible and meets MSOGB regulations for abandoning a cavern. The four caverns to be abandoned, plus the reduction in capacity of Cavern 7 (discussed below) as the result of reducing that cavern's operating pressure, represent a decrease of 5.475 Bcf in Transco's total facility capacity, which has contributed 300 MMcf per day of the facility's deliverability.

40. Transco took immediate steps to contain the events at the Eminence Storage Field, and, under its emergency Part 157 blanket certificate authority, shut-in three caverns (Cavern 4 was already shut-in and water filled). Transco is currently in the process of constructing its relief well into Cavern 3. Until that well is drilled and the cavern filled with water, ensuring all gas has been removed, Transco cannot begin to investigate the cause of the incident. Our finding here authorizing the abandonment of the four caverns is based on the physical and operational conditions of these caverns at this time. Other than the specific issues discussed in the following sections, these findings do not address any issues with regard to the cause of the catastrophic incident, costs associated with emergency and subsequent remediation, or cost responsibility.

41. Section 157.207 of the Commission's blanket certificate regulations requires that a company file reports with the Commission prior to undertaking any emergency activity under its Part 157 blanket certificate to describe the planned emergency activity. Transco's last report of emergency activity under its Part 157 blanket certificate authority was dated February 10, 2012, and described Transco's activities in regard to Cavern 4. That report indicated that the relief well for Cavern 3 was to be started in late March 2012 and completed within three months. Transco estimated an additional three months would be required to fill Cavern 3 with water.

42. Transco has not filed any further updates to its February 10, 2012 report, leaving the current status of the relief well and Cavern 3 unknown. Thus, to ensure the Commission is kept up to date on the emergency activities and Transco's investigation into the causes and consequences of the incident, our approval of Transco's abandonment proposal will be conditioned (see Appendix A, Engineering Condition 1) to require that it file semi-annual reports updating its emergency activities, its investigation into the incident, and the status of its abandonment activities. Transco will be required to continue filing the semi-annual reports until the Director of the Division of Pipeline Certificates, Office of Energy Projects, determines further reports are not necessary.

B. Amendment of Certificated Operating Parameters for the Eminence Storage Field

43. Following Transco's implementation of its proposed abandonment, only Caverns 5, 6, and 7 will remain in service at the Eminence Storage Field. Transco proposes to establish 3,600 psia as the certificated maximum operating pressure for Caverns 5 and 6 and 2,775 psia for Cavern 7. Based on these operating pressures for the remaining caverns, Transco requests that the Commission certificate a new total storage capacity limit of 15.025 Bcf for the Eminence Storage Field. Transco does not request any change to its current certificate authority to exceed the Eminence Storage Field's overall capacity limit by 15 percent in any given year. Nor does it request a change in the minimum operating pressure of 1,115 psia for each of the three caverns that will remain in service.

1. Certificated Parameters

44. Transco currently is certificated to operate the Eminence Storage Field with a total facility capacity limit of 20.5 Bcf, and it is permitted to exceed that limit by 15 percent in any given year.⁴⁵ Because this capacity limit applies to the entire facility, Transco has had authority to exceed its certificated maximum capacity by up to 3.075 Bcf (15 percent of 20.5 Bcf) in any one year. Specifically, under the current certificate authority, Transco

⁴⁵ *Transcontinental Gas Pipe Line Corp.*, 55 FERC ¶ 61,078 (1991), *order granting reh'g and clarification*, 55 FERC ¶ 61,443 (1991).

has discretion to allocate its total storage capacity among caverns as it deems appropriate. As described below, Transco has utilized this authority to physically increase the capacity of some caverns and remove another from physical service entirely, as long as there was no change to the total overall facility capacity. These changes in the working gas capacities of the individual caverns were implemented without prior Commission authorization and were based solely upon Transco's discretion as the certificated operator of the Eminence Storage Field.

45. Current Commission policy requires storage companies to get prior approval from the Commission before making changes to the operational capacities of their storage facilities.⁴⁶ Historically, the very first storage facility certificates had no specified operational volumes or pressures.⁴⁷ However, shortly thereafter, the Commission began issuing certificates with a maximum facility pressure limitation or a maximum volume.⁴⁸ By the 1970s, the Commission began certificating, among other parameters, a maximum facility volume at a maximum facility pressure limitation for depleted reservoir storage

⁴⁶ *Southern Star Central Gas Pipeline, Inc.*, 139 FERC ¶ 62,161 (2012) (increasing the certificated boundaries of Southern Star's Alden Storage Field both vertically and horizontally to include 1,592 lateral acres and an additional 1,680 vertical acres into which storage gas had migrated); *Leaf River Energy Center, LLC*, 139 FERC ¶ 62,221 (2012) (authorizing Leaf River to reallocate its certificated 41.892 Bcf of total cavern capacity by increasing the certificated capacity of two caverns and reducing the certificated capacity of another cavern); and *Pine Prairie Energy Center, LLC*, 135 FERC ¶ 61,168 (2011) (granting Pine Prairie's request for certificate authority to install two new electric-drive compressors with caveat that the new compressors should not be operated at full power if doing so would cause Pine Prairie's injection rate or withdrawal rate to exceed certificated maximum levels); *Columbia Gas Transmission Corp.*, 116 FERC ¶ 61,294 (2006) (authorizing Columbia to temporarily increase the maximum volumes of natural gas in certain storage facilities to levels above the certificated levels for those facilities).

⁴⁷ See *Equitrans, L.P.*, 119 FERC ¶ 61,287 (2007) (explaining that some underground storage facilities were developed before passage of the NGA in 1938, were not authorized by the Commission on a case-specific basis, or no record of initial certification could be found). See, e.g., *Hope Natural Gas Co.*, 3 FPC 994 (1943); *Tennessee Gas Transmission Co.*, 11 FPC 1050 (1952); *Williston Basin Interstate Pipeline Co.*, 127 FERC ¶ 61,045, at P 28 (2009) ("Neither Williston nor the Commission has access to the original 1949 certificated boundary map for the storage facility.").

⁴⁸ See, e.g., *Hope Natural Gas Co.*, 12 FPC 1094 (1953); *Natural Gas Storage Co. of Illinois*, 11 FPC 366 (1952).

facilities, aquifer storage facilities, and salt cavern storage facilities.⁴⁹ In the early 2000s, for facilities with multiple storage caverns, storage reservoirs, or storage formations, the Commission began setting individual maximum cavern, reservoir, or formation capacities at individual specific maximum pressures, along with a total facility maximum volume.⁵⁰ Most recently, the Commission has begun to specify the cushion gas capacity and minimum pressures for each storage reservoir, aquifer, or cavern, among other facility parameters.⁵¹ Thus, Commission policy has evolved over time to ensure adequate protection and preservation of the integrity of storage caverns (or reservoirs or formations).

