

U.S. Department of Transportation
Research and Special Programs Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

JAN 28 2003

Robert F. Smalleomb, Jr.
Director, Pipeline Engineering and Safety Division
Massachusetts Department of Telecommunications & Energy
One South Station
Boston, MA 02110

Dear Mr. Smallcomb:

We have considered your letter of September 4, 2002, notifying us that the Massachusetts Department of Telecommunications & Energy (MDTE) has granted the KeySpan Energy Delivery Services Company (KeySpan) a waiver from compliance with 49 CFR Part 192, § 192.619 (a)(2)(ii). The waiver will permit KeySpan to uprate approximately 23.9 miles of its Sagamore distribution main line and increase its maximum allowable operating pressure from 200 psig to 270 psig without pressure testing. The pipeline is cathodically protected, coated, carbon steel pipe. The nominal pipe diameters are 2, 8, 10, and 12 inches.

KeySpan sought the waiver because of difficulties in pressurizing the line segment above 270 psig. The primary difficulty is that the 23.9 mile Sagamore segment is only one of two main feeder lines serving the Cape Code area; shutting down the line for pressure testing would disrupt the city's gas supply and affect approximately 40,000 Cape Code customers.

We note that the 23.9 mile segment of pipeline passed an uprating procedure involving staged pressure increases to 270 psig, with a leak survey at each stage. We also note that the operation of the segment at 270 psig corresponds to 19.7% of the specified minimum yield strength of the pipe. In addition, the MDTE requires KeySpan to partially operate eleven primary valves at least once each calendar year, not to exceed 15 months and perform annual instrumented leakage surveys of the segment.

In consideration of these factors, we have no objection to the waiver.

Sincerely,
Stacey L. Gerard
Associate Administrator
for Pipeline Safety

THE COMMONWEALTH OF MASSACHUSETTS
OFFICE OF CONSUMER AFFAIRS AND BUSINESS REGULATION
DEPARTMENT OF TELECOMMUNICATIONS & ENERGY
ONE SOUTH STATION
BOSTON, MA 02110

September 4, 2002

Ms. Stacey Gerard
Associate Administrator for Pipeline Safety (DPS-1)
Research and Special Programs Administration
Department of Transportation
400 Seventh Street, SW.
Washington, D.C. 20590

RE: Waiver of Pipeline Safety Regulations

Dear Ms. Gerard:

Being a certified agent under section 60105, Public Law 103-272, the Massachusetts Department of Telecommunications and Energy has approved a waiver to Keyspan Energy Delivery ("Keyspan") from the requirements of Title 49 C.F.R. Part 192, § 192.619(a).

The waiver allows Keyspan to establish a new M.A.O.P. of 270 psig for their Sagamore line without meeting the pressure test requirements of Title 49 C.F.R. Part 192, §192.619(a)(2)(ii). The line begins in Bourne and runs through Sandwich, Barnstable and Yarmouth, Massachusetts. The main, which is primarily ten-inch and twelve-inches in diameter, was built between 1962 and 1989. It is one of only two main feeder lines serving the Cape Cod area. Keyspan conducted an uprating in accordance with Title 49 C.F.R. Part 192, Subpart K - Uprating.

As required by section 60118(d), Public Law 103-272, I am forwarding a copy of the waivers to your office with the understanding that the waivers will be effective within 60 days of notification unless the Secretary objects to the waiver in writing before the effective date.

Thank you for your support in this matter.

Very truly yours,
Robert F. Smallcomb, Jr.
Director, Pipeline Engineering and Safety Division

KeySpan Corporation
201 Rivermoor Street
West Roxbury, MA 02132

July 17, 2002

Ms. Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
Commonwealth of Massachusetts
One South Station
Boston, MA 02110

Re: Waiver Request for Operating the Sagamore Line on Cape Cod attligner Piissures

Dear Ms. Cottrell:

KeySpan Energy Delivery is submitting the attached waiver request to the Massachusetts -Department of Telecommunications and Energy ("MDTE") in order to allow an existing high-pressure gas distribution pipeline, referred to as the Sagamore Line, to operate at a higher maximum allowable operating pressure ("MAOP"). KeySpan is seeking waiver of Title 49 CFR Part 192, § 192.619(a), inclusive, and acceptance of Federal regulated uprating procedures as an acceptable means of qualifying this pipeline for the new MAOP. Nationally, public service commissions have granted such waivers with the concurrence of the U.S. Department of Transportation. They have done this for those pipelines that exhibit good historical integrity and cannot, for very practical reasons, be removed from operation for standardized pressure testing. KeySpan believes that the Sagamore Line meets these criteria and the attached waiver addresses the more technical points of this request.