46. The data in this proceeding supports application of the Commission's current policy of specifying not only a total facility maximum capacity, but also specific design criteria, individual cavern maximum capacities at specific individual maximum pressures, and related pressure gradients, to the amended certificates for the Eminence Storage Field's caverns that will remain in service. Transco's responses to staff data requests have identified at least two operational actions that were allowed under Transco's existing certificate, but which would no longer be allowed without prior Commission authorization under current certificate policy.

47. First, because only a maximum storage capacity had been certificated for the Eminence Storage Field, with no certificated maximum storage capacities for the individual caverns in the field, Transco was not required to obtain Commission authorization before significantly altering the allocation of the authorized capacity of the entire Eminence Storage Field among the various caverns. Consequently, in 2004, Transco took Cavern 4 out of service and shut it in, with no concrete plan at the time to repair and bring the cavern back into service. Limited only by the certificated maximum

⁴⁹ See, e.g., *Transcontinental Gas Pipe Line Corp.*, 43 FPC 100 (1970); *Columbia Gas Transmission Corp.*, 57 FPC 1710 (1977); *Transcontinental Gas Pipe Line Corp.*, 53 FPC 628 (1975); *Columbia Gas Transmission Corp.*, 57 FPC 1710 (1977); *NE Hub Partners, L.P.*, 83 FERC ¶ 61,043 (1998); *Central New York Oil and Gas Co., LLC*, 94 FERC ¶ 61,194 (2001).

⁵⁰ *Central New York Oil and Gas Co., LLC*, 116 FERC ¶ 61,277 (2006); *Caledonia Energy Partners, L.L.C.*, 124 FERC ¶ 61,041 (2008); *Leaf River Energy Center, LLC*, 125 FERC ¶ 61,131 (2008); *East Cheyenne Gas Storage, LLC*, 132 FERC ¶ 61,097 (2010); *Magnum Gas Storage, LLC*, 134 FERC ¶ 61,197 (2011).

⁵¹ See, e.g., *D'Lo Gas Storage, LLC*, 140 FERC ¶ 61,182 (2012) (requiring, among other parameters, Commission approval of cavern specific working gas capacities, cushion gas capacities, and maximum and minimum pressures); *PetroLogistics Natural Gas Storage, LLC*, 139 FERC ¶ 61,225 (2012).

storage capacity for the entire facility, Transco relied on its Part 157 blanket certificate authority to replace the lost capacity of Cavern 4 by permanently enlarging the other caverns without having to notify, undergo analysis, and get the approval of the Commission. Under current Commission policy of cavern specific limits along with a total facility limit, Transco would have either had to seek abandonment authorization for the volume of service it was no longer able to provide due to Cavern 4 being out of service, or seek an amendment to its certificate to allow it to enlarge one or more of the other caverns.⁵²

48. Second, again because the Eminence Storage Field has only a maximum storage capacity and not individual cavern capacity limits, Transco also was not required to obtain the Commission's authorization before re-leaching Caverns 1 and 3 to double their sizes in 2003 and 2001, respectively. Transco states that this enlargement was part of its routine maintenance activities at the facility to counter cavern shrinkage due to salt creep.⁵³ Salt creep, a geological process wherein salt flows over time into a void (e.g., the cavern) that is operated at a significantly lower pressure than the pressure exerted on the walls of the cavern, causes the cavern to shrink in volume over time. This shrinking induces stress on the casing strings, which, if excessive, can result in damage to the casing string and/or cement bond. The industry recommended practice, coupled with state requirements, is to design and operate caverns in terms of size, shape, volume, cavern depth, and range of operating pressures, along with other parameters, to minimize shrinkage due to salt creep. The Commission acknowledges that all caverns require periodic re-leaching to return the caverns to their designed or authorized size. The Commission also recognizes that leaching is not precise, and that a cavern designed to be, for example, 5 Bcf, might actually end up being slightly larger. However, doubling the size of the cavern (i.e., leaching an originally designed 5 Bcf cavern to 10 Bcf) is not a routine maintenance activity. Rather, it is an alteration of the underlying engineering design parameters of the facility.

49. Doubling the cavern size and then allowing salt creep to shrink the cavern back to the original size would theoretically increase risks to two physical parameters: (1) casing string integrity and (2) salt pillar thickness. As stated earlier, cavern shrinkage due to salt

⁵² As part of the amendment application, Transco would have been required to identify which cavern(s) would be enlarged and describe the new cavern design parameters, including the new cavern volume(s), cavern working gas volume(s), cavern cushion gas volume(s), new maximum and minimum pressures (if known) or any change in maximum and minimum pressure gradient at the casing shoe, any change in the casing shoe depth, new cavern dimensions (diameter, length), and change in salt pillar thickness between nearby caverns, salt edges, and surface boundaries.

⁵³ Transco states all of the caverns shrink by one percent per year due to salt creep.

creep can result in excessive stresses on the casing string and cement bond, potentially damaging the casing string or degrading the cement bond between the salt formation and the casing. This effect is neither operationally desirable nor warranted. The repeated stressing, if severe enough, could cause cavern failure.⁵⁴

50. Salt pillar thickness is designed to prevent solution mining from reducing the salt pillar to a degree where hydraulic communication between two adjacent caverns may occur. This thickness is determined during the design phase of the cavern and well placement.⁵⁵ Doubling the size of a cavern will reduce the salt pillar between the cavern and any adjacent salt caverns. That reduction in the thickness of the salt pillar would not necessarily result in too little distance between caverns, unless the adjacent caverns were originally constructed at the minimum separation distance, but could be just enough to increase the risk of communication between the two caverns.⁵⁶ Ultimately, operators seek to keep cavern pressures at a sufficient level to minimize creep, protect the casing string, and reduce the need for re-leaching.

51. Current Commission policy requires storage companies to get prior approval from the Commission before making any change to cavern capacities, including reallocation, increase, or decrease in capacity, whether it is for the total facility, an individual cavern, or both, as well as the expansion of caverns beyond the original certificated design

⁵⁴ The four caverns to be abandoned have multiple casing part separations and repairs, but because the actual cause of the incident has yet to be determined, damage to the casing string as a factor in the December 2010 incident cannot be declared. Cavern 7 has one casing part at 4,287 feet. While the current certificated maximum operating pressure for the Eminence Storage Field is 3,800 psia, Transco's testing shows that gas leaks into the caprock if Cavern 7 is operated at 3,600 psia.