Should the MDTE have any more questions or concerns, please address them to Stanley Kastanas, at the address on the letterhead or by calling (617) 723-5512, extension 4776.

We appreciate the MDTE's time and consideration in this matter.

Sincerely,
George B. Jongeling
Vice President – Gas Operations

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY
PETITION FOR WAIVER
WAIVER REQUEST DATE: JULY 17, 2002

Waiver Summary)	Petitioner:
Petitioner requests an exemption from)	KeySpan Energy Delivery
potential application of Title 49 CFR)	201 Rivermoor Street
Part 192, §192.619(a), inclusive, for)	West Roxbury, MA 02132
uprating the MAOP of a high pressure)	(617) 723-5512
pipeline traversing through the Towns of)	
Sandwich, Barnstable, and Yarmouth,)	
Massachusetts.)	
)	
)	Contact Person
)	Stanley T. Kastanas

Waiver Summary

Colonial Gas Company d/b/a KeySpan Energy Delivery ("KeySpan") is seeking a waiver to uprate an existing high-pressure distribution main located in its Cape Cod Division from a maximum allowable operating pressure ("MAOP") of 200 to 270 pounds per square inch gauge ("psig"), without conducting a pressure test required under Title 49 CFR Part 192, §192.619(a). This high-pressure main is a key distribution line that cannot be, practically, segmented or taken out-of-service for pressure testing without affecting over 60% of KeySpan's Cape Cod customers. As an alternative, KeySpan would like to apply integrity testing requirements under Title 49 CFR Part 192, Subpart K-Uprating, to achieve an "uprated" MAOP for this distribution main. Granting this waiver would benefit natural gas consumers on Cape Cod by providing a higher MAOP to meet growing heating and peak load demands with minimal economic impact to consumers, no environmental impact issues and no reduction in pipeline safety.

Growing Need and Reliability

KeySpan continually evaluates its reliability assets to meet present and future consumer demands. Recent heating seasons are indicative that there are more year-round residents living in this resort community, compounded by expansion of existing homes, and addition of new homes. Data indicating new consumer demographics, changing fuel utilization patterns, and increased demand for environmentally sensitive natural gas, have been entered into state-of-the-art engineering distribution models for predictive analysis. Even with a succession of mild winters, it is readily apparent that all these factors are influencing degree-day demand triggers and new peak-demand requirements. KeySpan is concerned that its ability to, reliably, supply its customers could be impacted in the future if it does not find ways to improve system pressures for delivering needed gas supplies.

Maximize Utilization of Existing Facilities

The most conservative and least invasive approach for improving reliability, while controlling the economic impact to consumers, is to maximize the reliability of existing facilities. One of these pipeline facilities is known as the "Sagamore Line." This gas distribution main runs from the Algonquin Gas Transmission Company's meter station at the Sagamore Bridge in Bourne, through the towns of Sandwich, Barnstable, and Yarmouth. This main was constructed from 1962 through 1989. Constructed of coated carbon steel pipe, its nominal dimensions range from 10-inch diameter to 12-inch diameter, with smaller interconnected sections of 8-inch and 2-inch diameter.

I. Pipeline Operating Pressure

The pipeline was qualified for an MAOP of 200 psig. However, test pressures for various segments have reached

over 400 psig., with no component failures reported either during pressure test or since this line went into service. The Sagamore Line's documented pressure testing was certified by the MDTE under its former name, the Massachusetts Department of Public Utilities ("MDPU").

According to the design formula for steel pipe specified under Title 49 CFR 192, §192.105(a), the pipe is acceptable for operation at pressures well above the requested 270 psig. Table (1) lists the size, wall thickness, approximate footage, and design pressure resulting from the above-referenced design formula, where $P = (2ST/D) \times F \times Ex T$, and percent of Specified Minimum Yield Strength (SMYS).

Table (1) - - Design Pressure

Main Diameter (inches)	Approx. Footage of Pipe	Wall Thickness (inches)	Design Pressure (based on 49CFR 192.105(a) With class 3 limits)	% of SMYS Based on MOP of 270 psig and compared to 100% of SMYS)
2	2480	0.154	2269	5.9
8	1100	0.250	1014	13.3
10	1550	0.365	1188	11.4
10	32930	0.250	814	16.6
12	88250	0.250	686	19.7

According to Table (1), the maximum design pressure for the pipe segments in this system range from 686 psig to 2269 psig. Therefore, the proposed operating pressure of 270 psig for this pipeline does not exceed the design pressure limitations imposed under Federal regulations. For uprating purposes, all of the uprated pipeline segments will operate at significantly less than 30% of SMYS, which means that Federal requirements for uprating, contained in §192.553 and §192.557, govern.

II. Condition of The Sagamore Line

The Sagamore Line is cathodically protected. Compliance-mandated leak surveys of the line indicate a history where no leaks were found on the line in 40 years of service to Cape Cod. Pipeline inspections of active and abandoned sections over the years have not indicated any visible or measurable losses of pipe wall thickness. The pipe and all fittings are covered or wrapped with appropriate corrosion-inhibiting coatings. The pipe and its fittings are cathodically protected using impressed current. The cathodic protection systems are operated and maintained in accordance Title 49 CFR Part 192, Subpart 1, and other applicable sections of this regulation. Corrosion and maintenance reports show this line to be in excellent condition. Corrosion records and cathodic protection system records are available for further inspection.

III. Pipeline Components

KeySpan, in the process of preparing this request for exception, undertook a detailed review of the components of this gas main. Whenever the main was exposed, it was visually inspected; the pipeline was found to be in excellent condition by KeySpan's engineering and distribution staff, as well as third party consultants. Records pertaining to the design, installation, operation, and maintenance of this line were also utilized in this assessment. All records utilized in this review are located at KeySpan's Cape Division office.

a. Bridge Crossings

This pipeline crosses only one bridge along its route. The pipeline is installed in a utility bay of Sagamore Bridge, which spans the Cape Cod Canal in the town of Bourne. This bridge, which is maintained by the United States Army Corps of Engineers, appears to be in excellent condition. There are no plans to replace it. There are no mechanical pipeline expansion joints along this bridge crossing. Thermal expansion of the pipe is accommodated by the piping layout, which contains an expansion loop. The bridge crossing is equipped with automatic security valves that will stop the flow of gas in the unlikely event that the pipe ruptures. The pipe spanning the bridge is approximately 1,550 feet

long, and is fabricated from 10-inch, Schedule 40, API 5L, Grade B pipe.

b. Railroad Crossings

This pipeline crosses railroad facilities at only two points. The first location is along Willow Street in the Town of Barnstable, and the second location is along Station Avenue in the Town of Yarmouth. The pipe is encased in a 16-inch steel pipe at these locations.

c. Roadway Crossings

This pipeline is not installed or maintained under roadway pavement, except where it is necessary to cross a roadway. These crossings were installed perpendicular to the centerline of the highway, and enclosed in vented 16-inch diameter, steel casings. Side streets, constructed after the pipeline installation, cross the main perpendicular to the centerline of the roadway. These crossings are not cased.

d. Valves

This line has eleven (11) main line valves ("block valves") along its route. Each of these valves has been inspected and has an MAOP of at least 275 psig. Therefore, KeySpan finds these valves acceptable for use at the uprated pressure of 270 psig. These valves are operated and maintained in accordance with 49 CFR 192 and have been integrated into KeySpan's primary valve list. They are also maintained in accordance with KeySpan's operating and maintenance procedures.

e. Miscellaneous fittings

All miscellaneous fittings on this pipeline have been reviewed to ensure that their design pressure meets or exceeds 270 psig. Those fittings that do not have a design pressure that meets or exceeds 270 psig have been replaced.

f. Service Lines

There are 28 service lines supplied by this main. All of them are equipped with two- stage pressure regulation, curb valves, over-pressure shutoffs, outside meters, and meter valves. All service line components have been reviewed and are acceptable for operation at 270 psig. Therefore, no service line changes are anticipated with the uprating.