⁵⁵ MSOGB regulations require a minimum distance between salt caverns (i.e., the minimum salt pillar thickness) to be 300 feet. This would then require the distance between wellheads used to leach the adjacent caverns to be 300 feet plus one half the sum of the cavern diameters. Industry best practices recommend the distance between two cavern wellheads be no less than twice the sum of the diameters.

⁵⁶ The leaching process may not result in a perfectly circular and perfectly centered cavern, resulting in the salt pillar being less thick at points. Further, any imperfections in the salt pillars could be exacerbated as the salt flows or is leached, creating non-homogeneous salt growths, including spurs, spalls, fractures, or other potential migration paths that could eventually precipitate communication between adjacent caverns.

parameters.⁵⁷ This requirement allows staff and the public to review and analyze the new design parameters and confirm that they are technically sound, feasible, and meet certain state regulations, particularly those addressing salt pillar thicknesses.

52. At this time, the cause or causes of the failure at the Eminence Storage Field are not known. However, given the current state of knowledge regarding storage facility design and engineering, we believe the flexibility that the current certificate's field-wide operating parameters and the operational and facility design flexibility of those parameters do not serve the public interest. Therefore, we will apply the Commission's current policies for the certification of storage facilities' operating parameters and amend Transco's certificate authority for the three caverns that will remain in service at the Eminence Storage Field, accordingly.

2. Capacities of Caverns 5, 6, and 7

53. Caverns 5, 6, and 7 are located within the center of the salt dome. The distances between the wellheads of Caverns 5, 6, and 7 and the wellheads of the caverns to be abandoned are 1,200 feet or greater. The minimum distance between the wellheads for Caverns 5, 6, and 7 is 800 feet, and the salt pillars between the caverns are 600 feet thick or more.

54. When originally certificated in 1991, Caverns 5, 6, and 7 were designed for a capacity of 4.07 Bcf each. However, Transco ultimately leached Caverns 5, 6, and 7 capacities greater than that. Transco states that, as of its last sonar survey conducted in May 2011, Cavern 5 had a capacity of 5.727 Bcf, Cavern 6 had a capacity of 4.126 Bcf, and Cavern 7 had a capacity of 6.375 Bcf, each at a maximum pressure of 3,600 psia at the casing shoe.

55. Transco's May 2011 survey, and the additional data it supplied relating to the catastrophic event at Cavern 3, support defining the operating capacity of Caverns 5 and 6 as 5.727 Bcf and 4.126 Bcf, respectively, at a maximum pressure of 3,600 psia at their respective casing shoes. We find that these operating parameters are acceptable for these two caverns and amend Transco's certificate authorization accordingly.

56. Transco states that Cavern 7 leaks gas into the caprock when operated at 3,600 psia. Since Cavern 7 failed its mechanical integrity test (MIT) at 3,600 psia at the casing shoe, Transco performed several MITs at lower pressures to determine the maximum pressure at which Cavern 7 can operate consistently without leaking. As a

⁵⁷ Even under the previous policy of certificating only a total facility capacity, the Commission did not intend for a storage company to be able to change or alter the underlying design parameters of the storage facility without prior Commission approval, even if the alteration did not result in a change in the certificated capacity.

result of these studies, and adding an additional increment of pressure reduction as a safety margin, Transco proposes a maximum pressure of 2,775 psia at the casing shoe, corresponding to a 0.65 psi per foot pressure gradient.⁵⁸ Transco states that operated at these parameters, Cavern 7 will maintain integrity and will not leak. Commission staff has calculated that a maximum capacity of 5.172 Bcf is achievable for Cavern 7 at this pressure. We therefore will certificate a total capacity for Cavern 7 of 5.172 Bcf at a maximum pressure of 2,775 psia at the casing shoe. However, because this cavern has been shown to leak above certain pressures, we are also establishing stringent monitoring and reporting requirements for all three of the remaining caverns at the Eminence Storage Field, as discussed below and detailed in the engineering conditions in Appendix A.

57. We find, consistent with NGA section 7 and the discussion above, that the public convenience and necessity requires approval of Transco's request to amend its certificate authority for the Eminence Storage Field to reduce the authorized total capacity of the facility to 15.025 Bcf (10.05 Bcf of working gas and 4.975 Bcf of base gas) and the deliverability of the facility to 1,200 MMcf per day. Our approval of Transco's requested certificate amendment to reduce the facility's authorized total storage capacity and deliverability will be conditioned to also establish specific certificated limits for each of the remaining active Eminence Storage Field caverns as shown on Table III below. Further, we deny Transco's request for continued authority to exceed the total overall capacity of the field (or of individual caverns) by up to 15 percent in any one year.

⁵⁸ The pressure gradient is the change in pressure as depth increases. Normal overburden pressure is 1 psi per foot. Gradients above that can potentially fracture the formation. MSOGB regulations state that the maximum pressure of a cavern is not to exceed 0.9 psi per foot at the casing shoe.

Table III
New Eminence Storage Field Cavern Operating Limits

	Old Certificate	New Certificate Operating Limits			
		Cavern 5	Cavern 6	Cavern 7	Facility
Total Capacity, MMcf	20,500 to 23,575	5,727	4,126	5,172	15,025
Working Gas Capacity, MMcf	15,000 to 18,075	3,961	2,854	3,235	10,050
Cushion (base) Gas Capacity, MMcf	5,500	1,766	1,272	1,937	4,975
Maximum pressure at casing shoe, psia	3,800	3,600	3,600	2,775	
Minimum Pressure at casing shoe, psia	1,115	1,115	1,115	1,115	
Deliverability, MMcf per day	1,500				1,200
Injection, MMcf per day	144.6				144.6

3. Reporting Requirements

58. In view of the problems experienced at the Eminence Storage Field, we direct Transco to establish a robust cavern integrity monitoring program for all three caverns that will remain in service (see Appendix A, Engineering Condition 7).⁵⁹ Transco will be required to file semi-annual summary reports of the results of the monitoring on or before May 1 and November 1 for the first five years. Beginning May 1, 2018, Transco will be required to file the summary reports on an annual basis throughout the life of storage operations. In addition, Transco will be required to monitor the caprock above the three caverns, particularly Cavern 7, for the presence of storage gas and file reports (Engineering Condition 2), establish a subsidence monitoring program (Engineering

⁵⁹ See *Pine Prairie Energy Center, LLC*, 135 FERC ¶ 61,168, at P 65 (2011) (establishing a cavern monitoring system in lieu of a periodic sonar survey condition); *Petal Gas Storage, L.L.C.*, 133 FERC ¶ 61,148 (2010) (imposing a cavern integrity monitoring plan); *D'Lo Gas Storage, LLC*, 140 FERC ¶ 61,182 (2012) (requiring natural gas storage operator to conduct sonar surveys or file a detailed cavern integrity monitoring plan consistent with the intent of the sonar survey requirement).

Condition 4), and comply with the other engineering conditions in Appendix A to this order.

C. Service Reductions

59. In conjunction with its proposed abandonment of Caverns 1- 4 and associated loss of storage capacity and deliverability, Transco seeks authorization to reduce the total Storage Capacity Quantity provided to Rate Schedule ESS customers from 14,444,229 Dth to 9,676,006 Dth and to reduce the Storage Demand Quantity from 1,443,977 Dth per day to 1,153,326 Dth per day. The total Rate Schedule ESS maximum injection quantity would remain at its current level of 142,416 Dth per day.

60. Transco similarly seeks authorization to reduce the total Storage Capacity Quantity provided to Rate Schedule EESWS customers from 171,601 Dth to 114,953 Dth and to reduce the Storage Demand Quantity from 17,229 Dth per day to 13,761 Dth per day. The total Rate Schedule EESWS maximum injection quantity would remain at 1,149 Dth per day.

61. Transco proposes to amend its existing service agreements to reflect a revised total Storage Capacity Quantity and Storage Demand Quantity.⁶⁰ To the extent there are any Rate Schedule ESS or Rate Schedule EESWS capacity release transactions in effect at the time the contract quantities are revised, Transco states the service agreements applicable to those capacity release transactions will also be amended, as necessary.

62. Transco states the remaining Eminence Storage Field working gas capacity of 609,041 Dth, deliverability of 72,913 Dth per day, and injection capability of 6,086 Dth per day would be allocated to Transco for system operating flexibility.

63. In sum, Transco requests two separate authorizations: (1) approval of specific capacity and deliverability levels for service under Rate Schedule ESS and Rate Schedule EESWS and for system capacity and deliverability; and (2) approval to reduce the contract capacity and deliverability demand levels of individual service agreements as reflected in Exhibit W to Transco's application to reflect its reduced certificated capacity and deliverability.

64. We deny Transco's request for approval of certificated capacity and deliverability levels by rate schedule and for system operations. The Commission does not certificate the amounts of capacity retained by pipelines for system flexibility. Further, the amount of capacity needed for system flexibility is best determined in a general section 4 rate

⁶⁰ See Transco's Application at Exhibit W (specifying the new contract capacity and demand levels).

case proceeding,⁶¹ and we will not prejudge the outcome of Transco's system flexibility capacity requirements that are at issue in Transco's current rate case in Docket No. RP12-993-000. The determination in that proceeding of the amount of the Eminence Storage Field's reduced capacity to be retained by Transco for system operations will determine the amount of the Eminence Storage Field's capacity that Transco will have to offer to its customers under open-access Rate Schedules ESS and EESWS.

65. Transco provides its services under Rate Schedules ESS and EESWS under its Part 284 blanket transportation certificate. Thus, the Commission has not certificated demand levels under these service agreements on a case-specific basis.⁶² However, once a pipeline commences service under its Part 284 certificate, it has an obligation under that certificate to continue service until abandonment is authorized under section 7(b) of the NGA. While section 284.221(d) of the blanket certificate regulations provides pre-granted authority for pipelines to abandon service when customers agree and under

⁶¹ The issue of retained system storage capacity and the related inventory has long been an issue in Transco's rate cases. *See Transcontinental Gas Pipe Line Corp.*, 117 FERC ¶ 61,232, at P 6 (2006) (describing section of settlement agreement providing for Transco to retain for purposes of system flexibility storage capacity at the Eminence Storage Field turned by eligible customers under Rate Schedule EESWS); 63 FERC ¶ 61,194 (1993) (finding Transco had not provided support for its need to retain 14 Bcf of storage capacity for system management, operational flexibility, and no-notice service and therefore requiring Transco to file engineering studies to support its claim); 115 FERC ¶ 61,268, at PP 45-56 (2006) (finding Transco's allocation of all the costs of some of its storage services solely to its rates for storage service inappropriate because the record showed that Transco uses all its storage facilities in performing its transportation and therefore that the costs of all of its storage facilities should be allocated to transportation); and 117 FERC ¶ 61,232, at P 6 (2006) (describing section of settlement agreement approved by order providing for Transco to retain for purposes of system flexibility storage capacity at the Eminence Storage Field turned back by eligible customers).

⁶² Prior to the Commission's restructuring of the gas industry and issuance of Part 284 blanket transportation certificates to interstate pipelines, a pipeline's certificate to provide transportation service for a particular customer specified the amount of gas that the pipeline was authorized to transport under the certificate. Thus, a partial reduction of the pipeline's certificated service obligation (and a corresponding reduction of the customer's demand charge obligations) required abandonment authorization by the Commission. *See, e.g., ANR Pipeline Co.*, 49 FERC ¶ 61,128 (1989) (reducing Northwest Pipeline Corporation's certificated level of transportation service for ANR Pipeline Company).

certain other circumstances,⁶³ that pre-granted abandonment authority in section 284.221(d) does not apply here. Yet, while the record does not show that Transco has received all of its Rate Schedules SESS and EESWS customers' agreements to reduce their contractual demand levels, none of Transco's customers have filed to oppose Transco's proposed reduction of their demand levels.⁶⁴ In view of these considerations and our certification in this order of lower storage capacity and deliverability levels for the Eminence Storage Field, we grant Transco's request for case-specific authorization to abandon service under currently effective agreements for storage service under Rate Schedules ESS and EESWS to reduce customers' demand levels to the levels shown in Appendix W to Transco's application. The revised contract demand levels set forth in Appendix W assume that Transco's rate case in Docket No. RP12-993 will result in Transco being allowed to retain working gas capacity of 609,041 Dth, deliverability of 72,913 Dth per day, and injection capability of 6,086 Dth per day at the Eminence Storage Field for system operations. Transco must make available to its customers any of the Eminence Storage Field's storage capacity and deliverability that Transco is not allowed in the rate case to retain to support system operations.

⁶³ Section 284.221(d) of the blanket certificate regulations provides for pre-granted abandonment for a pipeline to cease service under a firm service agreement upon expiration of the contractual term if the customer has not exercised a contractual right to continue such service or has not given notice that it wants to continue the transportation arrangement and will match the longest term and highest rate for the service, up to the applicable maximum rate.

⁶⁴ We note that in addition to the notice Transco's customers received when Transco filed its abandonment application in this proceeding on September 29, 2011, Transco also notified customers prior to filing its application that it would need to seek authorization to reduce its service obligations to customers under Rate Schedules ESS and EESWS due to the problems at the Eminence Storage Field. In a March 4, 2011 letter to customers responding to their questions (included in Exhibit Z-4 to application), Transco informed them that it probably would need to reduce its service obligations under Rate Schedules ESS and EESWS to approximately 70 percent of current levels. In a May 19, 2011 letter to customers (also included in Exhibit Z-4), Transco included a schedule listing its customers under Rate Schedules ESS and EESWS, their current contract demand levels for storage capacity and deliverability, and the reductions in those demand levels for which Transco planned to seek authorization. Customers' reduced demand levels shown in the schedule in Transco's May 19, 2011 letter to customers are the same as the reduced levels proposed by Transco in its abandonment application, as set forth in Exhibit W.