Additional Quality Assurance

a. Non-Destructive Testing

All constructed pipeline sections exceeded the minimum number of welded joints radiographically inspected for a pipeline operating at less than 20% of SYMS. However, the majority of pipeline segments had 95% or more of their welded joints radiographed with no reported defects found. These radiographs were examined by MDPU (the forerunner to the MDTE)

b. Pipeline Route Inspection and Records Review

The route, and associated documentation, of the Sagamore Line and its pipe segments proposed for uprating to a MAOP of 270 psig have been reviewed by the MDTE.

Uprating of Existing Facilities

KeySpan established an uprate procedure, which has been reviewed by the MDTE, prior to the uprating of the Sagamore Line to 270 psig. This procedure complies with applicable federal and state regulations as well as KeySpan's operating and maintenance procedures. Prior to beginning the uprate procedure, KeySpan reviewed the pipeline's components and replaced any fitting on the Sagamore line that did not meet the appropriate MAOP. As part of this

uprate procedure, leak surveys of the Sagamore Line were conducted prior to, during each incremental pressure increase, and after the uprate was complete. Any leaks found would have been repaired or monitored, in accordance with Federal regulations. These leak surveys verified the integrity and tightness of the pipeline.

Any uprated segment of main was typically isolated from the remainder of KeySpan's gas distribution system. Depending on location, isolation was accomplished in one of two ways:

1. Isolation by Pressure Regulation - At these locations, the uprated main supplies a distribution system operating at a lower pressure via a two-stage regulator system. In KeySpan's two-stage regulator systems, one regulator reduces pressure to an acceptable level while the second regulator provides for downstream over-pressure protection
2. Isolation by Block Valves — Wherever additional isolation was possible, the uprated main was isolated from lower-pressure segments by dual block valves. These valves, located after the distribution regulators, were identified as "normally closed" valves during uprating.

Regardless of the method used, the uprated main will be isolated from lower-pressure main segments in such a manner that will maintain safe operating pressures at all times.

Justification for Waiver Request

As noted earlier, KeySpan utilizes the Sagamore Line to serve a large number of customers throughout Cape Cod. Customer demand for natural gas on the Cape has continued to grow. Because of the unique geography of Cape Cod as a natural peninsula, KeySpan does not have the opportunity to reinforce its distribution system in strategic areas with other sources of pipeline supply. An increase in the MAOP of this line will ensure continuity of service to our customers and allow KeySpan to meet growing demand without adversely affecting public safety.

If alternatives to this uprate were possible, it would force KeySpan to incur substantial additional capital expense that would be passed-on to its consumers. In addition, KeySpan would have to undertake unwarranted and challenging environmental impact issues, such as building a new pipeline. These costs would place KeySpan at a competitive disadvantage with other fuel suppliers, and cause additional expenses to be borne by our existing customers. As it is, KeySpan has already invested over \$1,000,000 in existing facility improvements on this line that are probably 1/20th of the cost of a new, equivalent, pipeline facility.

KeySpan believes that an uprate in operating pressure of the Sagamore Line is the best, immediate option for KeySpan to meet the anticipated growing demand for natural gas on Cape Cod in a safe and reliable manner. It allows for immediate cost-effective and full use of existing facilities while providing an opportunity to analyze and, if required, plan for future pipeline facilities in timely phases.

The waiver would eliminate the need to pressure test under Federal regulatory testing requirements. Otherwise, KeySpan would have to shut-off approximately 40,000 customers if the more typical form of pressure testing was mandated.