D. Base Gas Sales

66. Transco proposes to sell between 2,200,000 Dth and 2,800,000 Dth of gas and to retain the profits of such sale. Transco describes these volumes as base gas from Caverns 1 through 4⁶⁵ and surplus base gas it no longer needs to support operations in Caverns 5 through 7. Transco states that it initially paid for this gas,⁶⁶ it has not been reimbursed by its customers through depreciation or amortization for the capital it used to purchase this gas, and its customers have not borne risks associated with this base gas. Therefore, Transco states that its retention of any net gain from its sale of the base gas will be consistent with Commission precedent.⁶⁷

67. Transco states that until it has completed drilling a relief well into Cavern 3 and ascertained the amount of gas remaining there, it can only estimate the range of Eminence Storage Field base gas to be sold as between 2,200,000 Dth and 2,800,000 Dth.⁶⁸ However, Transco also indicates that the drilling into Cavern 3 has been significantly delayed.

68. As GT&C Section 43 of Transco's tariff provides only for emergency sales of gas for operational reasons, Transco requests a waiver to conduct the sale of the base gas using the posting and bidding procedures under sections 43.2, 43.3, and 43.4 of its GT&C.⁶⁹ Transco notes that we previously granted its request for a similar waiver to sell other gas stored in the Eminence Storage Field and Hester Storage facilities.⁷⁰ Transco also requests any waivers of the Standards of Conduct, 18 C.F.R. Part 358, including

⁶⁵ Cavern 4 did not contain gas when the December 26, 2010 event occurred.

⁶⁶ This gas is recorded as a fixed asset in Account No. 117.1, under the Commission's Uniform System of Accounts.

⁶⁷ Transco's Application at 20. Transco cites *Texas Gas Transmission, LLC*, 122 FERC ¶ 61,190, at P 48 (2008) as precedent for its proposal; however, as discussed further below, because Transco fails to demonstrate that it possesses the base gas it proposes to sell, we do not address whether our decision in *Texas Gas* is applicable here.

⁶⁸ Transco's December 6, 2012 Data Response to Engineering Data Request No. 2, Question 10. Transco also states that "there is no means to determine gas loss from individual caverns at Eminence because the caverns do not have individual meter measurement." Transco's April 25, 2012 Response to April 5, 2012 Staff Engineering Data Request No. 2, Question No. 2.

⁶⁹ Transco's Application at 18.

⁷⁰ See *Transcontinental Gas Pipe Line Co., LLC*, 128 FERC ¶ 61,111 (2009).

waiver of the Independent Functioning Rule in section 358.5 of the Commission's regulations, as necessary to permit its transmission function employees to conduct the Eminence Storage Field base gas sales. According to Transco, such waivers will enable it to avoid having to designate a transmission function employee as a marketing function employee to perform the sales and having to establish compliance procedures to address that designation.

69. We deny Transco's request to abandon by sale between 2,200,000 Dth and 2,800,000 Dth of base gas and its associated waiver requests. First, Transco proposes to abandon more base gas than the amount that was needed for the caverns the Commission is authorizing Transco to abandon. Transco's current total certificated base gas amount for the Eminence Storage Field is 5.50 Bcf for all seven existing caverns, as shown on Table III above. Also, as shown on Table III, the total base gas that will be certificated for the three caverns that will remain in service is 4.975 Bcf.

70. Second, Transco has not shown it still possesses even the 0.525 Bcf (546,000 Dth)⁷¹ of base gas that will no longer be needed for the four caverns being abandoned, much less than the far greater 2,200,000 Dth – 2,800,000 Dth of base gas that it proposes to abandon by sale. Transco provided a gas accounting of the December 26, 2010 event and subsequent activities as shown on the following table:⁷²

Table IV
Post December 26, 2010 Gas Accounting

	Bcf	MMDth
Vented	1.20	1.25
Flared	1.94	2.02
Produced	1.27	1.32
Total	4.41	4.59

71. Transco's data shows it vented or flared approximately 3.27 MMDth of gas, and it produced 1.32 MMDth of gas. Transco has stated that its customer accounts have not

⁷¹ Transco uses 1.04 Dth per Mcf as a conversion factor.

⁷² Transco's April 25, 2012 Response to staff's April 5, 2012 Engineering Data Request, Question No. 11.

been affected by the December 26, 2010 event and subsequent activities.⁷³ These figures indicate that the gas volumes lost in the December 26, 2010 event and subsequent emergency responses exceed the difference between Transco's former certificated base gas requirements for all seven of the existing caverns at the Eminence Storage Field and the new base gas levels we are certificating to keep Caverns 5, 6, and 7 in service. As a result, there is serious doubt as to whether Transco has surplus gas that can be sold.

72. Third, Transco has not proposed to abandon the responsibility of providing the base gas necessary to operate Caverns 5, 6, and 7. Transco claims the allegedly surplus base gas it proposes to sell is, in some manner, related to the changed operations of Eminence Storage Field. There are only three classes of gas in the Eminence Storage Field: (1) base gas necessary to operate the caverns; (2) customer inventory; and (3) system inventory. As discussed above, Transco's abandonment of Caverns 1-4 will reduce its needs for base gas by only 0.525 Bcf. Therefore, the only possible source for the remaining part of Transco's request for the sale of base gas is the remainder of the pre-existing base gas inventory – 4.975 Bcf – the amount which will still be needed for operation of Caverns 5-7. Transco is not proposing that others provide the base gas necessary to operate Caverns 5, 6, and 7. In the absence of Transco making such a proposal and obtaining Commission approval, Transco is required to maintain 4.975 Bcf of its own gas as base gas to operate the remaining caverns at the Eminence Storage Field.

73. Finally, if Transco has surplus gas in the Eminence Storage Field, we will not speculate whether the gas may be needed for Transco's system flexibility inventory,⁷⁴ pipeline line pack, system storage flexibility, base gas from other Transco facilities, or other possible purposes. The amount of gas that Transco needs to retain for system flexibility is an issue that goes beyond the operating parameters of the Eminence Storage Field and, as discussed above, is usually addressed in a general rate case. Furthermore, Transco has proposed to change its system gas requirements in its ongoing rate case in

⁷³ Transco states that it kept its Rate Schedules ESS and ESSWS customers whole. Transco's Application at 11 & Exhibit Z-4.

⁷⁴ As noted above, Transco indicates that as a result of the reduction in working gas capacity, system flexibility capacity provided by the Eminence Storage Field will be reduced to a total of 0.609 MMDth. While we are rejecting the proposal to address system inventory as a certificate matter, this proposed change in retained capacity appears to be significantly smaller than the proposed surplus inventory of 2,200,000 Dth and 2,800,000 Dth of base gas Transco seeks to sell.

Docket No. RP12-993-000. Our findings here are without prejudice to this issue in Transco's current rate case.⁷⁵

74. As we are denying Transco's request for authority to abandon any of its gas in the Eminence Storage Field by sale, we will dismiss as moot its request for a waiver to conduct the sale using the posting and bidding procedures under sections 43 of its GT&C and its request for any waivers of the requirements of the Standards of Conduct that would be necessary to permit its transmission function employees to conduct such gas sales. As stated above, our denial of abandonment authority to permit Transco's sale of any of its certificated base in the Eminence Storage Field also moots the protestors' arguments in support of their position that Transco's customers are entitled to a share or all of the profit from Transco's sale of gas.

E. Treatment of Abandonment Related Costs and Request for Clarification

75. Transco stated in its September 29, 2011 application for authorization to abandon facilities at the Eminence Storage Field that it would seek recovery of an estimated \$76 million in costs related to its abandonment proposal in a general rate filing yet to be made.⁷⁶ Transco requested in the application for abandonment authority that the abandonment costs and the recovery of those costs be deferred and addressed in the rate proceeding it would initiate under section 4 of the NGA.

76. On August 31, 2012, in Docket No. RP12-993-000, Transco filed a general rate increase under section 4 of the NGA. The rate case includes proposed recovery of the Eminence Storage Field abandonment costs. On September 28, 2012, the Commission issued an order in Docket No. RP12-993-000, accepting and suspending tariff records subject to refund and establishing hearing procedures.⁷⁷ In that Suspension Order, we (1) accepted and suspended, subject to refund, certain tariff records to be effective March 1, 2013; (2) accepted, without suspension, certain tariff records to be effective October 1, 2012; and (3) accepted all tariff records subject to the outcome of a hearing.⁷⁸

⁷⁵ Transco's Application in Docket No. RP12-993-000, Schedules E-3 and I-3 and Exhibit No. T-70, pp. 16-17.

⁷⁶ Transco's Application at 15.

⁷⁷ See *Transcontinental Gas Pipe Line Co., LLC*, 140 FERC ¶ 61,251 (2012) (Suspension Order).

⁷⁸ *Id.*

77. Although no protestors in Transco's abandonment proceeding in Docket No. CP11-551-000 objected to deferring the cost issues related to the abandonment proposal to Transco's rate case in Docket No. RP12-993, the North Carolina Utilities Commission, the New York Public Service Commission, the Pennsylvania Office of Consumer Advocate, and the New Jersey Board of Public Utilities (collectively, State Agencies) request we clarify their right to examine and question abandonment costs in the ongoing rate case.

78. Specifically, in their request for clarification or, in the alternative, rehearing of the Suspension Order in Docket No. RP12-993-001, State Agencies state that they are concerned with the Commission's statement in the Suspension Order that: "To the extent the Commission acts [on Transco's abandonment proposal] in Docket No. CP11-551-000 *prior* to the conclusion of the test period in this proceeding, then the parties may discuss the effect of abandonment on the rates at issue in this proceeding."⁷⁹ State Agencies are concerned that the language as written could be misinterpreted to preclude any discussion in the Docket No. RP12-993-000 rate case of the failure of the Eminence Storage Field caverns and the associated cost impact of that failure if the Commission has not acted on Transco's abandonment proposal by February 28, 2013, the conclusion of the test period for Transco's rate case.

79. Section 154.303(a)(4) of the Commission's regulations provides, *inter alia*, that in a section 4 rate case, costs may be adjusted for changes in revenues and costs which are known and measurable with reasonable accuracy at the time of the filing and which will become effective, within the adjustment period. Transco's application for authorization to abandon facilities at the Eminence Storage Field includes its estimated costs to implement the abandonment. This order granting the requested abandonment authorization is being issued before the end of the rate case's test period on February 28, 2013. Further, Transco has already taken Caverns 1-3 out of service. Transco is required pursuant to section 154.303(c)(2) of the Commission's regulations to remove from the rates costs associated with any facilities not in service as of the end of the test period, and section 154.311 of the regulations requires that Transco update its statements within 45 days of the end of the test period.

80. The ongoing rate case in Docket No. RP12-993 provides an appropriate and effective forum to examine the cost allocation and rate design issues raised by Transco's abandonment of facilities and storage capacity at the Eminence Storage Field and Transco's emergency response measures at the facility. Accordingly, we will grant Transco's request that the costs and the recovery of its abandonment costs be addressed in its rate proceeding in Docket No. RP12-993. For the same reasons, we grant the State Agencies request for clarification that customers, parties, and participants have the full

⁷⁹ *Suspension Order*, 140 FERC ¶ 61,251 at P 33 (italics added).

opportunity in Transco's ongoing rate case to challenge all aspects of any costs arising from, or attributable to, Transco's emergencies activities and abandonment of facilities at the Eminence Storage Field.

F. Accounting

81. The Indicated Local Distribution Companies assert that we should condition our abandonment authorization on the requirement that Transco record the costs of the abandonment in a separate subaccount of Account 108, Accumulated Provision for Depreciation of Gas Utility Plant, until such time as we decide the cost recovery issues raised by Transco's proposed abandonment in a rate case. The Indicated Local Distribution Companies state that we have required similar accounting treatment in a case such as this one where the pipeline has incurred a substantial cost to abandon facilities.⁸⁰

82. Transco is required by Gas Plant Instruction (GPI) No. 11, Work Order and Property Record System Required, of the Commission's Uniform System of Accounts to segregate and keep track of gas plant being abandoned, the total cost thereof, the source of the costs, and the gas plant account or accounts being charged or credited with the retirement activity.⁸¹ As such, the abandonment information that the Indicated Local Distribution Companies seek is required to be readily available in addressing the recovery of these costs. There is no need to impose additional cost segregation as a separate condition of abandonment in this case. Accordingly, Transco must record the abandonment consistent with GPI No. 11, and we will not require Transco to record the costs of the abandonment in a separate subaccount of Account 108.

G. Environment

83. To satisfy the requirements of the National Environmental Policy Act, Commission staff prepared an environmental assessment (EA) for Transco's proposal. The analysis in the EA addresses geology, soils, water resources, wetlands, vegetation, wildlife, threatened and endangered species, land use, recreation, cultural resources, air quality, noise, safety, cumulative impacts, and alternatives. The EA was placed into the public record on June 27, 2012.