It is interesting to note that both industry and regulatory organizations are working on proposals to eliminate the confusion and current interpretive opinion status between uprating, under Subpart K, and testing, under Subpart J. The American Gas Association ("A.G.A."), American Public Gas Association ("APGA"), the Gas Pipeline Technology Committee ("GPTC"), the National Association of Pipeline Safety Representatives ("NAPSR"), National association of Regulatory Utility Commissioners ("NARUC"), the New England Gas Association ("NEGA") and others, are working on initiatives to allow pipelines, that were pressure tested at least once, to be uprated to a new MAOP that would not produce a hoop stress of 30% or more of SMYS in steel pipelines.

Conclusion

KeySpan believes that, because of the unique geography of Cape Cod and the demand for natural gas on Cape Cod,

it is necessary to operate the Sagamore Line at up to 270 psig. We believe this uprate is the best solution to improving the capacity and capability of the distribution system without compromising public safety.

KeySpan has consulted with both Federal and State agencies as to the merits of uprating this pipeline. Given the historical integrity of the pipeline, it is the consensus of concerned parties that this is a valid approach given the fact that the line cannot be removed from service due to the number of lateral pipelines and customers it serves. Consequently, KeySpan invested considerable resources to examine, review and, where necessary, replace components with other components more compatible with the uprated MAOP. This also included any customer service lines, pipeline appurtenances, and adjoining main laterals supplied by the Sagamore Line.

This line meets all design criteria for operating at an MAOP of 270 psig under Title 49 CFR 192. KeySpan believes it has made every effort to thoroughly review the existing Sagamore Line and its related components to ensure a successful uprate to 270 psig.

Granting of this waiver would allow the Sagamore Line to more effectively transport environmentally sensitive, safe, and reliable natural gas to present, and future, consumers on Cape Cod.

I. INTRODUCTION

On July 17, 2002, Colonial Gas Company d/b/a/KeySpan Energy Delivery ("KeySpan"), an intrastate natural gas distribution company that operates in Massachusetts, requested that the Department of Telecommunications and Energy ("Department") grant a waiver of one of the pressure testing requirements in the determination of the maximum allowable operating pressure ("MAOP") of a pipeline. The requirement is contained in Title 49 C.F.R. Part 192 ("Part 192"). KeySpan seeks to elevate the MAOP of a steel pipeline to a pressure of 270 pounds per square inch gauge ("psig") without subjecting the pipeline to test pressure of 1.5 times the new MAOP.

II. REGULATORY REQUIREMENTS

The minimum federal safety standards for transportation of natural gas by pipeline are contained in Part 192. Specifically, § 192.619: Maximum Allowable Operating Pressure: Steel or Plastic Pipelines states:

- (a) ... no person may operate a segment of steel or plastic pipeline at a pressure that exceeds the lowest of the following:
 - (1) The design pressure of the weakest element in the segment, determined in accordance with subparts C and D of this part. . .
 - (2) The pressure obtained by dividing the pressure to which the segment was tested after construction as follows: . . .
- (ii) For steel pipe operated at 100 p.s.i. (689 kPa) gage or more, the test pressure is divided by a facto determined in accordance with the following table:

Class Location	Factors	Factors
	Installed before nov. 12, 1970	Installed after Nov. 11, 1970
1	1.10	1.10
2	1.25	1.25
3	1.40	1.50
4	1.40	1.50

- (3) The highest actual operating pressure to which the segment was subjected during the 5 years preceding July 1, 1970 (or in the case of offshore gathering lines, July 1, 1976), unless the segment was tested in accordance with paragraph (a)(2) of this section after July 1, 1965 (or in the case of offshore gathering lines, July 1, 1971), or the segment was uprated in accordance with Subpart K of this part.
- (4) The pressure determined by the operator to be the maximum safe pressure after considering the history of the segment, particularly known corrosion and the actual operating pressure.

Any waiver of any of the provisions of Part 192 granted by the Department is subject to the approval of the Secretary of Transportation's Office of Pipeline Safety ("OPS"). The Massachusetts Pipeline Safety Code, 220 C.M.R. § 101, and Public Law 103-272, formerly the Natural Gas Pipeline Safety Act, require the Department to give OPS notice of any waiver at least 60 days before it becomes effective. The Department regulations at 220 C.M.R. § 101.02(2) state:

The [Department] may issue a waiver to a gas corporation or municipal gas department from the provisions of Part 192 in Title 49 of the Federal regulations providing that the waiver pertains to an intrastate facility and the [Department] gives notice to the Department of Transportation at least 60 days before the waiver becomes effective.