84. The EA describes Transco's proposed abandonment activities at the Eminence Storage Field located in Covington County, Mississippi. The EA also discusses the natural gas leak events that occurred in 2010 and emergency response actions by Transco under its Part 157 blanket certificate. The EA states that all actions to stabilize the field have been overseen by the MSOGB, which has jurisdiction over well activities in the

⁸⁰ See, e.g., *Transwestern Pipeline Co.*, 41 FERC ¶ 61,319, at 61,847 (1987).

⁸¹ 18 C.F.R. Part 201 (2012).

state. Transco has also been in contact with the Mississippi Department of Environmental Quality documenting environmental compliance activities at the facility.

85. The EA analyzed the possibility that gas from Transco's leak event at Caverns 1 and 3 may have migrated into groundwater aquifers.⁸² Transco prepared groundwater flow contour maps that show the direction of ground water flow to the southeast direction from the Eminence Storage Field. The results of Transco's sampling conducted in December 2010 through July 2011 and in February and March 2012 for public water-supply wells and for selected private wells shows that of the 23 private wells tested, only two were found to have detectable levels of methane in the headspace analysis and one well with concentrations above the laboratory detection limit (1 milligram per liter) in the dissolved-phase (dissolved in water).

86. The EA found that the dissolved-phase equivalent of elevated methane levels detected in the analysis are significantly below the U.S. Department of Interior, Office of Surface Mining's "Recommended Action Levels."⁸³ In addition, the only dissolved-phase concentration detected down gradient of the storage field currently does not pose a threat to health or safety.

87. The EA states that it is not presently clear where the methane detected in the wells originates from, and the hydrocarbon analysis comparison does not conclusively rule out the storage field as one of the possible methane sources. To monitor the methane movement, the EA provides a recommendation for Transco to develop a monitoring and mitigation plan to address private and public water supply wells down gradient of the Eminence Storage Field. We have included this recommendation, as revised, as environmental Condition No. 4 contained in Appendix B to this order.

88. Based on the analysis in the EA, we conclude that if the abandonment and construction activities are carried out in accordance with Transco's application and supplements and in compliance with the environmental conditions in Appendix B, our approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment.

89. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this certificate. The

⁸² EA at p. 14.

⁸³ EA at p. 15; Eltschlager and others 2001. Technical Measures for the Investigation and Mitigation of Fugitive Methane Hazards in Areas of Coal Mining. Accessed at: <http://arblast.osmre.gov/downloads/Mine%20Gases%20and%20Dust/FINAL-Methane.pdf>.

Commission encourages cooperation between interstate pipelines and local authorities. However, this does not mean that state and local agencies, through application of state or local laws, may prohibit or unreasonably delay the construction, operation and replacement of facilities approved by this Commission.⁸⁴

The Commission on its own motion received and made a part of the record in this proceeding all evidence, including the application(s), as supplemented, and exhibits thereto, submitted in support of the authorizations sought herein, and upon consideration of the record,

The Commission orders:

(A) Transco is granted permission and approval under NGA section 7(b) to abandon Caverns 1, 2, 3, and 4, the associated storage capacity, storage deliverability, and appurtenant facilities at the Eminence Storage Field, as described in this order and more fully described in the application.

(B) Transco's request for amendment of its certificate authority to reduce the Eminence Storage Field's total certificated storage capacity from 20.5 Bcf to 15.025 Bcf, including 10.05 Bcf of working gas capacity and 4.975 Bcf of base gas capacity, and to reduce the storage field's certificated deliverability from 1,500 MMcf per day to 1,200 MMcf per day is granted, subject to the conditions discussed herein to establish specific certificate operating capacities and parameters for Caverns 5, 6, and 7 as set forth in Table III this order.

(C) The authority issued in Ordering Paragraphs (A) and (B) is conditioned, as discussed in this order, and on the following:

- (1) Transco's compliance with the engineering conditions listed in Appendix A to this order.
- (2) Transco's compliance with the environmental conditions listed in Appendix B to this order.

(D) Transco shall notify the Commission within 10 days of the date of abandonment of the facilities described above.

(E) Transco shall comply with Part 154 of the Commission's regulations.

⁸⁴ See, e.g., *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Service Comm'n*, 894 F.2d 571 (2nd Cir. 1990); *Iroquois Gas Transmission System, L.P.*, 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

(F) The request for clarification is granted as discussed in this order and cost issues related to the Eminence Storage Field catastrophic event and associated abandonment may be addressed in the hearing established in Transco's section 4 rate proceeding in Docket No. RP12-993-000.

(G) Transco's request for authorization to abandon by sale gas volumes identified in its application in CP11-551-000 as base gas is denied.

(H) The waiver requested by Transco to conduct the sales of Eminence Storage Field base gas under the procedures in GT&C section 43.2, 43.3 and 43.4 of its tariff is denied as moot. The waivers of the Commission's Standards of Conduct requested by Transco for such sales, as described in the body of this order, are also denied as moot.

(I) The Commission denies Transco's request for approval of certificated capacity levels for services under Rate Schedules ESS and ESSWS or for certificated capacity levels that Transco may retain for system operating flexibility.

(J) Transco shall notify the Commission's environmental staff by e-mail, telephone, and/or facsimile of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies Transco. Transco shall file written confirmation of such notification with the Secretary within 24 hours.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Appendix A

Engineering Conditions

1. Transco shall file semi-annual reports on or before May 1 and November 1 updating the status and results of its emergency activities under its Part 157 blanket certificate in response to the 2010 incident, its investigation into the cause of the incident, and the status of its activities to abandon Caverns 1-4 at the Eminence Storage Field. Transco must continue to file the semi-annual reports until the Director of the Division of Pipeline Certificates, Office of Energy Projects, determines further reports are not necessary.
2. Transco shall monitor the caprock above the salt dome, and above Cavern 7, for the presence of storage gas, for the life of Caverns 5-7. Transco shall notify the MSOGB immediately if the presence of storage gas is detected in the caprock. Transco shall file with the Commission, under CP11-551-000, the results of the monitoring of the caprock on a semi-annual basis for a period of five years. The reports will be due May 1 and November 1 each year for the first five years. If no storage gas is present in the caprock above Cavern 7 when it files its report due May 1, 2018, Transco must file the results on an annual basis, and may include the results as part of its annual report pursuant to section 157.207 of the blanket certificate regulations.
3. Transco shall file with the Commission in its first semi-annual report, a more thorough geological description of the caprock, including its formation name (if any), the type of rock, its thickness, and any other pertinent data used to identify it.
4. Transco shall establish and maintain a subsidence monitoring network over the cavern storage area.
5. Transco shall assemble, test, and maintain an emergency shutdown system.
6. Transco shall log each well of Caverns 5-7 at least once every three years to check the casing and cement bond status and file the results with that period's semi-annual report.
7. Transco must file with the Commission, within 60 days of accepting this order, and for prior approval of the methodology, a detailed and robust cavern integrity monitoring plan that is consistent with the intent of a sonar survey, and will allow Transco to monitor cavern dimensions and shape, including the cavern roof, and estimate pillar thickness between caverns. Transco must file a summary report of the results of the monitoring with the Commission semi-annually for a period of five years. The semi-annual reports for the first five years will be due May 1 and November 1. Beginning May 1, 2018, Transco must file the summary report of the monitoring results annually

throughout the life of the storage operations, and may include the results as part of its annual report pursuant to section 157.207 of the blanket certificate regulations.

8. Transco shall conduct an annual inventory verification study on each cavern of Caverns 5-7 and file the results with the Commission as part of that period's semi-annual or annual report.

9. The following parameters apply to the Eminence Salt Cavern Storage Field facility and shall not be altered without prior Commission authorization:

	Cavern 5	Cavern 6	Cavern 7	Facility
Total Capacity	5,727 MMcf	4,126 MMcf	5,172 MMcf	15,025 MMcf
Working Gas Capacity	3,961 MMcf	2,854 MMcf	3,235 MMcf	10,050 MMcf
Cushion (base) Gas Capacity	1,766 MMcf	1,272 MMcf	1,937 MMcf	4,975 MMcf
Maximum pressure at casing shoe	3,600 psia	3,600 psia	2,775 psia	
Minimum Pressure at casing shoe	1,115 psia	1,115 psia	1,115 psia	

10. The peak deliverability of the total facility shall be 1,200 MMcf per day and the total facility peak injection rate shall be 144.6 MMcf per day.

11. Transco may not exceed the total facility certificated limit of 15,025 MMcf in any calendar year.

12. Transco shall comply with all MSOGB rules and regulations that are applicable to natural gas salt cavern storage facilities.

13. Transco shall file semiannual reports for each cavern of Caverns 5-7 (to coincide with the termination of the injection or withdrawal cycles), containing the following information (volumes shall be stated at 14.73 psia and 60°F):

- a. the daily volume of natural gas injected and withdrawn;
- b. the inventory of natural gas and shut-in wellhead pressure for each cavern at the end of reporting period;
- c. the maximum daily injection and withdrawal rates experienced for the entire storage field during the reporting period;

- d. the average working pressure on such maximum days taken at a central measuring point where the total volume injected or withdrawn is measured;
 - e. the results of any tests performed to determine the actual size, configuration, or dimensions of the storage caverns;
 - f. a discussion of current operating problems and conclusions;
 - g. other data or reports which may aid the Commission in the evaluation of the storage project; and
 - h. the results of leak detection tests performed during storage operations to determine the integrity of each cavern/wellbore, casing, and wellhead.
14. Transco shall file the semiannual reports in accordance with section 157.214(c) of the Commission's regulations until the maximum inventory reaches or closely approximates the maximum capacity authorized and for a period of five years following, and then annually throughout the life of the storage operations.

Appendix B

Environmental Conditions

As recommended in the EA, this authorization includes the following conditions:

1. Transco shall follow the abandonment and construction procedures and mitigation measures described in its application, supplements, including responses to staff data requests, and as identified in the EA, unless modified by this order. Transco must:
 - a. request any modifications to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of the Office of Energy Projects (OEP) before using that modification.
2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the project. This authority will allow:
 - a. the modification of conditions of this order; and
 - b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.
3. Prior to abandonment/construction, Transco shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors, and contractor personnel will be informed of the environmental inspector's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities.
4. **Within 60 Days of the issuance of the Commission's order**, Transco shall file with the Secretary, for the review and written approval of the Director of OEP, a groundwater monitoring plan. The plan shall include provisions:
 - a. to conduct quarterly monitoring for both head space and dissolved-phase analysis of methane in the 363 Brashier well, Transco's FW Bounds supply

well, and the Southwest Jones Water Association supply wells (wells 1, 2, 3, and 4) completed within the Citronelle, and the Upper and Lower Catahoula aquifers, respectively;

- b. to mitigate for any methane concentrations if dissolved-phase concentrations of methane are found to exceed U.S. Department of Interior, Office of Surface Mining Recommended Action Levels; and
 - c. to file the reports of the quarterly monitoring results with the Secretary.
5. Transco shall continue the quarterly monitoring and report filing for **one year** following the abandonment of cavern 3 and the removal of natural gas from the caprock and the aquifers.

Appendix C**Timely Interventions**

Atmos Energy Corporation
Atmos Energy Marketing LLC
Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.
Chesapeake Utilities Corporation
ConocoPhillips Company
Consolidated Edison Company of New York, Inc. and Philadelphia Gas Works
Constellation Energy Commodities Group, Inc.
Elizabethtown Gas, Atlanta Gas Light Company, and Virginia Natural Gas, Inc.
Florida Power Corporation d/b/a Progress Energy Florida, Inc.
Municipal Electric Authority of Georgia
Municipal Gas Authority of Georgia⁸⁵
National Grid Gas Delivery Companies
New Jersey Natural Gas Company
New York State Public Service Commission
North Carolina Utilities Commission
Patriots Energy Group and Transco Municipal Group
PECO Energy Company
Piedmont Natural Gas Company, Inc.
PSEG Energy Resources & Trade LLC
Public Service Company of North Carolina and South Carolina Electric & Gas Company
SCANA Energy Marketing, Inc.
UGI Distribution Companies⁸⁶
Virginia Power Energy Marketing, Inc.
Washington Gas Light Company

⁸⁵ The Municipal Gas Authority of Georgia consists of the following municipalities: the Georgia municipalities of Bowman, Buford, Commerce, Covington, Elberton, Hartwell, Lawrenceville, Madison, Monroe, Royston, Social Circle, Toccoa, Winder; the Tri-County Natural Gas Company (consisting of the Georgia municipalities of Crawfordville, Greensboro, and Union Point); the East Central Alabama Gas District, Alabama; the towns of Wadley and Rockford, Alabama; the Utilities Board of the City of Roanoke, Alabama; Wedowee Water, Sewer & Gas Board, Wedowee, Alabama; and the Maplesville Waterworks and Gas Board, Maplesville, Alabama.

⁸⁶ The UGI Distribution Companies for this filing consists of UGI Utilities, Inc., UGI Penn Natural Gas, Inc., and UGI Central Penn Gas Inc.