In addition, Public Law 103-272 states in § 60118: Compliance and Waivers:

(d) Waivers by State Authorities. If a certification under section 60105 of this title... is in effect, the state authority may waive compliance with a safety standard to which the certification... applies in the same way and to the same extent the Secretary may waive

compliance.... However, the authority must give the Secretary written notice of the waiver at least 60 days before its effective date. If the Secretary makes a written objection before the effective date of the waiver, the waiver is stayed....

III. THE COMPANY'S PROPOSAL

KeySpan supplies gas to its customers on Cape Cod through two major distribution lines. One of these lines, the Sagamore line, begins at the Algonquin Gas Transmission Company's meter station in Bourne. The line, constructed of carbon steel pipe, crosses the Cape Cod Canal on the Sagamore Bridge, continuing through Sandwich, Barnstable, Yarmouth, and ending in South Yarmouth. The Sagamore line was constructed from 1962 through 1989 and supplies approximately 60 percent of KeySpan's Cape Cod customers.

The demand for gas on Cape Cod has increased due to an increased population base and the influx of tourists during the summer. KeySpan has determined that the resulting increase in its normal demand and peak demand requirements could affect supply reliability. The Company states that increasing system pressures is the most efficient way to maintain the system's reliability. To accomplish this, KeySpan proposes to increase the MAOP of the Sagamore line from 200 psig to 270 psig.

The length of the line is 23.9 miles; the majority of the pipe is twelve inches in diameter. The remainder of the pipeline ranges from two to ten inches in diameter. Between 1962 and 1989, when the line was under construction, 95 percent of the welds were radiographically inspected.

From a corrosion perspective, KeySpan describes the condition of the line as excellent. A review of records revealed no corrosion leaks in the past 40 years. The pipeline is cathodically protected and coated to meet the the criteria set forth in Part 192, Subpart I, Requirements for Corrosion Protection. Abandoned sections have shown no visible or measurable loss of wall thickness.

Table 1 in KeySpan's application shows that the weakest portion of the line has a maximum design pressure of 686 psig, well above the 270 psig proposed MAOP. The maximum design pressure has been calculated with the design formula in Part 192, §192.105(a).

The pipeline crosses one bridge and two sets of rails. The pipeline lies in the utility bay of the Sagamore Bridge, which spans the Cape Cod Canal. Thermal expansion stress is relieved by an expansion loop. In case of failure on the bridge, the pipeline is equipped with automatic security valves to stop gas flow. At the two railroad crossings, the pipeline is encased in 16-inch steel pipe.

The pipeline has eleven main line valves (block valves) designed for use at 270 psig. KeySpan classifies the valves as primary valves; this classification requires that the valves be checked and serviced at intervals no greater than 15 month.s, but at least once each calendar year [Part 192 § 192.747]. KeySpan has reviewed the design of the fittings and the 28 service lines supplied by the line. Any component which did not meet the 270 psig design criteria has been replaced.

IV. ANALYSIS AND FINDINGS

KeySpan's pipeline meets three of the four requirements of § 192.619(a). The design pressure of the weakest segment in the pipeline is 686 psig as demonstrated in Table 1 of the petition. The test pressures for the pipeline after construction ranged from 300 psig to 400 psig. In the above table, those segments of the pipeline constructed prior to November 12, 1970 would require a test pressure of 378 psig, while those segments constructed after November 11, 1970 would require a test pressure of 405 psig.

KeySpan performed the general requirements of uprating the pipeline as required by Part 192, of Subpart K, Uprating. The uprating plan was reviewed by the Department and the incremental pressure increases and leakage surveys were witnessed by the Department. The only obstacle barring KeySpan from establishing a new MAOP of 270

psig is the lack of the pressure test to 150 percent of the new MAOP as described above. This would require that Keyspan isolate and remove the line from service. The only other supply source to Cape Cod is the Bourne line which is not large enough to supply the entire Cape Cod area by itself.

Several waivers of the pressure testing provision have been granted by other states and approved by OPS. OPS approved a waiver granted by the Maryland Public Service Commission which allowed an operator to use uprating to establish an MAOP of 240 psig. In sanctioning the waiver, OPS noted that the hoop stress level is below 30 percent of the pipe's specified minimum yield strength ("SMYS").

In another decision, OPS sanctioned a Missouri Public Service Commission waiver that allowed an operator to uprate a pipeline's MAOP to 175 psig, the pressure to which the pipeline had previously been tested. The pipeline could not be removed from service for standardized pressure testing because it was the only supply to a city. The higher pressure resulted in the hoop stress being six percent of SMYS. The Missouri Public Service Commission also required the operator to leak survey the line annually. OPS noted that this is more stringent than the federal requirement in Part 192. Part 192 requires the line to be leak surveyed once every five years. OPS stated that the annual leakage survey requirement contributed to its approval of the waiver.

The hoop stress in the Sagamore line lies between the two cases noted above. The hoop stress at an operating pressure of 270 psig is 19.7 percent of the pipeline's SMYS which is well below the 30 percent threshold that OPS noted in its approval of the Maryland Public Service Commission waiver. Similar to the Missouri case, the Sagamore line cannot be removed from service because the Bourne line is not large enough to supply all of Cape Cod by itself. In granting the waiver to the operator, the Missouri Public Service Commission required that the operator leak survey that line annually. OPS stated that this was part of the reason that they were approving the waiver. Massachusetts' regulation, 220 C.M.R. 109: "Design, Construction, Operation and Maintenance of Intrastate Pipelines Operating in Excess of 200 psig", §109.13, requires that:

(5) Each pipeline shall be leak surveyed at least once each calendar year but at intervals of no more than 15 months. Leak surveys shall be done with flame ionization detectors or equivalent devices.

With an MAOP in excess of 200 psig, KeySpan would be required to leak survey the Sagamore line annually.

The Sagamore line has eleven block valves, each of which is rated to operate at a pressure of 275 psig. KeySpan categorizes each of these valves as a primary valve, meaning that each valve is relied upon to shut down the line or a portion of the line in an emergency. KeySpan also states that the valves are operated and maintained in accordance with 49 CFR 192. Part 192 requires that primary or critical valves be inspected annually. Section 192.747: "Valve Maintenance: Distribution Systems" states:

Each valve, the use of which may be necessary for the safe operation of a distribution system, must be checked and serviced at intervals not exceeding 15 months, but at least once each calendar year.

With an operating pressure of 270 psig, the Sagamore line operating pressure will approach transmission line classification. For transmission lines, Part 192 requires that primary or critical valves be partially operated annually. Section 192.745: "Valve Maintenance Transmission Lines" states:

Each transmission line valve that might be required during any emergency must be inspected and partially operated at intervals not exceeding 15-months, but at least once each calendar year.

In the interest of providing an extra margin of safety to the public, the Department finds that the eleven primary valves should be subject to the same maintenance requirement as transmission line valves. Thus, the valves should be partially operated at least once a year, but no more than 15 months apart.

V. ORDER

Accordingly, after due consideration, it is:

ORDERED: KeySpan Energy Delivery is hereby exempted from the pressure testing requirement in 49 C.F.R. Part 192 and authorized to establish an MAOP of 270 psig for the Sagamore line in Bourne, Sandwich, Barnstable and Yarmouth.

The foregoing exemption is granted subject to the following conditions:

- 1.** Each of the eleven primary valves on the line shall be partially operated at least once each calendar year, but no more than 15 months apart. The annual valve maintenance function shall be recorded and kept for a five-year period prior to disposal to document KeySpan's compliance with the requirement.
- 2.** Concurrent with the requirements of 220 C.M.R. 109.13, KeySpan shall perform leakage surveys annually.

The foregoing waiver is granted with an effective date of November 1, 2002, provided that the Secretary of Transportation or his designee does not object to the waiver prior to the effective date.

By Order of the Department,
Paul b. Vasington, Chairman
James Connelly, Commissioner
W.Robert Keating, Commissioner
Eugene j. Sullivan, Jr., Commissioner
Deirdre K. Manning, Commissioner

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court, sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).